



REQUEST FOR COUNCIL ACTION

Title: Water Treatment Plant Finished Water and Backwash Pumping Project - Bid Posting

Preferred Agenda: November 9, 2021

Submitted By: Steven Haney, Utilities Manager
Greg Springman, Public Works Director

Reviewed By: Ray Towry, City Manager

Type of Action: Resolution ____ Motion X Roll Call ____ Other ____

Relevant Code/Policy: n/a

Towards Council Goal: Goal 1.1c Develop specific steps for implementation of the adopted infrastructure master plans (streets)

Attachments: Bid documents for Water Treatment Plant Finished Water and Backwash Pumping Project

Purpose of this RCA:

Staff requests authorization to solicit bids for the Water Treatment Plant Finished Water and Backwash Pumping Project.

Background/Context:

Staff tasked the Engineer of Record (West Yost) and the Integrator of Record (The Automation Group) with designing pumping improvements at the Water Treatment Plant. This project was initiated in 2019 and was previously deferred due to budget and design team capacity. The design is now complete and ready to bid.

This project regards two aspects of the Water Treatment Plant which directly impact the water distribution system: the finished water pumping and the backwash system.

The first issue regards the finished water pumps. The WTP has three finished water pumps that pump potable water into the distribution network. The pumps currently run at a fixed speed, meaning each pump is either fully on or fully off, and every on/off cycle is abrupt. The abrupt on/off cycles send water hammer throughout the distribution network which damages our aged and aging pipes and contributes to new leaks. The pumps were also sized for full buildout of the WTP at 10 mgd. They are oversized for our existing condition at 2 mgd. The consequence is that during high demand in summer, oftentimes one pump is not enough but two pumps is too much, because running two pumps would exceed the rated water pressure limit of the receiving distribution pipes. The proposed improvement will resolve both of these issues by installing variable frequency drives (VFDs) on the finished water pumps which will give operators speed control of the pumps. It will soften the on/off cycles to eliminate this source of water hammer and it allow operators to run two pumps at partial speeds, for a desired flow rate between that of one pump and two pumps.

The second issue regards the filter backwash system. Currently the backwash system draws water from the distribution network to clean the filters, and it also starts and stops abruptly. This also causes water hammer to the distribution system and it is measurable citywide. The proposed improvement will install a pump to provide backwash water out of the clearwell instead of the distribution network. This will eliminate this source of water hammer. The existing connection to the distribution network will be maintained for emergency backup supply of backwash water, but won't be used for daily operation anymore.

Due to long equipment lead times in the current market, staff have authorized The Automation Group to pre-order equipment for the electrical and SCADA integrations, which will be owner-supplied equipment for the contractor to install.

The proposed bid closing date is December 14, 2021. There is a mandatory pre-bid meeting on December 2, 2021.

The Challenge/Problem:

How do we make efficient use of limited funds to operate our water treatment and distribution systems effectively and prolong the infrastructure's useful life?

Stakeholders:

- Sweet Home Residents – Residents deserve well-maintained City infrastructure that meets their needs and improves their quality of life.
- Sweet Home City Council – The City Council has a goal to provide viable and sustainable infrastructure that serves development and improves residents' quality of life.
- Sweet Home City Staff – City Staff have an interest in completing projects that empower them to meet the Council's goals and which reduce staff time spent on reactive maintenance.

Issues and Financial Impacts:

There is \$520k budgeted for this project. The engineer's estimate is \$504k.

Elements of a Stable Solution:

A stable solution will provide efficient completion of needed optimizations such that the useful life of City infrastructure will be maximized and staff have needed operational controls to respond to customer demands.

Options:

1. Option 1 – Do Nothing. The project will remain in the CIP. The unspent funds will go into the ending fund balance and be available for re-budgeting.
2. Option 2 – Post the solicitation. Staff will post the solicitation. The results will be brought to Council after bid closing for contract award approval.
3. Option 3 – Make revisions to the project. Staff will make changes to the project as directed by Council, then bring the bid package back to Council for approval prior to posting the solicitation.

Recommendation:

Staff recommends Option 2 – Motion to allow staff to post the solicitation for the Water Treatment Plant Finished Water and Backwash Pumping Project.