ITEM#: 30
DATE: 02-14-23
DEPT: W&PC

COUNCIL ACTION FORM

SUBJECT: WATER TREATMENT PLANT HIGH SERVICE PUMP VARIABLE FREQUENCY DRIVE (VFD) PROJECT – AWARD OF CONTRACT

BACKGROUND:

The new Water Treatment Plant includes a high service pump station that allows the facility to pump treated drinking water into the distribution system. This supplements the high service pump station at the old plant site, increasing redundancy and resiliency in the event of a disaster and providing a more consistent and even pressure in the water distribution system.

When pumps are suddenly started or stopped it causes a change in the water distribution system pressure. The rapid pressure swings contribute to rusty water calls and, if severe enough, can cause water main breaks. By installing a variable frequency drive (VFD) on a pump, the pump speed can be slowly ramped up or down, thereby dampening the pressure swings. It also allows the pump to be run at less than its full speed, allowing the operators to more closely match the demand from customers. This in turn minimizes the need to frequently start and stop the pumps.

This project will provide and install a new VFD unit to control one of the existing high service pumps at the Water Treatment Plant. This work also includes all the required connections, electrical equipment, and integration services needed to allow the operation of the VFD through both the existing plant control system and operation in a manual mode. A bid alternate was requested to purchase a second VFD should the budget allow. **The FY 2022/23 Water Plant Facility Improvements CIP includes $75,000 for this project.**

A Notice to Bidders for this project was issued on January 3, 2023. On January 24, 2023, bids were opened, and two bids were received. A copy of the bid tabulation is shown below.

Bidder	Base Bid	Bid Alternate (second VFD)	Base Bid + Alternate
Electric Pump	**$59,395**	**$33,989**	**$93,384**
Jetco, Inc.	$74,078	$34,497	$108,575
Engineers Estimate	*$75,000*		

The City staff believes that the Electric Pump provided the lowest responsive bid. This project was designed in-house. so there are no engineering fees.

Project Expense

Construction (base bid only)	$ 59,395
10% Contingency	$ 5,940
Total Estimated Expense	**$ 65,335**

ALTERNATIVES:

1. Award a contract for the Water Treatment Plant High Service Pump Variable Frequency Drive Project to Electric Pump of Des Moines, Iowa, for the base bid only in the amount of $59,395.

2. Award the contract to the other bidder.

3. Do not take any action at this time and provide direction to staff on the future of the project.

CITY MANAGER'S RECOMMENDED ACTION:

Utilizing variable frequency drives (VFDs) is an effective way to minimize pressure swings in the water distribution system, which in turn helps minimize the frequency of water main breaks. While both base bids were below the Engineer's Estimate, the total cost to accept the base bid plus the bid alternate for either proposal exceeded the authorized budget. Therefore, it is the recommendation of the City Manager that the City Council approve Alternative #1 and award the Water Treatment Plant High Service Pump Variable Frequency Drive Project to Electric Pump of Des Moines, Iowa, for the base bid only, in the amount of $59,395.