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

From: Utilities Deputy Director, Chris Stempa

Date: May 19, 2021

Re: Utilities Committee Action: Award the 2021 Secondary Clarifier Drive removal, Rebuild, and Reinstallation Contract to Sabel Mechanical in the amount of \$174,302 with 15% contingency of \$26,145 for a project total not to exceed \$200,447.

Utilities Committee Action: Award the Sole Source Purchase of Secondary Clarifier Drive Rebuild Parts through Evoqua Water Technologies LLC in the amount of \$105,964.

There are six secondary clarifiers located on the east/southeast side of the Appleton Wastewater Treatment Plant (AWWTP) campus. Each clarifier is 100 feet in diameter and 18 feet deep with a volume equal to 1,060,000 gallons. The clarifiers function as sedimentation tanks that remove flocs of biological growth generated in upstream activated sludge processes. The "mixed liquor" flow from activated sludge processes that contains the previously described floc is split between each of the six secondary clarifiers from which settled solids are collected for additional treatment. The treated water then flows downstream where it eventually is discharged to the Lower Fox River.

Each secondary clarifier is equipped with a continuously rotating collection mechanism for settled secondary sludge that is powered by Envirex HT60 drive units. The drive units were installed as part the major upgrades project in the early 1990's. The Utilities Department identified a 2021 CIP to replace all six drive units based on evidence of component wear and the potential for failure. A wholesale rebuild event commonly occurs every 10 years according to the manufacturer. The existing original drive units have now eclipsed the typical life expectancy of 25 years after continuous use. This is a testament to the robust construction of the clarifier equipment and the ongoing preventative maintenance program of staff.

In March 2021, an onsite inspection was performed to assess the condition of the clarifiers and determine if a rebuild option might be a viable alternative to complete replacement. The inspection revealed that the existing clarifier drives units were a good candidate for a rebuild. The rebuild option was anticipated to be up to 50% less than a wholesale replacement. A

preliminary cost for a complete drive replacement was solicited in 2020 which totaled \$561,000 (excludes engineering and contingency costs). The original equipment manufacturer (OEM) of the clarifier drives, Evoqua Water Technologies LLC (Evoqua), was asked to provide a separate lump sum cost as part of an off-site build that is described further within this memorandum. Evoqua would provide all necessary parts and services including a standard one-year warranty as part of their factory circular drive rebuild program.

REQUEST FOR QUOTATIONS: REMOVAL, REBUILD, AND REINSTALLATION:

Based on those findings of the clarifier inspection, a Request for Quotation (RFQ) process was advanced to solicit costs from reputable contractors who would be tasked to remove and reinstall the drive units along with performing various repairs to structural components outside of the drive mechanisms. The RFQ process was completed during April 2021. Quotes were solicited from three contractors that possessed prior experience with wastewater clarifier drive removal and reinstallation services. The quotes are summarized 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: Secondary Clarifier Drive Work RFQ Summary

Company	Total
Sabel Mechanical	\$94,740
Staab Construction	\$138,884
August Winter & Sons	\$179,298

Upon receiving the quotes for removal and reinstallation services, Evoqua indicated that it has worked with select contractors in Wisconsin who have rebuilt the Envirex clarifier drive units for other wastewater treatment plants. Sabel is experienced with rebuilding Envirex clarifier drives at their facility in Fond du Lac, Wisconsin. As such, Sabel was asked to provide a competitive quote for rebuild services. Within this scenario, the itemized costs identified by Evoqua for replacement equipment and rebuild parts would remain the same as their original quote with the option remaining to the City to act upon rebuild services if desired. Sabel would still honor the standard one-year warranty that Evoqua offered as part of their factory circular drive rebuild program. The results of the quotation process are summarized in Table 2. The Sabel quote was \$29,938 less than Evoqua’s for rebuild services. Award of the rebuild services to Sabel would also significantly reduce the amount of time each clarifier would be out of service because of transportation logistics (Fond du Lac vs. Atlanta, Georgia). The total quoted cost from Sabel was \$174,302 after including the removal and reinstallation cost from Table 1 above.

Table 2: Secondary Clarifier Drive Rebuild Services

Description	Evoqua	Sabel
Rebuild Services	\$109,500	\$79,562

Note: with removal and reinstallation cost

REQUEST FOR QUOTATIONS – OEM SOLE SOURCE PARTS & REBUILD SERVICES

Evoqua provided a quotation for the necessary rebuild parts identified during the March 2, 2021 conditions assessment. As the Envirex HT60 clarifier OEM, Evoqua is the sole distributor of these parts required for the rebuild work. Table 3 summarizes the parts that will be provided by Evoqua as part of the sole source purchase which includes startup support as part of post rebuild commissioning.

Table 3: Evoqua Clarifier Drive Rebuild Parts Quote

Description	Evoqua Quote
WIPER-SKIMMER,3.5 X 70 X .19"TH,NEOPRENE	\$886.80
WIPER-SKIMMER,3.5 X 5.5 X .19"TH,NEOPRNE	\$274.20
WIPER-SKIMMER,5.5 X 7 X .19"THK,NEOPRENE	\$258.00
SQUEEGE-FLDZNG VANE,0.25 x 3 x -FT,NEOPRENE	\$2,745.00
SEAL-MANF, 3.625"W X 600"L X 0.25"THK	\$4,000.00
KIT,CLAMP W/BAND 50' X.62" FSTNRS & SPLC	\$900.00
FIELD SERVICE START UP (1) TRIPS - (1) DAY PER CLARIFIER	\$13,200.00
H60LT DRIVE REBUILD PARTS	\$82,500.00
SHIPPING	\$1,200
Total	\$105,964.00

SUMMARY

The combined not to exceed total cost for both actionable recommendations are 52% less than the contractor and equipment line-item amount allocated within the CIP budget (\$637,500). That number was based on a wholesale replacement because of various unknowns at the time with the existing 30-year old equipment. The rebuild work outlined above will provide a renewed life expectancy of 20-25 years which is comparable to new replacement clarifier drives.

RECOMMENDATION 1:

I am requesting an award of the Secondary Clarifier Drive Removal, Rebuild, and Reinstallation Contract to Sabel Mechanical as part of the “2021 Secondary Clarifier Rebuild Project” in the amount of \$174,302 with 15% contingency of \$26,145 for a project total not to exceed \$200,447.

RECOMMENDATION 2:

I am requesting sole source purchase award of Secondary Clarifier Drive Rebuild Parts through Evoqua Water Technologies LLC as part of “2021 Secondary Clarifier Rebuild Project” in the amount of \$105,964

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