



**BUSINESS OF THE CITY COUNCIL
CITY OF MERCER ISLAND**

**AB 6190
January 3, 2023
Consent Agenda**

AGENDA BILL INFORMATION

TITLE:	AB 6190: SCADA Sewer Equipment Replacement Project Bid Award	<input type="checkbox"/> Discussion Only <input checked="" type="checkbox"/> Action Needed: <input checked="" type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
RECOMMENDED ACTION:	Award the SCADA Sewer Equipment Replacement project to Valley Electric Company of Mt. Vernon and appropriate \$1,533,625 from the Sewer Fund balance for the additional cost to complete project implementation.	

DEPARTMENT:	Public Works
STAFF:	Jason Kintner, Chief of Operations/Public Works Director Alaine Sommargren, Deputy Public Works Director Allen Hunter, Utilities Operations Manager
COUNCIL LIAISON:	Lisa Anderl
EXHIBITS:	1. Map of SCADA Sewer Sites
CITY COUNCIL PRIORITY:	3. Make once-in-a-generation investments to update and modernize aging infrastructure, capital facilities, and parks.

AMOUNT OF EXPENDITURE	\$ 3,533,625
AMOUNT BUDGETED	\$ 2,000,000
APPROPRIATION REQUIRED	\$ 1,533,625

EXECUTIVE SUMMARY

The purpose of this agenda bill is to award the construction contract for the sewer Supervisory Control and Data Acquisition (“SCADA”) project and request an appropriation of \$1,533,625 from the Sewer Fund balance to supplement the project’s approved 2023-2024 budget.

- The City's sewer and water utilities are monitored and controlled remotely by two separate systems:
 - Supervisory Control and Data Acquisition (SCADA) for water; and
 - Telemetry for sewer; collectively referred to as SCADA.
- The City relies on the SCADA system for control and alarm notifications; it is important that this system operate with the highest reliability to protect the environment while providing safe and reliable drinking water and community sewer services.
- Due to the age and condition of the water and sewer systems, the City’s current technology needs to be replaced to ensure the systems are reliable and are able to meet the City’s needs.
- The City recently completed construction of the SCADA system within the water distribution system and is now ready to construct the system for the sewer conveyance system.

- Upgrades to the sewer SCADA system are complex and required additional design, engineering, and construction work. Project costs have increased beyond the approved budget for the construction phase.

This agenda bill provides an overview of the SCADA project, the design process, upgrades to the sewer system, information about the bid results, staff's recommendation for awarding the construction bid, and an appropriation request to complete the project.

BACKGROUND

In 2017, the City learned that critical components of its SCADA system were reaching the end of their useful life. Frequent alarms, fragmented SCADA components, and loss of reliability within the system prompted an internal evaluation and planning process for replacement.

The City hired Brown and Caldwell, an engineering firm specializing in SCADA system planning for sewer and water utilities, to design a new SCADA system. These planning efforts established the framework for expanding and upgrading the entire SCADA system and platform. This new platform will provide a consistent, fully integrated, secure monitoring system for sewer and water distribution that improves reliability and operations.

Design and programming work for the SCADA system replacement began in March 2019, with the original intent to bid the water and sewer platforms as one construction package. However, during the design process, it became apparent that the sewer SCADA replacement was more complex, largely due to fire code and specific land use permitting requirements. The NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities was established to mitigate fire and explosion hazards specific to those facilities.

In 2020, Carollo Engineering Inc. was hired to assess the Island's 17 sewer pump station sites for compliance with the NFPA 820 Standard and provide a report documenting the findings and recommended improvements for each pump station. These recommendations were incorporated into the design. In addition, due to the location of the sewer pump stations adjacent to the Lake Washington shoreline, each site requires a Shoreline Exemption permit and a review of applicable easements.

Due to these additional requirements associated with the sewer utility, staff moved ahead with the construction of the SCADA project for the Water Utility in January 2022, while continuing design on the sewer portion of the project. The construction of the water SCADA project was completed in December 2022.

