

ITEM #: 23
 DATE: 09-12-23
 DEPT: W&PC

COUNCIL ACTION FORM

SUBJECT: FINAL COMPLETION OF WATER TREATMENT PLANT HIGH SERVICE PUMP VARIABLE FREQUENCY DRIVE (VFD)

BACKGROUND:

The Water Treatment Plant includes a high service pump station that delivers finished drinking water into the distribution system for use by the Ames community. This supplements the high service pump station that remains in use at the former treatment 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 can cause a momentary change in the water distribution system pressure. These pressure swings contribute to rusty water calls and, if severe enough, can cause water main breaks. One way to soften the pressure spikes is to start and stop pumps slowly using a variable frequency drive (VFD).

This project installed a new VFD unit to control one of the pumps at the Water Treatment Plant, and included all required connections, electrical equipment, and control system integration services needed to allow proper operation of the VFD. The VFD allows the pump to accelerate and decelerate slowly, limiting the pressure swings. Additionally, it allows the pump to be operated at a lower flow rate, giving the plant operators greater flexibility in setting the rate that water is pumped into the distribution system. Over time, additional VFD installations in the water system are planned.

On February 14, 2023, Council awarded a contract to Electric Pump of Des Moines, Iowa, in the amount of \$59,395. All work on the project was completed in accordance with the plans and specifications on August 9, 2023. A Statement of Completion has been prepared by staff and the project is now ready for acceptance by the City Council. The work was designed in-house so there were no engineering fees, and there were no change orders during the execution of the contract. The project budget is shown below.

	Expenses	Funding
Electric Pump Contract	\$ 59,395	
FY 2022/23 CIP		\$ 75,000
<i>Water Plant Facility Improvements Project</i>		
	\$ 59,395	\$ 75,000

ALTERNATIVES:

1. Accept final completion of the Water Treatment Plant High Service Pump Variable Frequency Drive Project by Electric Pump and Tool Service in the amount of \$59,395.
2. Do not take any action at this time and provide direction to staff on the actions needed to close out the project.

CITY MANAGER'S RECOMMENDED ACTION:

All work for this project has been completed in accordance with plans and specifications. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as described above.



Smart Choice

ENGINEER'S STATEMENT OF COMPLETION

Water Treatment Plant High Service Pump Variable Frequency Drive Project

Engineer: Ames Water and Pollution Control Department

Contractor: Electric Pump

I hereby certify that the Water Treatment Plant High Service Pump Variable Frequency Drive Project, by a contract awarded by the Ames City Council on February 14th, 2023, has been satisfactorily completed in general compliance with the terms, conditions, and stipulation of said contract.

The work was completed on August 9th, 2023.

I further state that the total amount due to the contractor for the fulfillment of said contract is \$59,395.

Signature: Lyle Hammes

Date: 30 August 2023

Lyle Hammes, PE

Assistant Director, Water and Pollution Control

