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Department of Utilities
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TO: Chairman Greg Dannecker and Members of the Utilities Committee

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

FROM: Chris Stempa, Utilities Deputy Director

DATE: May 21, 2015

RE: *Approval of Wastewater Diffused Air Floatation Polymer Feed Pump Purchase – Three (3) Watson Marlow Peristaltic Pumps from Drydon Equipment, Inc. in the amount of \$20,811*

BACKGROUND:

As part of the 2015 wastewater treatment budget there is \$25,000 designated for diffused air floatation (DAF) polymer feed pump purchases. The existing Hills-McCanna McCannatrol diaphragm metering pumps have reached their useful life at +20 years and are no longer manufactured. Reliability issues, accessibility to replacement parts, dose accuracy, and inability to automate with existing SCADA controls have necessitated the purchase of new polymer dosing pumps.

Given the age of the existing pumps and changes in technology, McMahan was hired to perform a bench top analysis/review of viable replacement polymer feed pumps which included:

- Moyno progressive cavity feed pump
- Blue & White peristaltic pump
- Cole Palmer peristaltic pump
- Watson Marlow peristaltic pump

The progressive cavity pump was not considered because of the additional system requirements necessary for precision dosing. The Blue & White manufacturer did not provide a pump capable of delivering the required 2.0 gpm specification. Therefore, the Cole Palmer and Watson Marlow peristaltic were the only two that satisfied all of the system requirements and specifications as part of the bench top analysis. As a result, these two pumps were the only considered for internal review and discussion.

QUOTE PROCESS:

As previously stated, four vendors were selected based upon their ability to provide chemical feed pumps that met DAF process requirements. Based on a bench top analysis conducted by McMahon, only two of the pump styles met all the process criteria without requiring system retrofits. The purchase cost and standard warranty for each is as follows:

Supplier	Pump Model	Purchase Price	Warranty
Marshall Bond Pumps	Cole Palmer Masterflex I/P:	\$5,333 ea.	1-Year
Dryon Equipment Inc.	Watson Marlow 620 UN/RE	\$6,837 ea.	5-Year

JUSTIFICATION:

The Cole Palmer and Watson Marlow peristaltic pumps had very good reviews from those that were contacted for references. However, the Cole Palmer pump references were limited to smaller wastewater treatment plant installations and a local packaging industry. After careful consideration of purchase cost, warranty, and reference checks it was determined that the Watson Marlow peristaltic pump provided the greatest overall value. In addition, it was recognized that both sides of the Utility are adopting an asset management strategy with the goal of inventory standardization. For that reason, the Appleton Water Treatment Facility (AWTF) chemical feeds pumps are predominantly Watson Marlow. Four Watson Marlow 620 peristaltic pumps are currently being utilized at the AWTF for sodium hypochlorite dosing. By purchasing the same series pump at wastewater it makes it possible to reduce overall inventories, provide emergency back-up at either facility in the event of failure, facilitate interchangeability among treatment applications, and provide operational and maintenance familiarity with a single pump manufacturer.

A recent example of what successful back-up and interchangeability provides through standardization involves the DAF polymer system. For nearly one year, the wastewater plant has been borrowing a Watson Marlow 520SN peristaltic from the AWTF to maintain DAF polymer feed (still is currently being used). The original intent was only to use this pump for a few weeks while parts for the remaining operable diaphragm pumps were shipped and installed. However, this temporary pump measure quickly demonstrated its value as a suitable replacement because of its ease of use, maintenance simplicity, precision dosing capabilities, and reliability (no issues to date on a single pump).

RECOMMENDATION:

It is recommended that the Utilities Committee award purchase of three Watson Marlow peristaltic pumps from Drydon Equipment, Inc. in the amount of \$20,811 for the AWWTP DAF polymer feed system. If you have any questions regarding this project please contact Chris Stempa ph: 832-5945