Design for the Sewer SCADA project is complete, and the project was advertised for construction bids on September 26, 2022.

ISSUE/DISCUSSION

PROJECT DESCRIPTION

This project will replace the existing SCADA equipment at 17 sewer pump station sites along the shore of Lake Washington (see Exhibit 1). The scope of work consists of replacing the following at each pump station: the Programmable Logic Controller (PLC) panels, hardware, operational equipment, motor controls, fire code related improvements, and other improvements to fully incorporate the SCADA system.

Upon completion of the construction, field testing and commissioning of the new control system equipment will be performed, and staff will be trained on its operation.

BID RESULTS AND AWARD RECOMMENDATION

Four construction bids were received and opened on Thursday, November 3, 2022. The lowest bid was received from Valley Electric Co. of Mt. Vernon (Valley Electric) for \$2,446,883.

TABLE 1: BID RESULTS	
COMPANY	TOTAL BID
Valley Electric Co. of Mt. Vernon	\$2,446,883
Northeast Electric, LLC	\$2,946,276
Source Electric, LLC	\$3,049,770
Burke Electric, LLC	\$3,620,691
Engineer's Estimate (range)	\$2,168,000 - \$3,060,000

Valley Electric has worked on several local SCADA projects, including the Port Townsend Water Treatment Facility & Reservoir and the King County South Plant Wastewater Treatment Facility. A review of the Labor and Industries (L&I) website confirms that Valley Electric is a contractor in good standing, with no license violations, outstanding lawsuits, or L&I debt. Based on staff's review of the bid submittals and reference checks, Valley Electric is the lowest responsive and responsible bidder for the project.

PROJECT BUDGET

The total estimated project cost exceeds the 2023-2024 budget (Table 2). Factors that increased cost include higher material and labor costs, an expansion of the scope of work required for each pump station, additional project management and support needs, and a comprehensive analysis of easements and property ownership for each location.

Brown and Caldwell will provide construction management, engineering and permitting support, as well as software configuration services. Tasks include preparation of Shoreline Exemption permit packages and Critical Area Technical Memos for each of the 17 pump stations and generator sites. Software configuration services will integrate the City's selected alarm notification software with the control program for the sewer SCADA system.

As of December 2021, the unassigned balance in the Sewer Fund was \$5.02 million. Staff will provide the City Council with updated Fund balances as part of the 2022 year-end Financial Status Update in Q2 2023.

TABLE 2: SEWER SCADA PROJECT BUDGET	
DESCRIPTION	TOTAL
Construction Contract	\$ 2,446,883
Construction Contingency (20%)	\$ 489,377
Construction Management (Consultant)	\$ 224,500
Contract Administration	\$ 73,406
Permitting & Software Configuration	\$ 219,703
Permit Materials & Application Fees	\$ 34,656
Technology – Hardware & Software	\$ 45,100
TOTAL PROJECT COST	3,533,625
Approved 2023-2024 Budget	\$ 2,000,000
BUDGET APPROPRIATION NEEDED	\$ 1,533,625

NEXT STEPS

Current lead times for procuring the main system components are between 36 and 44 weeks. During this extended procurement period, staff will work with Brown and Caldwell to finalize all required permits, so the contractor is able to begin work upon receipt of needed materials.

Staff will manage operations of each station during the transition to the new SCADA system and will complete the installation of necessary communication equipment. Valley Electric and their subcontractors may elect to pre-install equipment cabinets and prepare electrical infrastructure during this period. Given the procurement delays, completion of this construction project is anticipated by Q4 2024.

RECOMMENDED ACTION

1. Award the Sewer SCADA equipment replacement project to Valley Electrical Co. of Mt. Vernon in the amount of \$2,446,883 and authorize the City Manager to execute a contract with Valley Electric Co. of Mt. Vernon for the construction of the Sewer SCADA Equipment Replacement project.
2. Authorize \$1,533,625 appropriation from the Sewer Fund balance for the additional cost above the 2023-2024 budget of \$2,000,000.