



REQUEST FOR COUNCIL ACTION

Title: Water Treatment Plant Finished Water and Backwash Pumping Improvements Project – Contract Award

Preferred Agenda: November 9, 2021

Submitted By: Trish Rice, Engineering Technician
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 tabulation
Pre-bid meeting sign-in sheet
Bid documents

Purpose of this RCA:

Staff requests authorization to execute the contract for the Water Treatment Plant Finished Water and Backwash Pumping Improvements 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.

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 parts 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.

City Council authorized bid posting on November 9, 2021. A mandatory pre-bid meeting was held on December 2, 2021 and was attended by 12 companies. Bids closed December 14, 2021. We received 7 bids. The low bidder is Pacific Excavation with a bid of \$273,800.

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. The Automation Group has ordered \$158,384 of owner-supplied equipment.

We should expect that due to extremely long lead times on essential parts (currently running approximately 6 months after ordering), the project budget will need to be carried over into FY22-23.

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 – Move to reject all bids and cancel the project. The project will remain in the CIP. The unspent capital funds will go into the ending fund balance and be available for re-budgeting.
2. Option 2 – Move to reject all bids and re-bid the project. The project will remain in the CIP. The delay is not likely to result in any savings, and may cost even more due to industry inflation and difficulty of getting parts.
3. Option 3 – Move to award the Water Treatment Plant Finished Water and Backwash Pumping Improvements Project contract to Pacific Excavation. Staff will execute the contract and give the contractor notice to proceed.

Recommendation:

Staff recommends Option 3 – Move to award the Water Treatment Plant Finished Water and Backwash Pumping Improvements Project contract to Pacific Excavation.