



Legislation Text

File #: 2018-1044, Version: 1

GLWA-CON-252

Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Improvements

Agenda of: December 12, 2018

Item No.: **2018-1044**

Amount: \$23,601,341.70

TO: The Honorable
Board of Directors
Great Lakes Water Authority

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

DATE: December 5, 2018

RE: **Contract No. GLWA-CON-252**
Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Improvements
Vendor: Clark Construction Company

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-CON-252 "Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Improvements" with Clark Construction Company, at a cost not to exceed \$23,601,341.70 for a duration of 42 months;** and authorizes the CEO to take such other action as may be necessary to accomplish the intent of this vote.

BACKGROUND

The steam, condensate return, compressed air, and natural gas piping systems at the Springwells Water Treatment Plant (SPW WTP) are original to the plant and beyond their useful service life, requiring replacement to ensure overall reliability of the plant.

The process, administration and process support buildings at the SPW WTP are heated using steam for freeze

prevention and occupant comfort. The steam and condensate lines run throughout the site and most piping was installed earlier than 1960, except where Project DWSD-SP-563 replaced steam and condensate systems in the Administrative Building, 1958 Filter Building, and Rapid Mix Building. GLWA-CON-252 replaces the remaining steam and condensate systems throughout the rest of the facility with a quantity of steam and condensate return piping totaling approximately 33,000 linear feet.

Compressed air is used for low-lift pump operation to prevent cavitation and throughout the facility for service air. The compressed air piping runs throughout the facility with most piping installed before 1960, except where Project DWSD-SP-563 replaced air equipment in the 1958 Service Building and Power House Building, as well as portions of air lines in the 1930 Filter Building, 1958 Filter Building, and Rapid Mix Building. GLWA-CON-252 replaces most of the remaining air lines with a quantity totaling approximately 10,000 linear feet.

Natural gas is primarily used for generating steam and minor usage as supplemental radiant heat. The natural gas lines run through portions of the plant and are beyond their useful life, except where Project DWSD-SP-563 installed new portions of the natural gas systems. GLWA-CON-252 replaces most of the remaining natural gas lines with a quantity totaling approximately 1,000 linear feet.

Also, the electrical room in the Chemical Building stores batteries that have had a high rate of failure due to excessive heat since the room is not cooled. GLWA-CON-252 installs a new air conditioner that will minimize the amount of premature failure of batteries. The office buildout provides a commonly used area for progress meetings, but the existing heating and cooling capacities are inadequate. GLWA-CON-252 replaces the existing air conditioner and radiant heaters with a variable refrigerant unit that can provide adjustable heating or cooling for the area with adequate capacity.

JUSTIFICATION

The steam, condensate return, compressed air, and natural gas piping systems at the Springwells Water Treatment Plant need to be replaced to ensure overall reliability of the plant. These systems are original to the plant (i.e. from 1930s or 1950s) and are beyond their useful life.

These existing steam and condensate systems are in poor condition and require multiple repairs each heating season due to frequent failures. These repairs often require taking the entire steam system out of service which places equipment at risk of freezing due to exposure to low temperatures. Some failures have occurred in difficult areas to access and have not been repaired over many seasons because they are cost prohibitive to repair. The active steam, condensate, and air leaks require that the steam generators and air compressors run at higher loads to keep up with demand, resulting in additional stress on this equipment and is not energy efficient. Leaking steam and condensate contribute to significant moisture and condensation within the facility, which creates ideal conditions for corrosion of other aging plant infrastructure critical for continued water production. Failure of these lines is unsafe to nearby personnel since steam and condensate could cause severe burns, and high pressure lines would result in fast moving air that can cause injury.

Procurement Method: Competitively bid - Request for Bid (RFB).

Advertised:	April 30, 2018
	On Michigan Inter-governmental Trade Network (MITN) website
Distributed to:	396 vendors
Downloaded by:	77 vendors
Addendums released:	8
Response due date:	August 2, 2018

Responses received: 3 vendors submitted bids

Evaluation Method: RFB - Lowest cost, responsive and responsible Bidder

Vendor (Lowest Cost to Highest)

Cost

Clark Construction Company \$23,601,341.70

LGC Global, Inc. \$24,949,000.00

Detroit Contracting, Inc. \$27,331,128.00

It is recommended that Clark Construction Company be awarded this contract.

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 (5519-882111.000-616900-114011)

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

Fiscal Year	Contractor's Estimating	
	CIP Plan	Projection Variance
FY 2019	\$ 1,278,000	\$ 2,938,452 \$ (1,660,452)
FY 2020	4,578,000	5,134,201 (556,201)
FY 2021	4,444,000	7,525,612 (3,081,612)
FY 2022	<u>-0-8,003,077</u>	<u>(8,003,077)</u>
Total	\$10,300,000	\$23,601,342 \$ (13,301,342)

While the award of this contract will result in a \$13,301,342 negative estimating variance as compared to the CIP Plan the majority of anticipated spend variance is not planned to occur until FY

2021 and FY 2022. The CIP budget will be updated to address this negative estimating variance and timing of other projects will shift accordingly to keep total CIP spend in line with the plan.”

SAVINGS, COST OPTIMIZATION, AND REVENUE ENHANCEMENT IMPACT

This award of this contract provides a negative variance of \$13,301,341.70, \$10,300,000.00 project estimate less \$23,601,341.70 actual. Sufficient data is not presently available to quantify additional savings from improved operational and maintenance efficiency. Improving these secondary systems will improve facility resiliency by removing excess moisture that has caused corrosion of critical plant equipment and will improve plant safety by minimizing potential line failures that could lead to injury.

The variance was caused by an inaccurate engineer’s Opinion of Probable Cost (OPCC) that was used as basis for planning. The OPCC used RSMeans for estimating which is based on nationwide average unit prices with local correction factors. This estimating approach did not adequately account for: 1) large increases in labor rates due to recent worker shortages from concurrent projects across all industries and 2) additional labor hours to complete work in areas with access restrictions. The project cost is considered competitive and reasonable since all bids received are close to each other and had less than a 10% standard deviation.

Project estimate	\$ 10,300,000
Proposed award	<u>23,601,342</u>
Capital reserve adjustment	\$(13,301,342)

COMMITTEE REVIEW

This item was presented to the Operations and Resources Committee at its meeting on December 12, 2018. 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.