

VILLAGE OF HOMEWOOD



BOARD AGENDA MEMORANDUM

DATE OF MEETING: November 12, 2024

To: Village President and Board of Trustees

Through: Napoleon Haney, Village Manager

From: Joshua Burman, Director of Public Works

Topic: Programmable Logic Controllers and Communication System Upgrades (Phase 1)

PURPOSE

During last year's budget discussions and the formulation of the five-year (5) capital plan, it was decided that the Motor Control Center (MCC) at Water Plant #1 needed to be replaced. The replacement of the MCC also necessitates upgrades to the Programmable Logic Controllers (PLC) and Communication Systems, since many controls and radio communications at the stations are outdated and have reached the end of their service life.

Due to the substantial cost and scope of this project, staff developed a phased replacement schedule for the controls and communications at the water facilities, sanitary lift stations, and stormwater stations. Staff requests the Village Board approve the Programmable Logic Controllers (PLC) and Communication System Upgrades (Phase 1) from Metropolitan Industries, of Romeoville, IL for the water stations in an amount not to exceed \$145,461.

PROCESS

Why are PLC and Communication upgrades needed?

The replacement of the Motor Control Center at Water Plant #1 will necessitate upgrades to the Programmable Logic Controllers (PLC) and Communication Systems, since many controls and radio communications at the stations are outdated and have reached the end of their service life.

To address these challenges, staff conducted a comprehensive evaluation of Water Plant #1 in collaboration with the Metropolitan Industries team, focusing on the issues stemming from aging equipment. Due to the interconnected nature of the stations through MetroCloud, the Village's Supervisory Control and Data Acquisition (SCADA) system provided by Metropolitan Industries, it is imperative to upgrade these systems to ensure seamless integration across all stations. The SCADA system monitors and controls water treatment processes by collecting, analyzing, and displaying real-time data, and it is critical for monitoring performance and alarms at all water and sanitary lift stations.

Consideration of the upgrades to the PLC and Communication Systems is dependent upon Board approval of the Water Plant #1 upgrades, which will make it imperative to upgrade all the water

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sites within Phase 1: West Elevated Tank, Central Elevated Tank, East Elevated Tank, Water Plant #2, 183rd Booster Station, and the Flossmoor Meter Vault. (Central Elevated Tank upgrades will be transferable to the new tank after it is constructed without any issues.)

Phase 1 – Upgrades at the water sites

Phase 2 & 3- Upgrades at sanitary lift stations

Phase 4 & 5- Upgrades at stormwater sites

Why Metropolitan Industries?

Metropolitan Industries has been providing professional services to Homewood for over 42 years. They have performed maintenance at all of the Village stations and have the skill set and experience to perform all of the needed updates, ensuring smooth communications with MetroCloud. The station upgrades will consist of removing all existing controllers and radio communications, installing Programmable Logic Controllers (PLCs), and connecting each station to a cellular modem, which will streamline communications to the cloud (added level of security). The levels of security in this day and age are critical, and MetroCloud has been leading in the water industry as a top performer. They have hosted many seminars with the U.S. Department of Homeland Security educating municipalities on ways that they can protect their systems.

Staff is requesting to waive competitive bidding according to the Village's purchasing policy for the following reasons:

- Proprietary Purchase
- Equipment Standardization
- Manufacturer, Repair and Authorized Dealer/Seller
- Technical nature of item makes competition impractical or will negate standardization
- Utilization of a vendor currently under contract or that serves as the Village designated vendor for system maintenance

OUTCOME

Approval of this PLC and Communications Upgrade (Phase 1) will enable Public Works to replace important water assets, streamlining station operations and communications with SCADA. Providing accurate data from each station will increase staff efficiency when performing preventative maintenance or responding to station alarms, ensuring reliable services to our users.

FINANCIAL IMPACT

- **Funding Source:** Water and Sewer Capital
- **Budgeted Amount:** \$120,000

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- **Budget Amendment Request:** \$26,000 (*transfer from Sanitary Sewer Lining project that came in under budget by approximately \$116,000*)
- **Cost:** \$145,461

LEGAL REVIEW

Not Required

RECOMMENDED BOARD ACTION

Approve a budget amendment in the amount of \$26,000; waive competitive bidding for Programmable Logic Controller and Communication Upgrades (Phase 1) due to a proprietary purchase, equipment standardization, manufacturer, repair and authorized dealer/seller, technical nature of item makes competition impractical or will negate standardization, and utilization of a vendor currently under contract or that serves as the Village designated vendor for system maintenance, for Metropolitan Industries of Romeoville, IL in an amount not to exceed \$145,461.

ATTACHMENT(S)

- Quote
- Photo