



DATE: May 8, 2017

TO: Council Sustainability Committee

FROM: Director of Utilities & Environmental Services

SUBJECT Update on the Recycled Water Storage and Distribution Project

RECOMMENDATION

That the Committee reviews and comments on the report.

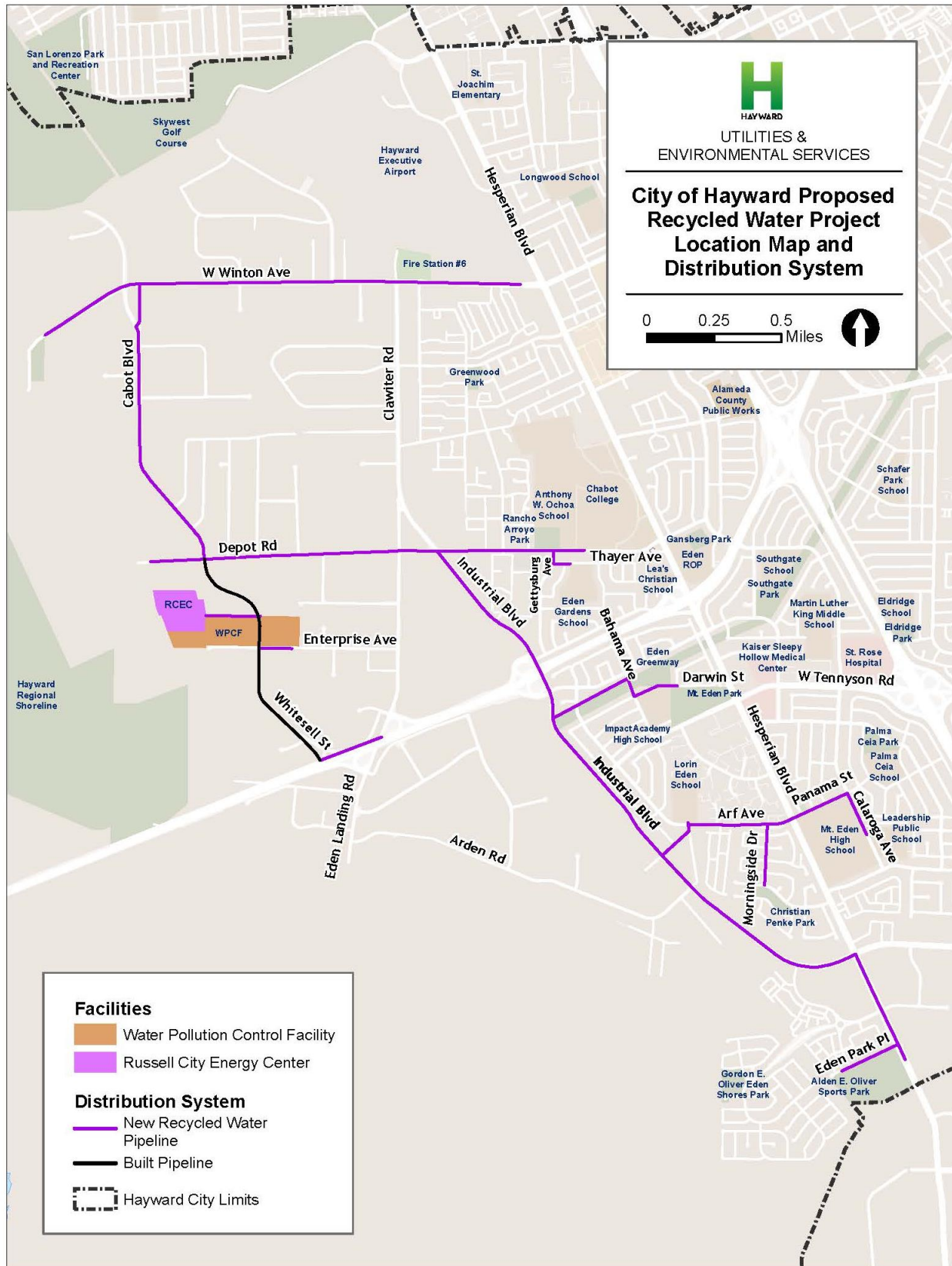
SUMMARY

The City continues to make progress on implementing the Recycled Water Storage and Distribution Project. The project will provide recycled water for irrigation of parks, schools, and landscaped areas around commercial and industrial buildings. 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-proof water supply for customers that connect to the recycled water system. This report has been prepared to update the Committee on the status of the various project elements that are needed to implement the recycled water project, including discussions to purchase recycled water from Russell City Energy Center, permitting requirements, project design, and outreach to potential recycled water customers. The project is currently scheduled to be substantially complete by the end of 2018 with customer connections to the recycled water system occurring in early 2019.

BACKGROUND

The City's Recycled Water Storage and Distribution System Project consists of constructing a one-million-gallon storage tank and pump station at the City's Water Pollution Control Facility (WPCF) and installing approximately ten miles of distribution pipelines and customer connections to deliver an estimated 290 acre-feet per year, or about 260,000 gallons per day, of recycled water. The water will be used for irrigation of parks, schools, and landscaped areas around commercial and industrial buildings. The project area and distribution system are shown on Figure 1.

Figure 1. Recycled Water Project Area and Distribution System



The project currently does not include installation of a recycled water treatment facility because the City anticipates purchasing surplus tertiary treated recycled water from Russell City Energy Corporation, LLC's (RCEC) Recycled Water Facility, located adjacent to the WPCF. However, in the event RCEC and the City are unable to reach agreement on the final terms and conditions of a recycled water supply agreement and/or the City determines it is more feasible to operate separate recycled water facilities, the project design provides flexibility to install City-owned treatment facilities at the WPCF in the future. A City-owned recycled water treatment facility option was previously analyzed and considered in the environmental documentation prepared for the City's recycled water project.

