



Department of Utilities  
Wastewater Treatment Plant  
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**To:** Chairperson Vered Meltzer and Members of the Utilities Committee

**From:** Interim Utilities Director, Chris Stempa

**Date:** January 19, 2024

**Re: Utilities Committee Action:** Award Final Clarifier Tank Underdrain and Tank Drain Rehabilitation Contract to Sabel Mechanical in the amount of \$44,411 with 15% contingency of \$6,662 for a project total not to exceed \$51,073.

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#### **BACKGROUND:**

There are six (6) final clarifiers at the Appleton Wastewater Treatment Plant (AWWTP) that are used to separate mixed liquor sludge solids from the treated effluent. Each final clarifier is 100 feet in diameter and 18 feet deep with a volume equal to 1,060,000 gallons. The final clarifiers provide a quiescent zone that allows for the separation of suspended solids (and floating scum) before treated wastewater enters the chlorine contact tank for seasonal disinfection basin where it eventually is discharged to the Lower Fox River.

The final clarifiers were constructed as part of the early 1990's plant upgrade. An underdrain network was constructed beneath the final clarifiers to collect groundwater and alleviate the buoyant force pressure exerted on these concrete structures. The groundwater is conveyed through perforated drainpipes by gravity to a centralized collection sump. The 33-foot-deep sump is dewatered using two 15 hp centrifugal pumps that cycle based on liquid levels within the wetwell (also known as a sump). In late 2022, one of the two original pumps failed. A new pump was purchased and installed in early 2023, which subsequently failed in November 2023 and was sent for warranty repair. The remaining original pump failed, and staff were unable to retrieve it for inspection after the pump cable retrieval system failed. A temporary submersible pump system was installed in the wetwell with an above grade discharge house to maintain liquid levels until rehabilitation work could occur. It should be noted that there is urgency to complete this work in a timely manner. The inability to adequately relieve groundwater pressure exerted on an empty clarifier (e.g. emptied for reasons of emergency maintenance or process control) could generate enough buoyant force to lift or "float" a clarifier, resulting in catastrophic structural failure.

The final clarifier tank drainage wetwell is immediately adjacent and similar in design to the underdrain system. It is designed to pump out multiple or individual final clarifiers when

cleaning or maintenance is required. Similar to the underdrain system, the pumps are original to the 1990's upgrade and there is evidence of significant exterior corrosion of steel components (e.g., cable guide/retrieval system and discharge pipe).

### **REQUEST FOR QUOTATIONS**

A Request for Quotation (RFQ) process was advanced to solicit costs from four reputable contractors experienced in wastewater treatment and wastewater lift station work. The scope of work specified was based solely on the requisite tasks that would reestablish functionality and long-term reliability to both pump systems. That scope includes replacement of the current pump bases, discharge piping, and guide wire retrieval system. The RFQ review process was completed on January 17, 2024, following a desktop engineering analysis which confirmed that quoted replacement components matched system hydraulic needs. The quotes are summarized below in Table 1. Sabel Mechanical (Sabel) provided the least cost quote and has successfully completed other project work for the Department of Utilities in the past.

**Table 1: RFQ Summary**

<b>Company</b>	<b>Total</b>
Sabel Mechanical	\$44,411
August Winter	\$74,100
Staab Construction	\$73,000
Great Lakes Mechanical	\$51,288

### **RECOMMENDATION:**

I am requesting a contract award to Sabel Mechanical for Final Clarifier Tank Underdrain and Tank Drain Rehabilitation work in the amount of \$44,411 with 15% contingency of \$6,662 for a project total not to exceed \$51,073. Funding for this contract would be provided under an existing Capital Improvement Program project that was established for this work in 2023.

If you have any questions or require additional information regarding this project please contact Chris Stempa at 920-832-5945.