DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Utilities & Environmental Services

SUBJECT Recycled Water Storage and Distribution System Project: Authorization to Execute a Professional Services Agreement for Professional Services for Recycled Water Customer Retrofit Conversions

RECOMMENDATION

That Council adopts the attached resolution authorizing the City Manager to execute a professional services agreement with HydroScience Engineers, Inc. (HydroScience) for professional services for recycled water customer retrofit conversions, in an amount not to exceed $710,000.

SUMMARY

The City's Recycled Water Storage and Distribution System Project includes the design of irrigation system retrofits necessary to convert customers from the City's potable drinking water system to the new recycled water system. There are a significant number of supporting tasks that must be completed to comply with State regulations for use of recycled water, including conducting site visits, properly training site supervisors on the use of recycled water, and testing and inspecting the installed customer retrofits to ensure complete separation of the recycled water and potable drinking water systems. The field work includes retrofitting the piping on a customer's property for the site to be able to use recycled water. This specialized work requires extensive knowledge and experience with recycled water regulations and customer irrigation systems. A request for proposals was issued to qualified consulting firms. Based on staff evaluation of the proposals received, staff recommends that the City execute an agreement with HydroScience in an amount not to exceed $710,000.

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 10 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, roadway medians and landscaped areas around commercial and industrial buildings. The project, as currently envisioned, does not include a recycled water treatment facility.

The project anticipates that the City would purchase surplus tertiary treated recycled water from Russell City Energy Corporation, LLC's (RCEC) Recycled Water Facility, located adjacent to the WPCF. This possibility, which can benefit both the City and RCEC, had been contemplated in the City water supply agreement with RCEC. Staff is currently in discussions with the company on the terms and conditions of a recycled water supply agreement for RCEC to provide the recycled water supply for the City's project. If the City is unable to reach agreement with RCEC, staff would return to Council to request authorization to proceed with installing separate 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.

Design of the storage tank, pump station and distribution system is currently underway and expected to be completed by July 2017. A critical next step in the project is to design the on-site piping modifications and appurtenances, such as backflow prevention devices, needed to protect the City's potable water distribution system from potential contamination as irrigation customers are connected to the new recycled water system. In addition to the technical aspects of this effort, there is also a regulatory and educational component to retrofitting customers to ensure that the City and customers comply with State requirements for using recycled water. These requirements include maintaining complete separation of the recycled water and potable water systems at all times, installing proper signage at sites, and making sure that site supervisors in charge of irrigations systems are properly trained in the use of recycled water.

DISCUSSION

Recycled water customer retrofit conversions require specialized expertise and knowledge of recycled water regulations and irrigation systems, particularly since conditions at each site will be unique and different. Because staff does not have the expertise to perform this technical work, it is in the City's best interest to contract with a qualified and experienced firm to provide these services. To that end, staff issued a request for proposals (RFP) in early January 2017. The following paragraphs describe in detail the work to be completed, the consultant selection process, and cost for the proposed services.

Scope of Work

The City has identified forty-one irrigation sites that could potentially be connected to the recycled water distribution system. Originally, a total of twenty-four customer connections were planned based on a preliminary market assessment. However, with the final alignment of the new pipelines, an additional seventeen commercial customers were identified that may be able to use recycled water for irrigation. Staff expects that the actual number of connections may change after evaluations to determine the feasibility of retrofitting each site are completed. The work that would be included in the professional services agreement is described in this section.

Customer Contact and Site Surveys

Retrofitting customers to use recycled water requires extensive communication with the customer. City staff would make initial contact with potential customers to introduce the consultant and proposed retrofit work. The consultant would then meet with each of the forty-one customers to document site conditions and determine site-specific retrofit requirements. Information that would be collected includes potential recycled water demand, system pressure requirements, and location and description of existing water distribution and irrigation system facilities. The consultant would also discuss with each customer the qualification and training requirements for the customer's on-site recycled water site supervisor.

Feasibility Determinations

Based on the individual site surveys, the consultant would then prepare preliminary designs for each potential customer site in accordance with City and State standards for use of recycled water. Preliminary designs would show the approximate location of the new recycled water meter, appropriate backflow prevention devices, and any site modifications required to convert the customer to recycled water. The work and costs involved to retrofit customer sites will differ and depend on the complexity of the site. For example, in some cases, the irrigation system is currently on a separate meter with an appropriate backflow prevention device, so minimal physical effort will be needed to disconnect the customer from the potable water system and connect them to the new recycled water system. In other cases, the customer's irrigation and potable water service may be provided through a single meter, which requires separating the two uses and installing proper backflow prevention on the potable water line.

The consultant would then evaluate the feasibility of each customer retrofit using cost effective and constructability criteria, with the City staff making the final determination on which sites are most feasible to proceed with retrofitting to use recycled water.

Retrofit Designs

Retrofits would be designed for customer sites that the City determines are feasible to connect to the new recycled water system. Customer retrofits generally include modifying piping and installing backflow prevention devices necessary to ensure complete separation of the recycled and potable water systems at all times. For the City, a major effort may be upgrading backflow prevention devices on existing fire lines to ensure compliance with State regulations. Design drawings would include specific areas of recycled water use, areas of public access, location and type of signage, location and details regarding nearby wells, and all piping within the use area, such as recycled water, potable water, and wastewater. The final design submittal would also include construction cost estimates.