DISCUSSION

This section describes the work required, status, and schedule of the major project elements that are needed to implement the recycled water project. In addition, this report discusses planning for future phases of the recycled water project that could expand the recycled water system to serve additional irrigation customers and provide recycled water for industrial purposes.

Recycled Water Supply Arrangement

City and RCEC staff are currently in discussions on a recycled water supply agreement for the City to purchase surplus tertiary treated recycled water from RCEC's Recycled Water Facility. If successful, this arrangement, which had been contemplated in the Water Supply Agreement between the City and RCEC, could benefit both the City and RCEC. Under the proposed terms of the agreement, RCEC would provide up to 0.5 million gallons per day (MGD) of tertiary treated recycled water that meets Title 22 of the California Code of Regulations (Title 22 requirements) for the City's project. Title 22 requirements are stringent water quality standards set by the State to ensure the safe production, distribution, and use of recycled water in California.

The City's cost to purchase recycled water would be based on the incremental cost for RCEC to produce additional recycled water. The cost is expected to be below the current wholesale purchase cost of drinking water. The City would pay all costs for RCEC to modify piping and related facilities to deliver recycled water to the City.

There are currently times, although infrequent, that RCEC experiences process upsets that cause the Recycled Water Facility to produce recycled water that does not meet Title 22 requirements and thus cannot be used. These events typically occur during start-up of the Recycled Water Facility. During these periods, RCEC is forced to use potable water for its cooling towers until the process upset is resolved. Under the terms of the proposed agreement, the City would allow RCEC to return water that does not meet Title 22 requirements to the WPCF to help expedite RCEC's efforts to get its Recycled Water Facility back online and producing recycled water that meets Title 22 requirements. RCEC would pay the sewer service charge for any non-compliant recycled water discharged to the City's WPCF. Under the terms of the proposed agreement, the connection fee would be waived so long as RCEC's discharge meets certain limits specified in the agreement.

