



## STAFF REPORT

**To:** Honorable Mayor and Members of Town Council

**Through:** David L. Corliss, Town Manager

**From:** Mark Marlowe, P.E., Director of Castle Rock Water  
Shawn Griffith, Assistant Director of Operations  
Nicolas Van Kooten, SCADA Supervisor

**Title:** **Resolution Approving an Equipment and Services Acquisition Agreement with Logical Systems, LLC for Phase IV of the Supervisory Control and Data Acquisition (SCADA) Master Plan Implementation Project** *[Entire Castle Rock Water Service Area]*

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### Executive Summary

Castle Rock Water (CRW) seeks Town Council approval of a Resolution (**Attachment A**) approving a services agreement with Logical Systems, LLC (LSI), for the CRW Supervisory Control and Data Acquisition (SCADA) Master Plan Phase IV Project. This capital improvement was identified through the SCADA Master Plan (MP), adopted in December 2019 by Council Resolution No. 2019-131. The cost for this work is \$4,475,720 plus a 10% Town managed contingency of \$447,572, for a total authorization request of \$4,923,292.

Through a competitive request for proposal (RFP) process, bids were received on July 18, 2024, and LSI was selected by CRW staff as the recommended contractor to complete these proposed system upgrades. The existing system is antiquated and has components that have been in service for up to 30 years. The scope of work for this project shall include, but not be limited to, the replacement of hardware, wiring, and software for SCADA control systems at the Miller Water Treatment Plant (WTP), and various wells and other remote sites. This project will bring these systems into compliance with modern cybersecurity and equipment standards and improve operator efficiencies, as recommended by our 2019 SCADA Master Plan.

Once awarded, it will take approximately 19 months to fully implement. The timing of the work will have to be fit into CRW's operations by requiring the majority of the work to be completed during the low-demand seasons. Given these constraints, the goal is to complete this project by April 2026.

## **Discussion Notification and Outreach Efforts**

This project is security-sensitive, and no public outreach is planned. Work will be performed at remote CRW sites and will be done out of the public eye.

## **History of Past Town Council, Boards & Commissions, or Other Discussions**

Castle Rock Water Commission was provided with a presentation on the SCADA Master Plan on December 11, 2019, and voted to recommend Council approval. Town Council adopted the 2019 SCADA Master Plan Update on December 17, 2019.

Castle Rock Water staff presented this item to the Castle Rock Water Commission at their meeting held on August 28, 2024, and the Castle Rock Water Commission voted unanimously 7 to 0 to recommend Town Council approval of the Resolution as presented.

## **Discussion**

In May of 2024, Burns & McDonnell Engineering, Inc. (BMcD) created the RFP for the SCADA Master Plan Phase IV. The RFP process was updated for Phase IV over the process used in the first three phases, to create a complete and more consistent RFP, resulting in better contractor pricing, improved schedules, and a smoother overall project. The RFP updates were necessary to properly detail the required elements of the project and meet budget and schedule goals. The new RFP process contained the proper steps, equipment, software, and programming protocols necessary to ensure accurate estimates and proper project implementation details.

CRW uses SCADA to monitor and control all processes in the water treatment plants and their remote sites. This current project will upgrade hardware and software in the Miller WTP and associated remote sites listed below:

### Phase IV Remote Facility List:

- Citadel Pump Station
- Hillside Pump Station
- Plum Creek Pump Station
- Castlewood 1 Lift Station
- Castlewood 2 Lift Station
- Maher Lift Station
- Mitchell Creek Lift Station
- Sellers Lift Station
- Black Feather PRV
- Briscoe PRV
- Scott PRV
- Valley PRV
- BM1A\_D Well
- W7 Well
- RT6ABC Well
- RT14 Well
- BM2 Well
- Red Hawk Pond
- Meadows Flume
- North Flume
- Main Flume
- Meadows Grinder

The SCADA system is separate and segregated from other Town computer networks and is a stand-alone system by which many CRW assets are controlled remotely. This project will replace the hardware and wiring for the existing control systems at these sites. The contractor will also be required to test all of the installed hardware, instrumentation, and wiring. Due to supply chain issues CRW has purchased and will be providing additional hardware, such as Programmable Logic Controllers (PLCs), power supplies, input and output (I/O) cards, racks, human-machine interfaces (HMIs) and network switches, for the contractor to install.

A more robust operational system will address deficiencies within the existing systems and bring the systems into compliance with modern cybersecurity and equipment safety standards. It also will reduce network failure risk due to aging equipment, reduce costs of support by utilizing current, non-obsolete hardware and software, improve operator efficiency by standardizing equipment and procedures, and properly manage risk and resilience associated with process automation.

In June of 2024, CRW advertised a request for qualifications (RFQ) for contractors using BidNet (an online platform that advertises information such as government RFQs). Six firms responded by submitting Statements of Qualifications. The contractor submittals were reviewed by CRW staff and four contractors were shortlisted. The RFP was then issued to the shortlisted group of contractors and a mandatory project site visit was completed by staff with contractors and BMcD. The following table includes the contractors who received the RFP for this project and their proposal cost or if they were non-responsive.

<b>Contractor</b>	<b>Total Cost</b>
Logical Systems, Inc.	\$4,290,890
Prime	Declined to bid
Techneaux	\$4,826,905
Tetra Tech	Declined to bid

LSI was selected based on the qualifications that were submitted, the completeness of fulfilling the scope of work, and the project costs that were submitted.

