Attachment B – Additional Project Information

Pump VFD Replacement Project

Project Discussion

This project replaced the Variable Frequency Drives (VFDs) at five water and wastewater pump stations. VFDs are devices that control the speed and torque of the pumps' electric motors. They provide increased control and efficiency of the pumps and their motors.

In 2022, the project was substantially complete, including testing and commissioning of the VFDs. As the contractor was working on final punch list items, the VFDs began to exhibit faults and were not working properly. Fortunately, the pump stations included redundancy and were able to continue to provide required services, but fixing the faults and determining their cause was essential to restoring that redundancy.

The contractor engaged the manufacturer and local vendor to help investigate, while the City retained the design electrical engineer to help. Troubleshooting took until late 2022 when it was determined that the malfunctioning VFDs contained faulty power units. The faults stopped happening as these power units were replaced in each VFD.

Entering 2023, the VFDs appeared to be working. Still, given the effort it took to determine the problems with the brand-new VFDs, the City was unwilling to accept these units as finished construction without further testing and operation. The contractor re-tested the units and agreed to hold off on final acceptance until the City was comfortable that all problems had been resolved. As of the writing of this memo, the VFDs have performed flawlessly for over 2 years, and Public Works staff is confident that the problems have been addressed and the contractor has delivered as required in the construction contract.

Fiscal Information

Current Project Budget	
	$2,901,728

Project Costs	
Design	$382,463
Right of Way	$204
Construction	$1,553,688
Total Project Cost	**$1,936,355**
Budget Difference	**$965,373**

Project Photos

Novelty Hill Operations Center VFDs (the two tall units on the right)

Trilogy Pump Station VFDs