The proposed term of the recycled water supply agreement would be for a two-year period that begins once the City's project is fully constructed and ready to receive recycled water. The agreement would provide for automatic one-year extensions, unless terminated by either party after the initial two-year period. Both City and RCEC staff agree that a two-year initial term would provide sufficient time to determine whether the arrangement is successful or whether the parties would prefer to explore other options for a recycled water supply. The ability of RCEC to deliver recycled water for the City's project is conditioned on RCEC's ability to first produce enough recycled water to meet RCEC's own operational needs. While both parties have evaluated the capacity of the Recycled Water Facility and determined that there is available capacity to produce recycled water for the City's initial phase of the recycled water project, the supply from RCEC may not be sufficient to meet the future recycled water needs of the City as future expansions are envisioned, planned, and implemented. In addition, RCEC has indicated that they may want to explore options in the future where the City produces recycled water and RCEC becomes a recycled water customer. Both parties believe that it makes sense to enter into a short-term agreement while discussions and planning on longer term recycled water arrangements continue.

RCEC and City staff have developed most of the key terms of the recycled water arrangement and are currently discussing the remaining issues. Staff anticipates bringing a draft agreement to Council for consideration in July 2017. Implementation of the agreement is dependent on both parties completing and receiving all necessary approvals needed to implement the project. If RCEC is unable to secure the necessary permit approvals, or if the parties are unable to reach agreement on final terms and conditions, staff would return to Council to request authorization to proceed with installing City-owned recycled water treatment facilities at the WPCF. This option was previously analyzed and considered in the environmental documentation prepared for the City's recycled water project.

Permitting

The City's project will need to meet stringent regulations for the production, distribution and use of recycled water. In June 2016, the State Water Resources Control Board (SWRCB) adopted a General Order for permitting and use of recycled water for non-potable uses. The General Order was developed in response to the Governor's 2014 Drought State of Emergency proclamation and streamlines the process for permitting recycled water projects. Under the new General Order, the State can delegate its authority for managing recycled water programs to public agencies and private entities, which allows agencies to directly permit customers rather than needing to apply for individual use permits from the State. To apply for a so-called Master Recycled Water Use Permit, the City will need to apply to the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the Division of Drinking Water (DDW), which details how the City intends to manage its recycled water program and comply with regulatory requirements for issuing, revising, and enforcing individual customer use permits.

Staff anticipates submitting the application for the City's recycled water program to the State in May 2017. Review and approval by regulatory agencies is expected to take three to four months and be completed prior to the start of construction. Even after the State approves the City's recycled water program, the City will need to work closely with the DDW, which will review the City's customer retrofit designs to ensure the separation and protection of drinking water supplies.

RCEC will also need to make minor modifications to its recycled water use permits to add the City as a user of recycled water produced by their Recycled Water Facility. RCEC will be responsible for obtaining the necessary permit modifications from the RWQCB, DDW, and California Energy Commission. Staff will assist and support RCEC, as needed.

Project Design

In March 2016, staff initiated work on the design of the storage tank, pump station, and distribution system. The City's recycled water project originally contemplated an option of using an existing abandoned eight-inch diameter Shell Oil pipeline to form the backbone of the distribution system. However, based on numerous and complex issues that were raised during design, including concerns with the ability to successfully rehabilitate the pipeline, staff is proceeding with the option of installing new water mains for the recycled water distribution system.

The design is currently at a 75% level of completion and is expected to be completed and the project advertised for construction in fall 2017.

Customer Retrofits

Customer retrofits involve making modifications to a customer's on-site piping to connect the customer to the new recycled water system and maintain complete separation of the recycled water and drinking water systems at all times. On February 28, 2017, the City Council approved execution of a professional services agreement with HydroScience Engineers Inc. to support the City's work with retrofitting customers to use recycled water for irrigation. There are several critical tasks involved in customer retrofit conversions, including site visits, proper training of site supervisors, design and installation of the retrofits, and testing and inspection activities. All work involved must be acceptable to the customer and meet both technical and regulatory requirements for use of recycled water.

