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Department of Utilities  
Wastewater Treatment Plant  
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**TO:** Chairperson Joe Martin and Members of the Utilities Committee

**CC:** Chris Shaw, Utilities Director  
Robert Kennedy, Wastewater Operations Supervisor

**FROM:** Chris Stempa, Utilities Deputy Director

**DATE:** March 18, 2015

**RE:** *Award purchase of Chlorination/Dechlorination Chemical Feed Equipment to William/Reid LTD, LLC in the amount of \$57,700 plus a 5% contingency of \$2,885 for a total not to exceed of \$60,585*

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**BACKGROUND:**

Seasonally (May through September) the Appleton Wastewater Treatment Plant (AWWTP) is required by Wisconsin Pollution Discharge Elimination System permit to disinfect its treated wastewater effluent stream. Since 2000, the AWWTP has relied upon the chemical Sodium Hypochlorite for the purposes of disinfection. Sodium Bisulfite is fed during the same time period post disinfection to neutralize residual chlorine prior to discharge to the Fox River. The existing chemical feed equipment is now approximately 15 years old and the original manufacturer no longer supports the equipment and spare parts are not readily available. Therefore, the Department of Utilities identified replacement of the existing chlorination/dechlorination system as part of a 2015 capital improvement project (budgeted \$65,000).

The AWWTP solicited the professional services of McMAHON to provide a cursory review of viable chemical feed system options to assist with replacement equipment selection. McMAHON met with AWWTP staff to solicit input and reviewed the existing chemical feed system including system requirements. Three alternate chemical feed systems were evaluated by the engineer that included peristaltic chemical feed pumps, diaphragm chemical feed pumps, and alternative vacuum feed manufactures. While the peristaltic and diaphragm systems differ in design and operating methodology, each alternate was capable of achieving the required precision chemical dosing required for regulatory compliance purposes.

**QUOTE PROCESS:**

Three vendors were selected based upon their ability to provide a chemical feed system that meets specific treatment process and functionality requirements. The pump styles selected are capable of providing the dosage accuracy across the anticipated range of flows experienced at the AWWTP.

<b>Vendor</b>	<b>System Type</b>	<b>Quote</b>
Crane	Peristaltic (Blue & White)	\$55,000
William/Reid LTD	Vacuum Feed (JCS Industries)	\$57,700
Petersen & Matz	Diaphragm (Wallace & Tiernan)	\$70,000

**JUSTIFICATION:**

The JCS Industries vacuum feed system was found to be a direct replacement of the existing chlorination/dechlorination equipment. Although \$2,000 higher in cost than the Crane peristaltic quote, the JCS vacuum feed system would be significantly easier to install, does not require WDNR project review/approval, and would involve minimal if any staff start-up training since it is essentially an in-kind equipment replacement. Furthermore, the JCS Industries quote includes 2-days of start-up services that the other vendors did not identify.

McMAHON researched JCS Industries and contacted references to answer questions of service and equipment reliability. Nothing in this research caused concern with the AWWTP moving forward with the equipment purchase.

**RECOMMENDATION:**

It is recommended that the Utilities Committee award purchase of the chlorination/dechlorination feed system to William/Reid LTD, LLC in the amount of \$57,700 plus a 5% contingency of \$2,885 for a total not to exceed of \$60,585. If you have any questions regarding this project please contact Chris Stempa ph: 832-5945