VILLAGE OF SCHAUMBURG
PROGRESS THROUGH THOUGHTFUL PLANNING

MEMORANDUM

DATE: October 6, 2021

TO: Michael Hall, Engineering & Public Works Director

FROM: Brian Wagner – Superintendent of Utility Services

SUBJECT: Station 3-Pump 1, Station 20 Pump-2 and Station 22 Motor Control Center Replacements Project to F.H. Paschen

The Village of Schaumburg's (Village) water system is comprised of 285 miles of water main, 7 pumping stations, and 10 reservoirs. Generally, each station has a motor control center (MCC) which turns the motors on and off, a relative number of pumps, metering equipment, and basic telemetry systems for communication. Below, find a simple representation of a pumping station.

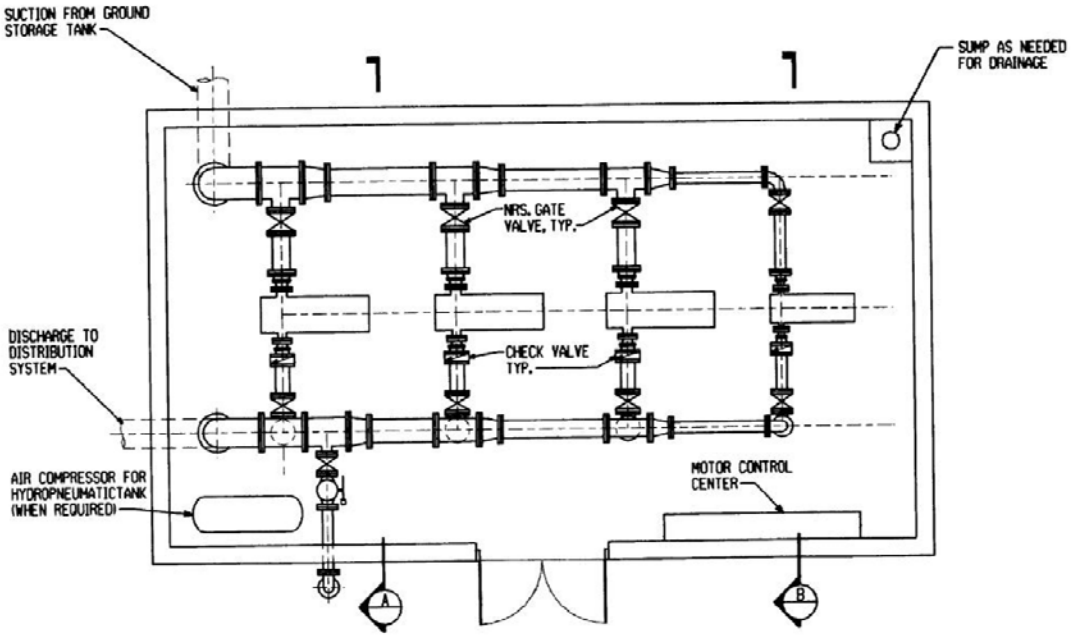

Figure 5-1. Pumping Station Typical Layout

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A number of stations had their MCC upgraded during the SCADA Performance contract in 2018. Staff initiated a CIP item for the replacement of the balance of MCC's, pumps and motors between FY 2022/23 and FY 2026/27. This replacement schedule was based on a 30-year life cycle for pumping and motor equipment as noted in 2018 ISES Facility Condition Assessment. Most, if not all, is original equipment and is at or beyond it's expected life cycle. With pumps and motors, there are typically two courses of action, either rebuild or replace. The final decision is based on a detailed evaluation of equipment for wear, tear, and age. It's never known from looking at the outside of the equipment the full extent of repairs needed, an invasive evaluation is required.

Over the course of the last 18 months there have been a total of 4 pumps and 1 MCC failure ahead of the planned CIP replacement schedule. One failed pump replacement came to EPW Committee in September 2021, another is only in need of a rebuild and will be handled with operating budget funds, the final two pumps and MCC are included in this item. The following table represents the station and associated failed equipment along with replacement costs.

Station #	Problem	Estimated Replacement Expense	Date of Initial Service	Reason for Failure
3	Failed Submersible Pump/Motor #1	$98,821.32	1969	Age/Wear and Tear
20	Failed Pump #1	$82,919.48	1980	Age/Wear and Tear
22	Failed MCC	$359,712.76	1996	Age/Replacement Parts Unavailable
Grand Total		**$541,453.56**		

Currently, each failed pump has a second redundant pump that is operational. To maintain long-term system integrity, it is necessary to expeditiously replace the equipment.

Due to the unusual times, it has become necessary to add an allowance for any order more than 30 days. This is due to inflationary prices in the commodity markets. Commodities we deal in are experiencing 3-5% monthly price increase. Commodities like PVC and copper aren't priced until the truck is loaded and shipping occurs. This allowance isn't intended to be spent unless pricing dictates the need. If not included, these items may need a change order prior to the project beginning, which only delays the project further.

In addition to commodity pricing increases, there are also significant lead time delays. The lead time for an MCC is currently 25 weeks and pumps at 8-10 weeks.

Staff solicited a quote from a Job Order Contract (JOC) contractor, F.H. Paschen of Chicago, IL, through the National Cooperative Purchasing Alliance (NCPA) Contract #04-14. Staff has used F.H. Paschen as a contractor on multiple projects throughout the past year and has had a positive experience with the quality of final product, the speed work is completed, reduced project timelines by 21-24 weeks compared to the traditional design/build format, the communication, and documentation from their project management team. F.H. Paschen sends a construction superintendent onsite daily to check in on subcontractors and the project status. They relay this information directly back to Engineering and Public Works (EPW) staff. In the past, they have also identified and resolved potential problems before becoming an issue. Staff believes that using their services frees many hours of staff time by reducing the frequency of trips to jobsites and reducing the need for staff to coordinate multiple vendors in a timely

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and logical sequence. In addition to project management savings, there is no design expense since the burden is on the contractor to provide a like-kind replacement. There is $41,000.00 in savings for design costs when work is performed under a JOC. The subcontractor being utilized by F.H. Paschen is Dahme Mechanical Industries Inc. of Arlington Heights, IL.

The unbudgeted project expenses will be funded through a transfer of $181,740.80 from the Water Well 15 Rehabilitation Project (20025-20-230) to the Water Station Electrical Improvements-Pumps and Motor Replacement –All Stations Project (22028-20-230). The remaining unbudgeted expense for this project in the amount of $359,712.76 will be temporarily used from the general reserves of the Utility Fund in order to initiate a Purchase Order to the vendor. The $359,712.76 expense will be realized in FY 2022/23. A summary of these expenditures and transfers is represented in the budget table.

Due to the MCC manufacturing lead time of 25 weeks, this item will not be expensed until FY 2022/23. At that point, it will be expensed within the original CIP project, Water Station Electrical Improvements-Motor Control Center Replacement – Station 2, 21 and 22 (22027-20-230).

The Water Well 15 Rehabilitation Project expenses will be reallocated with $500,000.00 in ARPA funding.

Staff is recommending FH Paschen be awarded the contract for Station 3-Pump 1, Station 20 Pump-2 and Station 22 Motor Control Center Replacement Project due to the quality of final product, the speed work is completed, 21-24 week reduced timeline from traditional bid process, $41,000.00 in design savings, the communication, and documentation from their project management team.