"…meeting community needs…enhancing quality of life."

Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915
920-832-5945 tel.
920-832-5949 fax

TO: Chairperson Greg Dannecker and Members of the Utilities Committee

CC: Chris Shaw, Utilities Director
Jeff Fait, Finance Purchasing Manager

FROM: Chris Stempa, Utilities Deputy Director

DATE: March 2, 2017

RE: ***Award sole source Phosphorus Analyzer and Filter System to Hach Company in the amount of $24,120***

BACKGROUND:

Since 2013, the Appleton Wastewater Treatment Plant (AWWTP) has been actively evaluating regulatory alternatives that will satisfy compliance for the Lower Fox River Total Maximum Daily Load (TMDL). It has been a staff objective to conduct appropriate due diligence in advance of the next Wisconsin Pollution Discharge Elimination System (WPDES) permit. Per NR 217, it will be required that a wastewater treatment plant develops and implements a phosphorus discharge optimization plan for their current operation. This is recognized by the DNR as the first step in meeting low-level phosphorus limits as part of the next WPDES permit. Optimizing chemical treatment for phosphorus is one of the primary elements within an optimization plan. It is critical for process control to have the ability to continuously monitor phosphorus concentrations and react to them accordingly in order to consistently comply with future WPDES permit limits.

In March 2014 and December 2015, Common Council approved the sole source purchases of phosphorus analyzers through the Hach Company (Hach). These purchases allowed the wastewater plant to continuously monitor phosphorus (as orthophosphorus or $P_2O_5^-$) at strategic points within the treatment "train." The use of online phosphorus analyzers were requisite for data gathering and ongoing full scale chemical treatment demonstrations.

JUSTIFICATION:

The 2017 purchase would involve the acquisition of a second Hach Phosphax and Filtrax unit to monitor orthophosphorus levels in mixed liquor immediately following biological treatment. The additional equipment recommended for purchase in combination with

other planned changes to the existing low level final effluent phosphorus analyzer (Hach 5500sc) are designed to decrease the current dose response time by nearly 60% providing better overall chemical treatment.

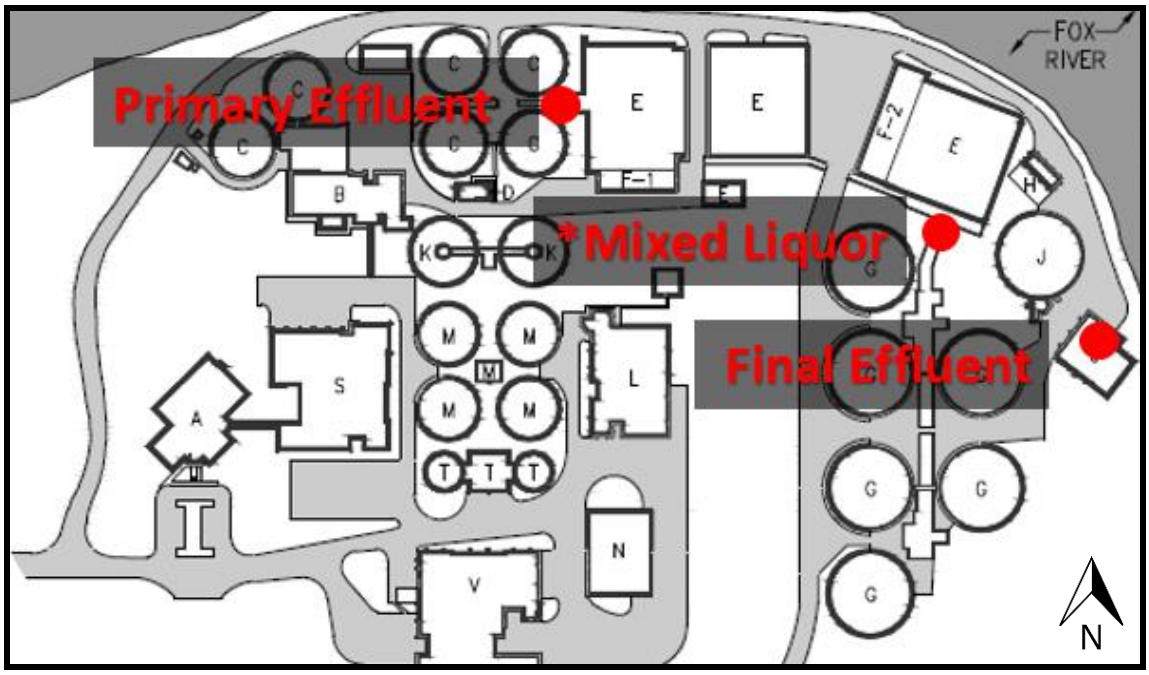

Figure 1 - AWWTP Site Map Depicting Existing and *New Sample Stream Locations (●)

The sole source justification for the Hach equipment purchase remains the same to that stated in the March 7, 2014 Utilities Committee memo. Applied Spectrometry Associates, Inc. (A.S.A. Chemscan) is considered the other reputable manufacturer of proven low-level phosphorus analyzer capabilities within the wastewater treatment industry. The A.S.A. Chemscan equipment is comparably priced ($1,500 less) to that of Hach. However, the Hach equipment provides greater capability within a single expandable package using control based logic to cost effectively feed phosphorus treatment chemicals. The criteria used for sole source purchase determination are based on the following:

1. Appropriate sensitivity to future proposed permit discharge limits;
2. Robust reliability for sample points being monitored;
3. Compatibility with other existing Hach analyzers/equipment;
4. Expandability for future flow-paced chemical control;
5. Equipment and operator interface familiarity.

RECOMMENDATION:

It is recommended that the Utilities Committee award a sole source to Hach Company for the phosphorus analyzer and filter system in the amount of $24,120. The funding for this purchase will come from "TMDL Operations Review" within the Utilities O&M budget. If you have any questions regarding this project please contact Chris Stempa ph: 832-5945