



Legislation Text

File #: 2019-181, Version: 1

Proposed Amendment No. 1

GLWA-CS-1771

Professional Engineering Services for the Condition Assessment, Design of Filter and Flow Instrumentation and Controls Improvements at the Lake Huron Treatment Plant

Agenda of: May 22, 2019
Item No.: **2019-181**
Amount: Original Contract \$ 998,175.46
Amendment No. 1 \$674,654.00
Total Revised Contract \$1,672,829.46

TO: The Honorable
Board of Directors
Great Lakes Water Authority

FROM: Sue F. McCormick
Chief Executive Officer
Great Lakes Water Authority

DATE: May 1, 2019

RE: **Proposed Amendment No. 1**

Contract No. GLWA-CS-1771

Professional Engineering Services for the Condition Assessment, Design of Filter and Flow Instrumentation and Controls Improvements at the Lake Huron Treatment Plant

Vendor: Tetra Tech of Michigan, PC

MOTION

Upon recommendation of Cheryl Porter, Chief Operating Officer - Water and Field Services, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), authorizes the Chief Executive Officer (CEO) to **enter into Contract No. GLWA-CS-1771, Amendment No. 1 "Professional Engineering Services for the Condition Assessment, Design of Filter and Flow Instrumentation and Controls Improvements at the Lake Huron Treatment Plant" with Tetra Tech of Michigan, PC, at an increased cost of \$674,654.00 for a total not to exceed amount of \$1,672,829.46, and an increased duration of 48 months for a total contract duration of 84 months;** and authorizes the CEO to take such

other action as may be necessary to accomplish the intent of this vote.

BACKGROUND

GLWA Contract No. CS-1771 is a professional engineering services contract involving the design, construction administration and Resident Project Representation (RPR) services for improvements to the Lake Huron Water Treatment Plant's (LHWTP) instrumentation and control systems. Contract CS-1771 was awarded to Tetra Tech of Michigan, PC on December 6, 2016 and the notice to proceed established the start date as December 19, 2016. The contract is currently set to end on December 19, 2019.

The engineering scope of services under CS-1771 includes designing and administering the following capital improvements at LHWTP:

- Replace and upgrade the majority of plant instrumentation and communications equipment
- Install bypass to high-lift header with new isolation valve on north header and replace the plant's finished water production flow meter
- Replace controls, water hydraulic system, panels, electric solenoid valves, manifolds, and appurtenances that service all plant filter control valves
- Install new doppler-style raw water flow meter and rehabilitate the existing differential pressure flow meter for backup recording

The purpose of this Amendment is to align the final design documents for CS-1771 to the process control standards (SCADA Governance Document) developed under Contract No. GLWA-CS-108 "Professional Engineering Services for Automation Needs Assessment of Water Treatment Plants", increase RPR coverage from 20% to 100%, delete scope that will be included in another CIP project, and add sufficient time to this contract to coincide with the associated construction contract. The additional costs associated with this requested amendment are summarized in the following table:

Description	Additional Cost
Drawing Revisions	\$ 133,192.00
Specifications Revisions	114,276.00
Additional RPR Coverage	<u>427,186.00</u>
Total	\$ 674,654.00

The final design documents for CS-1771 were received on December 28, 2018 and were designed around Rockwell PLC-centered infrastructure. This design was provided in accordance with the scope of the request for proposals and contract.

After CS-1771 was underway, GLWA entered into Contract No. GLWA-CS-108 with Arcadis U.S., LLC, which is a professional engineering services contract to assess the automation needs of GLWA's water treatment plants. The GLWA-CS-108 needs assessment was finalized on July 20, 2018. As part of the GLWA-CS-108 recommendations, GLWA has decided to use Emerson's Ovation as its central means for water treatment plant process control, networking, security, and data archival. The design drawings and specifications for CS-1771 need to be revised to incorporate the recommendations of GLWA-CS-108, which is an additional scope of work to this CS-1771 contract.