LSI will be required to perform testing on all installed hardware and wiring, to ensure that all locations can communicate and operate properly. The contractor will also need to research, prepare, and submit to the appropriate agency any necessary permits for project completion. All work will be completed within an approximate 19-month period beginning in October 2024 and concluding in April 2026.

CRW has completed the first three phases of the SCADA Master Plan:

- Phase I: OWL Data Diode Security with SCADA System Segregation
- Phase II: SCADA Backhaul & Radio Network Communications Ring
- Phase III: Founders Water Treatment Plant & Remote Sites SCADA Upgrade

Three phases remaining for completion of the SCADA Master Plan:

- Phase IV of the Master Plan for the Miller Water Treatment Plant & Remote Sites Upgrade -Scheduled to be completed in Spring of 2026, pending Town Council approval

- Phase V: Ray Waterman Regional Water Treatment Facility & Remote Sites SCADA Upgrade -The RFP is scheduled to be completed in the first quarter of 2025, with construction to be finished by the Spring of 2028.
- Phase VI: Meadows Water Treatment Plant & Remotes Sites SCADA Upgrade -The final phase of the Master Plan is anticipated to be completed by the Spring of 2029.

#### SCADA Master Plan Project Expenditures

- Spending to date (2021-2024): \$5,580,482
- Remainder 2024-2029: \$13,475,292 (includes the Phase IV project)
- Completed SCADA Master Plan implementation anticipated in 2029 with a total cost of \$19,055,774

The total Master Plan upgrade expenditures of \$10,503,774, scheduled or completed to date, are shown in the chart below:

Project	PO	Vendor	Year	Amount
OWL Data Diode	2171	Rexel	2021	\$46,856
SCADA Backhaul & Radio Network Implementation	2252	Techneaux	2022	\$1,801,157
PLC Hardware for OT Upgrades	2305	Rexel	2021	\$91,066
Starwind Software for OT Server Upgrades	n/a	Starwind	2021	\$14,000
PCWPF PLC Replacements	n/a	Rexel	2021	\$19,573
Founders WTP & Remote Sites OT Equipment Upgrades	2352	Rexel	2022	\$32,905
Founders WTP & Remote Sites PLC Upgrades	2369	Rexel	2022	\$51,092
Founders WTP & Remote Sites Display Upgrades	2388	Rexel	2022	\$72,912
Dell SCADA Clients for PlantPAX	n/a	One Technology	2023	\$21,192
Founders WTP & Remotes Sites Upgrade	2474	Techneaux	2023	\$1,954,052
Founders Remote Tanks and Pump Station PLC Equipment	2595	Rexel	2023	\$78,568
Meadows WTP Remote Sites PLC Upgrade	2579	Rexel	2023	\$77,737
Founders WTP & Remote Sites PLC Upgrades	2602	Rexel	2023	\$61,838
OWL Data Diode Package	2666	Rexel	2023	\$136,523
Miller & Remotes Sites Design Project	2683	Techneaux	2023	\$180,000
P&ID Project	2737	Tetra Tech	2023	\$61,032
IP Address Update Project	2765	Tetra Tech	2023	\$29,338
SCADA Master Plan Phase IV	2787	Tetra Tech	2024	\$90,744
Screen Development	2797	LSI	2024	\$302,800
Miller WTP PLC Equipment	2805	Rexel	2024	\$124,750
O&M Building PLC Equipment	2833	Rexel	2024	\$46,327
OWL Data Diode Renewal & Historian	2843	Rexel	2024	\$31,704
Remote Sites Screen Development	2854	LSI	2024	\$102,630
RFP for SCADA Master Plan	2860	Burns & McDonnell	2024	\$79,236
Founders Emergency Programming & Commissioning	2907	Techneaux	2024	\$72,450
Phase IV- Miller WTP & Remote Sites Upgrade	pending	LSI	2024	\$4,923,292
		<b>Total Expenses</b>		<b>\$10,503,774</b>

**Budget Impact**

The funding for the SCADA Master Plan Phase IV implementation was budgeted in 2024. These funds will be taken from the Water, Water Resources, and Wastewater SCADA System Improvement accounts, as follows:

<b>Fund Name</b>	<b>Account Number</b>	<b>Cost</b>	<b>10% Contingency</b>	<b>Total Cost</b>	<b>Split</b>	<b>2024 Balance</b>
Water SCADA System Improvements	210-4275-442.75-41	\$2,145,445	\$214,545	\$2,461,646	50%	\$2,461,646
Water Resources SCADA System Improvements	211-4375-443.75-41	\$1,072,722	\$107,272	\$1,230,823	25%	\$1,230,823
Wastewater SCADA System Improvements	213-4575-445.75-41	\$1,072,723	\$107,272	\$1,230,823	25%	\$1,230,823
Totals		\$4,290,890	\$429,089	\$4,923,292		\$4,923,292
<b>Total Authorization Request</b>				<b>\$4,923,292</b>		

**Staff Recommendation**

Staff recommends Town Council approval of a Resolution approving an equipment and services acquisition agreement with LSI for Phase IV of the SCADA Master Plan Implementation Project in the amount of \$4,475,720 plus a 10% Town managed contingency of \$447,572, for a total authorization request of \$4,923,292.

**Proposed Motion**

*“I move to approve the Resolution as introduced by title.”*

**Alternative Motions**

*“I move to approve the resolution as introduced by title, with the following conditions: (list conditions).”*

*“I move to continue this item to the Town Council meeting on \_\_\_\_\_ date to allow additional time to (list information needed).”*

**Attachments**

Attachment A: Resolution  
Exhibit 1: Agreement