Legislation Details (With Text)

File #:	2020-0163	**Version:**	0	**Name:**	Programmable Logic Controller (PLC) Modernization - Proposal
Type:	MOTION			**Status:**	PASSED
File created:	2/25/2020			**In control:**	Board of Trustees
On agenda:	5/4/2020			**Final action:**	5/4/2020
Title:	Programmable Logic Controller (PLC) Modernization - Proposal				
Code sections:					
Attachments:	1. Proposal, 2. Contract - Signed				

Date	Ver.	Action By	Action	Result
5/4/2020	0	Board of Trustees		
2/25/2020	0	Public Works Department	INTRODUCED TO BOARD	

Title
Programmable Logic Controller (PLC) Modernization - Proposal

History
The Public Works Department currently manages a water distribution system and sanitary/storm collection systems consisting of twenty-five (25) sites. The sites include one (1) main pumping station, seven (7) water towers, three (3) booster stations, one (1) storm station, and thirteen (13) lift stations.

The Utility Division of Public Works upgraded the water and waste water control infrastructure in 2000 from Printed Circuit Board (PCB) technology to Programmable Logic Controllers (PLC). This system integrates into the Supervisory Control and Data Acquisition (SCADA) system. A PLC is a computer processor that is dedicated to run one program that monitors a series of different inputs and logically manipulates the outputs for the desired control. Currently, the PLCs in the village's system are GE Fanuc and have reached end of life status and are no longer supported by GE.

Concentric Integration of Crystal Lake, Illinois, (Concentric) was selected in 2019 to complete the SCADA upgrade and has been the Village's system integrator for the past fifteen years. Staff requested an assessment from Concentric in order to ensure the reliability and security of the combined SCADA system and PLC components. The assessment was completed in May 2019. The SCADA system was ultimately upgraded soon after to improve security and reliability of the software program and computer hardware. The assessment results indicated the following regarding the aging PLCs:

1. The existing GE PLC that operates the system is not experiencing failures, but has reached end of life status.

2. The existing GE PLCs are not supported By GE, and replacement parts have very limited availability. Public Works has a limited supply of replacement parts on hand.

3. Concentric has recommended replacing the existing GE PLCs with Allen-Bradley PLCs to

coincide with the current PLC platform being installed in the new Motor Control Center. Allen-Bradley PLCs have an “Active” lifecycle status on the product line, where spare parts can be readily ordered and procured, and that utilize the same programming and configuration software.

4. For lift station sites that have separate stand-alone pump controllers, Concentric recommends pump control to be integrated with the SCADA PLC to provide Water Plant Operators more flexible control options.

5. The current telemetry system runs on a Spread Spectrum radio system that was installed with the original PLC installation in 2000. Concentric recommends upgrading to a high bandwidth cellular-based solution.

Due to the complexity of the current SCADA system and the historical relationship Concentric has had with the Village, a proposal for equipment and software upgrades was requested from Concentric. They have an overall understanding of the project with the ability to provide continued support. Their proposal (attached) details the cost of the new equipment, overall project management, PLC hardware upgrade, PLC migration with the server software, Motor Control Center, and Telemetry infrastructure for a total lump sum of $972,000.00.

Financial Impact
Funds are available for this project in the FY2020 Water Fund 031-6001-443200.

Recommended Action/Motion
I move to approve waiving the bid process;

And

Move to approve the proposal from Concentric Integration, of Crystal Lake, Illinois, in the amount of $972,000.00 for the PLC and Telemetry System Modernization Project, and ongoing support.