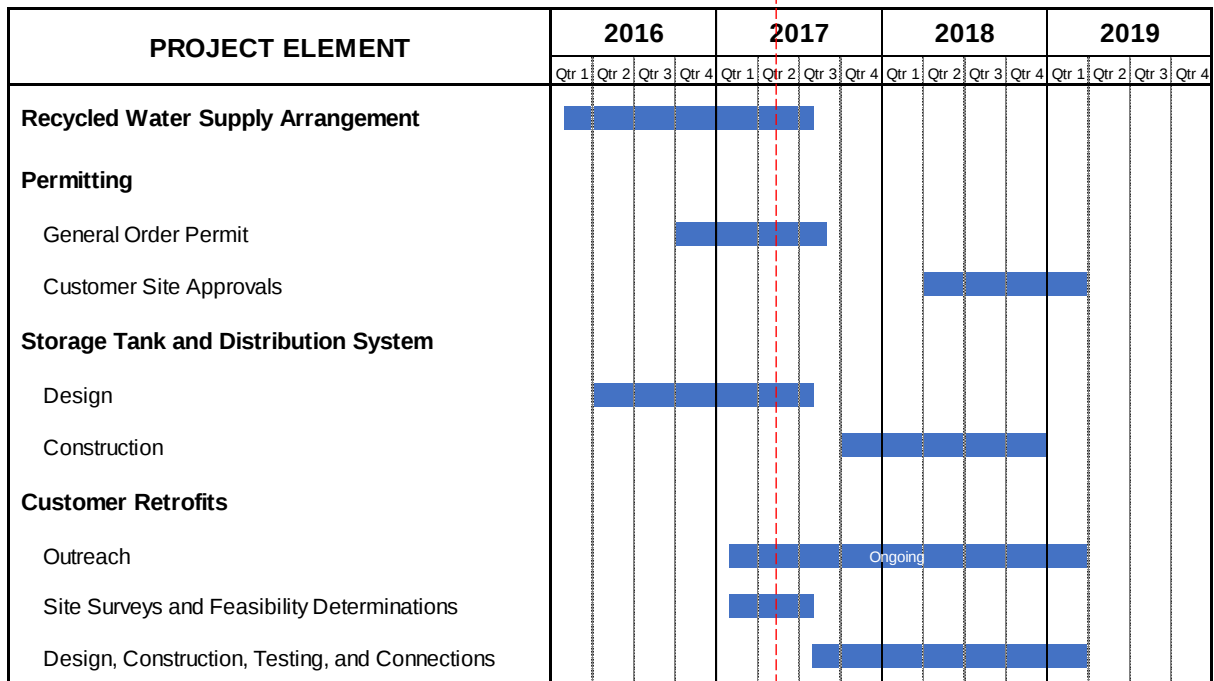
Staff has identified approximately forty sites that could potentially be converted to recycled water. The current list of potential recycled water customers includes five industrial businesses, twenty-two commercial businesses, Chabot College, four schools, and four parks. Staff plans to start setting up individual meetings with customers to provide information and answer questions the customer may have on the process of converting to recycled water, and to perform a site survey to determine the feasibility of retrofitting the site to use recycled water. Staff will also take the opportunity to identify which sites have the potential to use recycled water for future industrial applications.

Initial customer outreach will focus on schools and parks, which typically use large quantities of water for irrigation, and expand to include business parks and industries. Outreach materials have been developed to address common questions that customers will have on the benefits and costs of utilizing recycled water and can be viewed at: <http://www.hayward-ca.gov/your-government/departments/utilities-environmental-services/recycled-water>

Schedule

The estimated schedule for the recycled water project is shown in Figure 2. Staff currently anticipates substantial completion of construction by the end of 2018 with customer connections to the recycled water system occurring in early 2019.