Site Supervisor Training and Testing

Once the retrofits are installed and prior to connecting to the recycled water system, the consultant would meet with each customer to ensure the customer receives and understands the City's Recycled Water Use Guide, which is currently under development by City staff. The consultant would also provide individual site supervisor training for each customer to make sure they understand the requirements for using recycled water for irrigation.

Prior to connecting sites to the recycled water system, the consultant would also perform cross-connection control testing and coverage testing for each customer site to comply with State regulations for use of recycled water.

Evaluation of Potential Industrial Uses

Multiple customers have been identified that could potentially use recycled water for industrial applications. The use of recycled water in lieu of potable water for cooling water and/or boiler feed water presents some challenges. As part of the scope of services, the consultant would evaluate the feasibility of using recycled water for industrial purposes at these locations, including a water quality requirement assessment, permitting, and needed on-site retrofit work.

Consultant Selection

The RFP was issued to five qualified firms with sufficient experience and capacity in performing this type of professional work. The RFP described the work in detail, including a map of the distribution system and sites, and the City's expectations. Since the work is very specialized, the City was selective in the firms that received the RFP to ensure that they were qualified to provide the very specific services needed. Proposals were received from two firms: HydroScience and West Yost Associates. Two firms declined to propose and another teamed with one of the submitting firms.

Staff evaluated both proposals using defined criteria, such as experience with similar successful projects, knowledge and technical expertise, and appropriateness of the cost and level of effort given the scope of project. Based on an objective evaluation, staff recommends that the City execute an agreement with HydroScience. HydroScience has specialized in planning, design, permitting and construction management for water, wastewater and recycled water projects for twenty years. This firm has performed comparable recycled water retrofit services for many public agencies, including East Bay Municipal Utility District, Dublin San Ramon Services District, and San Jose Water Company. They have retrofitted nearly 500 sites in the Bay Area to recycled water, and would bring extensive and tangible experience and skill to the City's project.

Cost for Services

Staff has negotiated a not-to-exceed amount of $710,000 for the basic services described above, plus additional tasks, such as fire protection engineering, bid services, and services during construction. The cost for HydroScience's proposal is similar to the other proposal received and is consistent with costs incurred by other agencies for this type of work.

It is important to note that, in addition to providing design services under this agreement, HydroScience would spend significant effort in working with customers, performing site visits, training site supervisors, and conducting cross-connection control testing to confirm that the potable and recycled water systems are isolated from each other. There would also be considerable effort devoted to interacting with regulatory agencies to ensure that the retrofits meet all State requirements. The success of the City's recycled water project will depend in large part on the ability of the City's team to work closely with customers to retrofit their sites to receive recycled water. A customer's willingness to convert to recycled water, training and knowledge of the system, and a seamless transition from one system to the other will be key factors in achieving the City's objectives. The customer retrofit consultant will play a major role in this effort.

An added benefit of this project, included in the cost, is upgrading backflow prevention devices on fire lines to sites that receive recycled water. As part of the services provided by HydroScience, the retrofit design will include making sure that all backflow prevention devices on fire lines meet City standards and are located above grade so that the devices can be adequately tested on a regular basis. HydroScience would also provide assistance in ensuring that appropriate signage is in place to alert the public of the presence of recycled water, and assist City staff in complying with necessary regulatory requirements and permitting.

ECONOMIC IMPACT

The economic impact on customers would, 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 costs, 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 costs associated with the design and installation of customer retrofits are included as part of the Recycled Water Storage and Distribution System Project. It is typical for agencies to pay the costs for customer retrofits upfront and recover the costs through rates. In the few instances where agencies have attempted to have customers pay for this work upfront, there

have been significant delays and struggles to sign-up customers and complete the connections.

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. As part of the FY 2018 Capital Improvement Program process, staff will revise the project budget to reflect this refined cost. 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 potable water and improve the reliability and availability of potable 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 30-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.

The current list of potential recycled water customers includes: five industrial businesses; 22 commercial businesses; Chabot College; four schools (Eden Gardens Elementary School, Impact Academy High School, Lorin Eden Elementary School, and Mt. Eden High School); and four parks (Alden E. Oliver Sports Park, Christian Penke Park, Mt. Eden Park, and Rancho Arroyo Park). If the Council approves the resolution, staff and HydroScience would initiate contact with potential recycled water customers. The team plans to work closely and have regular communication with customers throughout the entire retrofit process, ensuring that customer questions and concerns are addressed and site supervisors are properly trained on the use of recycled water. Prior to the consultant preparing final design

drawings for each site, staff will work with customers to obtain agreements that would commit the customer to use recycled water and allow the City and its representatives access to the site for future installation, testing, and inspection.

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. The consultant's scope of services also includes the optional services of a horticulturist with recycled water expertise. The horticulturist would be available to assist City staff in answering any questions or concerns customers may have on using recycled water for irrigation.

NEXT STEPS

If the Council approves the resolution, staff will proceed with execution of the professional services agreement and initiate the recycled water customer retrofit conversions.

Prepared by: Jan Lee, Water Resources Manager

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

Approved by:

Kelly McAdoo, City Manager