



DEPARTMENT OF UTILITIES

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MEMORANDUM

Date: February 18, 2025
To: Chairperson Brad Firkus and Members of the Finance Committee
CC: Ryan Rice, Deputy Director of Utilities
Kelli Rindt, Enterprise Accounting Fund Manager
From: Chris Stempa, Director of Utilities
Subject: **Action: Approve Contract Amendment #2 to McMahon for Phase II Solids Dewatering Equipment Upgrades for additional design and construction management services in the amount of \$13,300 increasing the contract amount from \$188,900 to \$202,200**

BACKGROUND:

The Appleton Wastewater Treatment Plant (AWWTP) Phase 2 Solids Dewatering Equipment Upgrades Project engineering service contract was awarded to McMahon by Common Council on April 5, 2023 in the amount of \$162,000 with a 15% contingency of \$24,300 for a Project Total not to exceed \$186,300. Owner directed changes in contract scope occurred over the course of the preliminary engineering phase in early 2024 as part of Contract Amendment #1 (\$26,900, approved by Common Council on May 15, 2024).

CONTRACT AMENDMENT #2

More recently staff have expressed a desire to replace the two existing Belt Filter Press (BFP) polymer make-down systems after experiencing operational issues and mechanical failures with the original make-down systems. The two different vintage make-down systems are dissimilar in design, operation, and parts. McMahon was asked to provide a cost proposal to identify a present-day equipment replacement for both systems that equals current performance but offers expanded remote functionality with use of the existing Supervisory Control and Data Acquisition (SCADA) system

Additionally, McMahon was asked to assist with identifying a solution to conveying filtrate from the BFPs to the head of the aeration process. The existing 10-inch and 12-inch diameter ductile iron piping extends nearly 1,200 feet and has been plagued by calcium carbonate scale formation. The progressive formation of this scale eventually restricts flow through filtrate piping which must be removed to maintain effective treatment operations. The primary method of removal is by 10,000 psi water jetting of the piping, also known as hydroblasting which costs over \$25,000 annually. We are seeking a long-term solution to the conveyance configuration that mitigates the rate of scale formation and provides redundancy. A summary of the McMahon proposal is outlined below.

Change in Scope

1. Filtrate Piping Evaluation

- A. Evaluate alternatives for conveying filtrate from the belt filter presses. Options to consider include, but not limited to, the following:
 - Provide designated below grade gravity filtrate line(s) from V-Building to Tunnel 9.
 - Provide wet well and pump filtrate through a force main. Force main would be either below grade or located in the Plant tunnel system.
 - Evaluate utilizing Plant effluent as carrier water for the filtrate to reduce scaling potential.
- B. New force mains or gravity lines will need to be configured so they can be readily jetted and/or chemically cleaned.
- C. Provide recommendations on further analytical testing on the filtrate. Estimate the Langelier index of the filtrate and estimate impacts of dilution and/or pH adjustment.
- D. Develop opinions of probable cost for the options.
- E. Prepare Technical Memorandum summarizing findings and providing recommendations.

2. Dewatering Polymer Feed System

- A. Prepare construction bulletin incorporating new polymer make down units into AWWTP Belt Filter Press Phase 2 Replacement Project.
- B. Replace the existing make down with new Polydyne EA 70 emulsion polymer make down units.
- C. New make down units will be tied into the Plant's control and SCADA system.
- D. Provide construction services for the new polymer feed systems.

Current Contract Fee	\$188,900
Filtrate Piping Evaluation	\$7,400
<u>Polymer Feed System</u>	<u>\$5,900</u>
New Contract Price	\$202,200

RECOMMENDATION

This amendment would result in the Phase II Solids Dewatering Equipment Upgrades contract with McMahon increasing from \$188,900 to \$202,200. The contract amendment would be funded from 2024 carryover dollars. No additional contingency funds are being requested currently with the change in scope.

If you have any questions regarding this project, please contact Chris Stempa at ph: 832-5945.