The bypass and flowmeter work will be removed from CS-1771 so that it can be included in another CIP project (CIP # 111009) that is installing new, smaller high-lift pumps and the plant's water production flow meter. The new high-lift

pumps are needed to run the LHWTP at lower flow rates that will allow the bypass to be used while the new water production flow meter is being installed. This approach allows CS-1771 to be an electrical and instrumentation job only and removes coordination with the new high-lift pumps and the associated bypass. Note that the CS-1771 final design documents for the bypass and flow meter will be used to procure the new CIP project (i.e. CIP # 111009).

The RPR coverage was specified in the CS-1771 RFP as 1,000 hours of periodic coverage over 30 months of construction (equivalent to approximately 20% coverage). This requested amendment expands the RPR services to provide full-time coverage over the same construction period. Note that this amendment also adds 6 months to the construction phase for closeout and that this additional time does not require RPR services.

The CS-1771 contract was executed with a duration of 36 months. This proposed Amendment No. 1 requests that the contract time for CS-1771 be increased by 48 months for a revised contract end date of December 19, 2023. The following summary table is provided to show the additional time and budget requested under this proposed Amendment No. 1 by task.

Contract Phase	Current Contract Duration (months)	RFP Specified Duration (months)	Requested Contract Duration (months)	Additional Cost
Condition Assessment	-	3	9	\$0.00
Preliminary Design Phase	-	3	6	\$0.00
Final Design Phase	-	9	9	\$0.00
Negotiation and Amendment				
Approval	-	-	6	\$0.00
Redesign	-	-	6	\$247,468.00
Bid and Negotiation Phase	-	3	6	\$0.00
Construction	-	30	30	\$427,186.00
Construction Closeout	-	-	6	\$0.00
O&M Manual Updating,				
SOPs & Training	-	6	6	\$0.00
Overall	36	54	84	\$674,654.00

JUSTIFICATION

The justification for this proposed Amendment No. 1 is provided below:

Item 1 - Modify Design Package to Align with Recommendations from GLWA-CS-108:

Incorporating the control system revisions that will be consistent with the recommendations of GLWA Contract CS-108 using the CS-1771 consultant is the most efficient way to implement the capital

improvements designed under CS-1771.

Item 2 - Provide full time RPR services:

The RPR coverage was specified in the RFP as 1,000 hours for periodic coverage over 30 months of construction (approximately 20% coverage). Full-time RPR coverage is GLWA's recommendation based on previous lessons learned and project complexity. The consultant's hourly rate is competitive with recent contracts and the staff assigned has the proper experience.

Item 3 - Extend contract time:

The contract time for CS-1771 should be increased to allow the professional engineering services to extend beyond the construction contract end date. Tetra Tech of Michigan, PC did not request any additional costs related to extending the contract duration. Added costs are only related to the control system redesign work and expanding the RPR coverage from periodic to full-time coverage.

PROJECT MANAGEMENT STATUS

Original Contract Time	36 months
Amendment No. 1	48 months
New Contract Time	84 months

PROJECT ESTIMATE

Original Contract Price	\$ 998,175.46
Amendment No. 1	\$ 674,654.00
New Contract Total	\$ 1,672,829.46

FINANCIAL PLAN IMPACT

Summary: Sufficient funds are provided in the financial plan for this project.

Funding Source: Water Construction Bond

Cost Center: Water Engineering

Expense Type: Construction (5519-882111.000-616900-114003)

Estimated Cost by Year and Related Estimating Variance: See table below.

Fiscal Year

Prior Plan Years	\$ 780,175.46
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FY 2019 Plan	25,000.00
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FY 2020 Plan	55,000.00
FY 2021 Plan	55,000.00
FY 2022 Plan	<u>83,000.00</u>
Financial Plan Estimate	\$ 998,175.46
Proposed Contract Award	
inclusive of proposed Amendment	<u>1,672,829.46</u>
Negative Estimating Variance	\$ (674,654.00)

This negative estimating variance to be funded from capital reserves.

COMMITTEE REVIEW

This item was presented to the Operations and Resources Committee at its meeting on May 8, 2019. The Operations and Resources Committee unanimously recommended that the GLWA Board adopt the resolution as presented.

SHARED SERVICES IMPACT

This item does not impact the shared services agreement between GLWA and DWSD.