

**COMMISSION FILE NO:** 16-112-9 **DATE INTRODUCED:** September 12, 2016

**INTRODUCED BY:** Executive Director (Signature on File in the Office of the Commission)

**REFERRED BY COMMISSION CHAIRPERSON TO:** Operations Committee

**RELATING TO:** Modification Number 2, Contract K01012C01, Conveyance Supervisory Control and Data Acquisition Communication Towers Project, and Restore the Executive Director's Original Delegated Authority

**SUMMARY:**

The Commission is requested to authorize the Executive Director to execute Modification Number 2 to Contract K01012C01, Conveyance Supervisory Control and Data Acquisition (SCADA) Communication Towers Project, with Pieper Electric, Inc., (Pieper) in an amount not to exceed \$35,000 and to restore the Executive Director's authority for approving future modifications.

The District has a SCADA system that allows operators to control and receive real time information concerning the status of the conveyance system. The SCADA system communicates with approximately 320 remote sites throughout the District's service area and transmits data to a control center at the Jones Island Water Reclamation Facility (JIWRF). Remote sites include flow monitoring manholes, Inline Storage System shafts, diversion structures, pump stations, and weather stations. The types of information transmitted include wastewater flow, level, equipment operational status, rainfall, communication status, and site security. The SCADA system continuously monitors the conveyance system and is relied upon by both District and Veolia Water Milwaukee staff to make operational decisions during wet weather events. SCADA system operation is critical to properly operate the conveyance system and to reduce the risk of overflows and basement backups.

**ATTACHMENTS:** **BACKGROUND** ☐ **KEY ISSUES** ☐ **RESOLUTION** ☒  
**FISCAL NOTE** ☒ **S/W/MBE** ☐ **OTHER** ☐ \_\_\_\_\_

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**COMMITTEE ACTION:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**COMMISSION ACTION:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

## **SUMMARY (Cont'd)**

### **Modification Number 2, Contract K01012C01, Conveyance Supervisory Control and Data Acquisition Communication Towers Project and Restore the Executive Director's Original Delegated Authority**

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The existing Conveyance SCADA system is nearly 15 years old. Existing radio-based communication equipment is either no longer supported or will not be supported in the near future by the suppliers. The existing system utilizes highly specialized hardware and software only able to be maintained and modified by a very limited pool of programmers. Advances in data transmission have improved, resulting in the ability to obtain systems with open architecture, widely understood and recognized operating protocols, and higher degrees of security.

The new Conveyance SCADA system includes a microwave-based system with core sites that create a microwave transmission ring in proximity of the District's critical sites with this system centralized at JIWRP. Each core site will also have 931-megahertz (MHz) radios to communicate information to and from the remote sites in the area of the core sites. Each core site typically serves from 10 to 30 remote sites. Data from each remote site thus goes to its respective 931-MHz radio, then back to the microwave-based transmission ring, and ultimately back to the JIWRP Central Control Building. The microwave ring-based system will communicate with approximately 130 remote sites, including all 48 of the District's most critical remote sites.

Contract K01012C01 is one of multiple engineering, equipment procurement, and construction contracts necessary to develop and implement the new SCADA system.

In March 2016, the Commission awarded Contract K01012C01 to Pieper. The scope of the contract includes constructing a new communication tower at each of following locations:

- CT01 Site – County Grounds, located in the City of Wauwatosa
- KK01 Site – S. 6<sup>th</sup> Street and W. Cleveland Avenue, located in the City of Milwaukee
- Former Bee Bus Line Site – 4300 block of 35<sup>th</sup> Street, located in the City of Milwaukee

During an intense rain event in July 2016, stormwater runoff caused significant erosion around the base of the Site CT01 Tower, which is currently under construction. Engineering analysis has determined that the erosion was caused by stormwater running off the paved area north of the tower and around the tower site. In addition, there is an undersized existing 12-inch diameter driveway crossing culvert just south of the tower site. Left unchecked, the stormwater flows will erode the stone and soil adjacent to the tower, resulting in the need to repeatedly replace it.

### **SUMMARY (Cont'd)**

Modification Number 2, Contract K01012C01, Conveyance Supervisory Control and Data Acquisition Communication Towers Project and Restore the Executive Director's Original Delegated Authority

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Contract Modification Number 2 consists of site grading and installation of a larger culvert to address this erosion/drainage issue at the Site CT-01 tower. The estimated additional cost is not to exceed \$35,000.

There is no change in the construction duration for this contract due to this modification. The estimated completion date remains October 27, 2016.

Summary of Contract Cost Changes:

<b>Contact</b>	<b>Amount</b>	<b>Percentage Increase</b>	<b>Authorized By</b>
Original	\$ 527,500	-	Commission
Modification No. 1	\$ 37,500	7.1%	Executive Director
Modification No. 2	\$ 35,000	6.6%	Requested of the Commission
Total Modification Items	\$ 72,500	13.7%	
Total Contract	\$ 600,000		

The Commission has delegated to the Executive Director the authority to make changes to construction contracts up to \$400,000 or 10 percent of the original contract price, whichever is less. For this contract, the 10 percent limit of \$52,750 prevails. To date, the Executive Director has \$15,250 remaining of this authority.

The request to restore the Executive Director's authority is based on possible future modifications that exceed the remaining authority. There is reasonable risk that this could occur, as construction of the communication towers is not complete. If issues arise that necessitate additional contract modifications, the contractor could have to stop work while staff requests the necessary authority from the Commission. This could result in contractor claims and additional costs to the District.

## **RESOLUTION**

Modification Number 2, Contract K01012C01, Conveyance Supervisory Control and Data Acquisition Communication Towers Project and Restore the Executive Director's Original Delegated Authority

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**RESOLVED**, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director is authorized to execute Modification Number 2 to Contract K01012C01, Conveyance Supervisory Control and Data Acquisition Communication Towers Project, with Pieper Electric, Inc., in an amount not to exceed \$35,000, and that Executive Director's original delegated authority is restored.