



Legislation Text

File #: 2018-873, Version: 1

GLWA-CON-288

Electrical Tunnel Rehabilitation at Lake Huron Water Treatment Plant

Agenda of: August 22, 2018

Item No.: **2018-873**

Amount: \$3,888,000.00

TO: The Honorable
Board of Directors
Great Lakes Water Authority

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

DATE: August 1, 2018

RE: **Contract No. GLWA-CON-288**
Electrical Tunnel Rehabilitation at Lake Huron Water Treatment Plant
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-288 "Electrical Tunnel Rehabilitation at Lake Huron Water Treatment Plant" with Clark Construction Company, at a cost not to exceed \$3,888,000.00 for a duration of 365 days;** and authorizes the CEO to take such other action as may be necessary to accomplish the intent of this vote.

BACKGROUND

GLWA's Lake Huron Water Treatment Plant (LHWTP) is one of five water treatment plants. Medium-voltage power is conveyed between the step-down transformers on one side of the site to the low-lift pumping station on the other side of the site through an underground electrical utility tunnel. The medium voltage power is transmitted through two electrical feeders. The electrical tunnel, constructed of reinforced concrete, is approximately 1,200 feet in length and is original to the plant, 1971. This project principally involves replacement of two medium-voltage electrical feeders, electrical conduit supports, miscellaneous electrical panels, and the addition of an ingress/egress stairwell at the east end of the tunnel. The project also involves rehabilitation of a reinforced concrete inside the tunnel and on the foundation for the outdoor transformers. Lastly, drainage improvements will be constructed around outdoor backup power generators.

The reinforced concrete inside the electrical tunnel has several leaks with water dripping on the electrical feeders/cables below which provide power to the entire plant. The electrical feeds are old and have surpassed their service life. Failure of these feeders will jeopardize the operation of the plant. Therefore, it is important to initiate the rehabilitation process of this tunnel to avoid any plant operation interruption.

JUSTIFICATION

The medium voltage electrical feeders inside the electrical tunnel have exceeded their service life. These feeders provide power to the low-lift pumping units at the plant, so failure of these feeders would result in loss of pumping and treatment at the plant. The reinforced concrete inside the electrical tunnel has several leaks and has water dripping on the medium voltage electrical conduits. Rehabilitation of the concrete to prevent leaks and replacement of the electrical feeders will improve the reliability of water production at LHWTP. Furthermore, there is no means of egress from one of the tunnel's far ends which poses safety risks considering the tunnel's length in case of emergency evacuation from the tunnel is necessary. Therefore, the addition of an additional ingress/egress point at the dead end of the electrical tunnel will improve safety. The concrete foundations for the transformer and associated power poles are severely deteriorated and require improvement to provide stability. Lastly, drainage improvements will be made to improve access during and after rain events, remove standing water from a high-voltage area, and improve the longevity of the concrete structures.

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 (5519-882111.000-616900-111004)

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

Fiscal Year	Amount
FY 2019 Budget	\$ 368,000
FY 2020 Budget	<u>4,232,000</u>
Financial Plan Estimate	\$4,600,000
Proposed Contract Award	<u>3,888,000</u>
Positive Estimating Variance	\$ 712,000

SAVINGS, COST OPTIMIZATION, AND REVENUE ENHANCEMENT IMPACT

This project rehabilitates and provides additional structural integrity to an existing electrical tunnel to

avoid future emergency repairs. Cost savings are not determinable at the time of this award.

The award of this contract to the lowest, qualified bidder creates a positive estimating variance of \$712,000. This variance will supplement capital reserves.

Project estimate	\$4,600,000
Proposed award	<u>3,888,000</u>
Capital reserve adjustment	\$ 712,000

COMMITTEE REVIEW

This item was presented to the Operations and Resources Committee at its meeting on August 8, 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.