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Department of Utilities  
Water Treatment Facility  
2281 Manitowoc Road  
Menasha, WI  
920-832-5945 tel.  
920-832-5949 fax

**TO:** Chairperson Ed Baranowski and Members of the Utilities Committee

**FROM:** Chris Shaw, Utilities Director

**DATE:** April 4, 2019

**RE:** *Award Phase I Engineering Services Contract for the Lake Intake Shorewell Project to McMahon in the Amount of \$411,000 with a 10% contingency of \$41,000 and a project cost not to exceed \$452,000*

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#### **BACKGROUND:**

The Appleton Water Treatment Facility (AWTF) draws and treats raw water from Lake Winnebago through the Raw Water Lake Station. Once pretreated, the water is pumped to the AWTF. The intent of this project is to address reliability and redundancy in raw water treatment.

The lake intake and shorewell were constructed in 1968. The intakes' configuration and building materials are prone to icing events that have stopped raw water. The lake station traveling screen removes large objects from the raw water intake such as logs, fish, and other debris. This project will provide for a replacement screen and a screenings conveyance system for wastes to be collected. This project will also see upgrades to the incoming high voltage power systems, chemical system upgrades, as well as necessary building systems (e.g., process water, roof, HVAC, etc.).

Project planning to date has consisted of conditions assessments and alternatives analyses for both existing equipment and structures as well as proposed improvements to the lake station and intake. This engineering effort was conducted by McMahon Associates with the aid of Appleton Water Treatment (AWTF) staff.

McMahon has made available the report which summarizes their efforts and also serves as a planning document for three individual project phases. The first phase is engineering services being requested in this memo. Phase II will consist of providing a raw water transmission line from the lake station to the AWTF. The engineering effort for this project is being led by the City's Engineering Department. Phase III will provide for an intake out into Lake Winnebago. This project phase is planned for construction after 2020.

#### **ENGINEERING SERVICES:**

The Utilities Committee approved awarding preliminary engineering services to McMahon on May 17, 2018. As part of the initial approval there was a recommendation made for a

conditional approval of the current request of Phase I engineering services that takes into account the foundational project work McMahon has provided as part of preliminary engineering. McMahon Associates has performed well during the preliminary engineering phase. As a result, city staff including AWTF Operations Joe Myer, PR&FMD Director Dean Gazza, Utilities Deputy Director Chris Stempa and myself have completed negotiations for Phase I engineering services. These services include modifications to the existing intake and improvements to the lake station.

**Engineering Services:**

1. Modifications to the Existing Intake
  - a. Include remote controlled hydraulic valve on riser pipe
  - b. Replace intake grate and chemical dispersion system
  - c. Introduce new chemical and sampling lines
2. Pumping Station Site
  - a. Remove well and sewage holding tank
  - b. Correct settling conditions around facility
  - c. Pavement and road replacement
  - d. 15" storm sewer replacement
  - e. Remediate treatment screen gantry
3. Building Envelope
  - a. Tuck pointing brick
  - b. Replace awning and signage
  - c. Paint and caulk interior
4. HVAC System
  - a. System Replacement
5. Plumbing
  - a. Construct new well system
6. Electrical and Controls
  - a. Replace Motor Control Center (MCC) and Variable Frequency Drives (VFDs)
  - b. Replace control panel components
  - c. Upgrade telemetry system
  - d. Modification to Programmable Logic Controller (PLC) and Supervisory Control and Data Acquisition (SCADA) systems.
  - e. Bring up electrical system to electrical code requirements
7. Process Operations
  - a. Replace 11' traveling screen
  - b. New dewatering equipment for screenings
  - c. New 8' screen
  - d. Replace (2) potassium permanganate systems

**SCOPE OF SERVICES:**

Phase I engineering services would include a traditional project scope. Design services would include engineered drawings and specifications with reviews at 30% and 90%. Refined construction estimates and bidding documents would be the deliverables of design. Other

services include: regulatory agency approvals, bidding services, construction administration services, shop drawing review and construction management services.

**RECOMMEDATION:**

Award Phase 1 Engineering Services Contract for the Lake Intake Shorewell Project to McMahon Associates in the Amount of \$411,000 with a 10% contingency of \$41,000 and a project cost not to exceed \$452,000. Questions regarding this project should be directed to Chris Shaw at ph: 920-997-4200.