ITEM #:	**18**
DATE:	**04-09-24**
DEPT:	**W&PC**

COUNCIL ACTION FORM

SUBJECT: **WATER PLANT SCADA, NETWORKING, ACCESS CONTROL, AND SURVEILLANCE UPDATES**

BACKGROUND:

The Water Treatment Plant operators utilize a complex Supervisory Control and Data Acquisition (SCADA) system to assist in the operation of the wells, treatment plant, pump stations, and elevated tanks in the distribution system. This system includes multiple human-machine interface (HMI) stations, multiple servers, an auto-dialer for critical alarms, firewalls/virtual private networks (VPN) for cybersecurity, and miscellaneous network switches and control devices. The components currently in place were installed in 2017 when the plant was brought online. To continue maintaining the system at a high level of performance, a major hardware and software update is required.

In addition to the SCADA system, the Water Plant also has two physical security systems: an access control system and a video surveillance system. Both the software that runs the access control system and door controllers are obsolete and are no longer supported. The existing door controllers would require modifications to be able to work with the new software. The proposed work will replace the software and (50) door controllers, reconfigure the access control network, and add a new "lockdown" feature that will immediately place every door into a "secure state" from a single push button. The work will also isolate the access control and security camera systems onto their own network, eliminating problems with excessive bandwidth traffic on the network.

Staff is recommending that a "single source" award be made to Automatic Systems Company, in accordance with the City's adopted Purchasing Policies and Procedures. Automatic Systems was the original installer of the SCADA and security systems. Reasons for this approach include the following:

- Every company that provides system integration has its own style and philosophy when programming control systems. Having multiple programming approaches within a single system can result in unexpected performance, and an increasingly complicated system that makes troubleshooting more difficult.

- If a different programming company were to work on the system, they would require considerable time to "catch up" with how the system is designed, putting them at a cost disadvantage compared to programmers that are familiar with the system.

- If the work was to be competitively bid, staff would need to hire a consulting engineer to prepare plans and specifications, further increasing the cost of the work.

For continuity, staff believes that staying with the original system integrator for this update is important and justified.

Staff has spent the past several months working with Automatic Systems to ensure that the scope of work being quoted matches the City's needs. Some of the items included in the contract could be

purchased from multiple suppliers, such as the computer workstations, servers, and monitors. The bulk of the work, however, involves installing the servers and configuring the data and reporting applications.

The single source negotiation has been completed with the assistance of the City's Purchasing Division to ensure that the work description is thorough and complete. Because the majority of the work is to replace and upgrade the existing hardware and software systems and to separate the SCADA network from the access control and camera systems, the Purchasing Division has determined that the work does not constitute the type of "construction" that would require competitive bids under state law.

The project budget is shown below:

	Expense	Funding
Automatic Systems Proposal		
SCADA Upgrade	$ 191,797	
Fiber Upgrade	11,070	
Access Control/Network Upgrade	143,266	
Licensing for Access Control Software (3 years)	3,800	
Authorized CIP		
3920 - SCADA/Computer Upgrades		$ 309,301
3970 - Keypad Terminations		50,000
3972 - Access Control		128,096
3974 - Security Cameras		68,002
Totals	**$ 349,933**	**$ 555,399**

The funding shown above is available in the current fiscal year's amended budget. The long-range capital plan used when preparing the Water Fund rate projections includes an expense scheduled every five years for regular SCADA system hardware updates. The FY 2024-2029 Capital Improvement Plan presented to Council in January 2024 includes $221,000 in FY 2028/29 for the next round of SCADA updates.

ALTERNATIVES:

1. Award a single source contract to Automatic Systems Company of Ames, Iowa for Water Plant SCADA, Networking, Access Control, And Surveillance Updates in the amount of $349,933.

2. Do not award a contract to Automatic Systems Company and direct staff to undergo a formal bid process.

3. Take no action at this time. **This will result in continued use of outdated software and hardware in the plant control system that cannot be adequately patched or upgraded with security updates. It will also continue the use of a security system network configuration that is overloaded, and access control devices that are no longer supported and cannot be replaced with newer hardware.**

CITY MANAGER'S RECOMMENDED ACTION:

Regular hardware and software updates are required to maintain the Water Plant control system's performance and security. The Capital Improvements Plan anticipates these updates to occur roughly every five years. Because there is functional overlap between the SCADA system and the security systems, it is reasonable to combine the updates needed into a single contract. Staff has negotiated with the original system integrator that installed the control and security systems when the treatment plant was constructed. The Purchasing Division agrees that a negotiated single source award is appropriate and is consistent with the City's Purchasing Policies and Procedures. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative #1 as described above.