Figure 2. Project Schedule



Future Expansion Planning

The recent drought has highlighted the benefits of recycled water as a sustainable, drought-proof water supply, resulting in an increased interest by Hayward customers to use recycled water for irrigation and industrial uses. Staff plans to prepare an update of the Recycled Water Facilities Plan in 2018 to serve as a guide for implementing future phases of the City's recycled water project. The study would look at expanding the recycled water system to serve additional users, including industrial applications. It would also evaluate a range of recycled water supply options to meet the City's future buildout recycled water demands, including construction of a City-owned recycled water treatment facility.

While the City's recycled water efforts are focused on using recycled water for non-potable uses, this report offers an opportunity to make the Committee aware of statewide efforts related to recycled water for potable reuse. Potable reuse is the use of purified recycled water to augment drinking water supplies through methods such as groundwater recharge or blending with other water supply sources. In December 2016, the SWRCB and DDW completed and delivered a report to the California Legislature that evaluated the feasibility of developing uniform water recycling criteria for potable reuse. The report found that developing regulations for potable reuse is feasible, but several research activities must be completed to help inform the development of regulations. To this end, several legislative actions have been proposed to set timelines for developing potable reuse regulations and definitions for various types of potable reuse.

In addition, several local and regional agencies are currently in various stages of evaluating the possibility of potable reuse. Staff will continue to monitor potable reuse efforts and evaluate how these efforts may impact the City and what role, if any, potable reuse may play in the City's future recycled water plans.

ECONOMIC IMPACT

The economic impact of the recycled water project on customers will, to a large measure, depend on the total costs to implement the City's recycled water project, which include the cost to purchase recycled water from RCEC, capital cost, and operating and maintenance costs. Staff will evaluate these costs and recommend a rate structure that would provide a balance between recovering costs over the life of the project and providing an incentive for eligible customers to use recycled water. The delivery of recycled water can provide cost savings to the customers, including businesses that would receive recycled water. The benefit of this project to the community is that it will ensure a reduction in potable water use, allowing for greater diversity and reliability in the City's water supply especially during droughts.

FISCAL IMPACT

The FY 2017 Capital Improvement Program includes \$12 million in the Sewer Improvement Capital Fund for this project. On September 13, 2016, Council authorized staff to submit a revised application for recycled water funding through the State Revolving Loan (SRF) Loan Program to fund the entire cost of the project. As described in the September 13, 2016 staff report, the project is currently in the final design phase and the estimated project cost has increased from \$12 million to approximately \$20 million due to necessary changes and refinements in the project design. Based on recent discussions with State staff, the City is currently in line to receive \$5.8 million in grant funding and \$13.5 million in low interest loans from the State's SRF program to help finance the project. The City is also pursuing federal grant funding from the US Bureau of Reclamation under Title XVI. This project will not utilize any General Fund monies and any debt service incurred will be obligated to the Water and Wastewater Enterprise Funds.

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 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.

Staff plans to initiate contact with customers in May to begin site surveys and identify key customer contacts. 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. Staff will also be working closely with 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. As noted in the Discussion section, staff has developed informational materials on the City's recycled water project that can be viewed at: <http://www.hayward-ca.gov/your-government/departments/utilities-environmental-services/recycled-water>.

NEXT STEPS

Staff will continue work needed to implement the recycled water project and update the Committee periodically. Next steps include:

- Submitting the City's recycled water permit application to the State for review and approval;
- Finalizing a potential recycled water supply agreement with RCEC;
- Completing final design of the storage and distribution system; and
- Continuing customer outreach and scheduling individual site assessments.

Prepared by: Jan Lee, Water Resources Manager

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

Approved by:

A handwritten signature in black ink, appearing to read 'K. McAdoo', written in a cursive style.

Kelly McAdoo, City Manager