Legislation Text

File #: 2019-421, **Version:** 1

Contract No. 1803769

Lake Huron Water Treatment Plant - Low Lift, High Lift, Wash Water Pumping Improvements, Electrical Improvements, and Miscellaneous Chemical Improvements

CIP# 111001 / BCE 71.6

Agenda of: December 19, 2019
Item No.: **2019-421**
Amount: $10,465,656.11

TO: The Honorable
Board of Directors
Great Lakes Water Authority

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

DATE: December 3, 2019

RE: **Contract No. 1803769**
Lake Huron Water Treatment Plant - Low Lift, High Lift, Wash Water Pumping Improvements, Electrical Improvements, and Miscellaneous Chemical Improvements

Vendor: Arcadis of Michigan, LLC

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. 1803769 "Lake Huron Water Treatment Plant - Low Lift, High Lift, Wash Water Pumping Improvements, Electrical Improvements, and Miscellaneous Chemical Improvements" with Arcadis of Michigan, LLC, at a cost not to exceed $10,465,656.11 for a duration of 3,063 days;** and authorizes the CEO to take such other action as may be necessary to accomplish the intent of this vote.

BACKGROUND

Proposed Contract No. 1803769 is a consulting engineering services contract to design improvements to the Lake Huron Water Treatment Plant's (LHWTP) low-lift, high-lift and filter wash water pumping systems, and the phosphoric acid chemical feed system. Construction of these improvements will be made under separate construction contracts. The engineering consultant retained under proposed Contract No. 1803769 will also provide construction administration and resident project representation services during the construction phase of the project.

The Lake Huron Water Treatment Plant is GLWA's northernmost water treatment plant and satisfies approximately one-third of GLWA's total water system demand on a daily basis. The LHWTP primarily serves the northern and north western portions of the transmission service area. LHWTP was constructed in the late 1960s/early 1970s and was placed into service in 1974. Its original treatment capacity was 200 million gallons per day (MGD). During the 1990s, the plant was expanded to 400 MGD as a modified direct filtration plant. The 1990s plant expansion did not improve the existing electrical switchgear on site, except to add equipment related to the additional plant capacity.

As part of the 2015 Water Master Plan Update, LHWTP's capacity will be aligned with the decreasing trend in overall system water demands. LHWTP's treatment capacity will be modified to approximately 320 MGD to align installed treatment and pumping capacity with system demands.

JUSTIFICATION

The primary driver for this project is the age and condition of existing major plant pumping and associated electrical equipment. The majority of the pumping units and electrical equipment are original to the facility and past their useful service life. The electrical gear is especially obsolete. Moreover, it is becoming increasingly difficult to obtain parts to replace failed system equipment due to age. Furthermore, the low- and high-lift pumping equipment are not efficiently sized for current and forecasted water system demands. As a result, matching system demands using the existing pumping equipment is inefficient and operationally challenging. For example, the LHWTP base water system demand is 120 MGD. Currently, there is no arrangement of low-lift pumps that can match this demand. The plant operates one 100 MGD low lift pump continually and cycles an additional 100 MGD pump in a batch mode to balance low-lift and high-lift demands. This project will redesign the low-lift pumping equipment so that it operates as close to steady-state as demand allows. The existing phosphoric acid chemical storage and day tanks are over 20 years old, past their useful service life, and therefore need to be replaced to maintain reliability and integrity. All piping and transfer pumps associated with the phosphoric acid tanks will also be replaced.

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 (5519-882111.000-617950-111001)

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

Fiscal Year	
FY 2020 Budget	$ 375,000.00
FY 2021 Budget	1,550,000.00

FY 2022 Budget	3,108,000.00
FY 2023 Budget	352,000.00
FY 2024 Budget	400,000.00
FY 2025+ Budget	2,600,000.00
Financial Plan Estimate	$ 8,385,000.00
Proposed Contract Award	10,465,656.11
Estimating Variance	$ (2,080,656.11)

This negative estimating variance to be funded from capital reserves.

SAVINGS, COST OPTIMIZATION, AND REVENUE ENHANCEMENT IMPACT

This project makes improvements to the low-lift, high-lift, and filter wash water pumping systems, as well as to the phosphoric acid chemical feed system at the Lake Huron Water Treatment Plant. Cost savings are not determinable at the time of this award.

COMMITTEE REVIEW

This item was presented to the Operations and Resources Committee at its meeting on December 11, 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.