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**To:** Chairperson Kathy Plank and Members of the Finance Committee

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

**cc:** Utilities Director Chris Shaw;  
Kelli Rindt, Enterprise Fund Accounting Manager

**Date:** September 7, 2016

**Re:** **Informational Item: *Change Orders #1, #2, and #3 to August Winter & Sons Inc. contract as part of the AWWTP Digester Improvements Project for contract extension, PLC equipment, and biogas cross-over pipe modification totaling \$14,294 resulting in a decrease in contingency from \$38,000 to \$23,706. No change to overall contract amount.***

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**Explanation:**

On February 3, 2016 Common Council approved contract for the Appleton Wastewater Treatment Plant (AWWTP) Digester Improvements Project to August Winter and Sons, Inc. for \$380,008 with a contingency of \$38,000 for a project total not to exceed \$418,008. The project improvements optimize the existing biogas (e.g. methane) mixing system, provide better measurement of modern gas metering technology, and introduce process instruments and SCADA improvements for improved process control.

- **Change Order #1 (\$0) – Extend Substantial & Final Completion Dates:** The original contract with August Winter & Sons Inc. included an aggressive project schedule predicated on the August 1, 2016 Focus on Energy incentive program deadline (\$22,695 incentive). The contract document formally described a substantial completion date of May 15, 2016 and final completion date of June 15, 2016. However, equipment lead-times were longer than anticipated for pressure transmitters, gas condensate tanks, and additional programmable logic controller (PLC) equipment. Therefore, the contract substantial completion date was extended to July 31, 2016 and final completion to September 30, 2016 to compensate for not only the additional lead-time but equipment installation and startup. It should be noted that all equipment designed as part of the Digester Improvements Project was successfully installed and started in advance of the Focus on Energy incentive deadline.

- **Change Order #2 (\$9,933) – Additional PLC Equipment:** This change order includes costs for additional PLC equipment including associated input modules and digital relays required to automate the biogas mixing system as designed. It was discovered during construction that an existing control module intended to support the new equipment installation had failed. It was also discovered that the existing electrical control panel did not have sufficient isolation relays and digital input modules required to fully automate the gas mixing system and provide feedback to the wastewater SCADA computer system.
- **Change Order #3 (\$4,361) – Biogas Cross-Over Pipe:** The original design intent of the 1990's biogas system was that each primary anaerobic digester have a dedicated gas mix compressor assigned to it. A cross-over pipe was installed as part of original construction to facilitate contingent gas mixing operation if one of the two compressors failed or was placed offline for maintenance by way of manually opening and closing specific valves. However, the original cross-over pipe location in relation to a new biogas condensate removal tank (Condensate Tank #2) does not allow biogas to be directed through it while operating Gas Mix Compressor #2. Instead the biogas short-circuits without pretreatment directly to Gas Mix Compressor #2. Change Order #3 includes costs to install an 8-inch diameter gas suction cross-over pipe with an isolation butterfly valve. The new cross-over pipe will allow pretreatment of all biogas prior to entering either online gas mix compressor. It also provides expanded operational versatility for gas system piping isolation during maintenance events.

If you have any questions regarding the project or change orders please contact Chris Stempa at 832-2353.