

MEMORANDUM

CITY OF ITHACA

DPW – WATER & SEWER DIVISION
510 FIRST STREET



DATE: 07/18/2022
TO: THE SPECIAL JOINT COMMITTEE
CC:
FROM: SCOTT GIBSON
RE: EMERGENCY BOILER REPORT – PUBLIC INTEREST ORDER
PRIORITY: HIGH

Please reference the attached MRB report which highlights the need for boiler replacement at the Ithaca Area Wastewater Treatment Facility. Recall that the original intent of the study was to evaluate the efficiency of the boilers and include recommendations for replacement. It plainly states problems with the condensing boilers (upgraded as part of the Johnson Controls Design and Build Project 7 years prior or so) and confirms that the cast iron systems are at their useful service life.

The problem at the plant is two-fold. The cast iron boilers have been in operation since 1987. On Page 8 you can see that the recommended life expectancy is 35 years and we've achieved that mark. Any problems with their operation at this stage is expected including cracks in the heat jackets and excessive corrosion throughout. The condensing "high efficiency" boilers however, should have given us 25 years. These are a completely different design than that of the cast iron systems, using large amounts of makeup air coupled with the recirculation of exhaust gases to pull as much heat as possible out of the exchanger. The resultant byproduct is in the form of condensation which is drained out of the unit. Unfortunately the atmosphere in a WWTP contains corrosive pollutants which tend to become more concentrated in the condensate accelerating deterioration and causing premature failure. In short, the MRB report feels that our atmosphere is not conducive to this type of design.

Page 9 includes an executive summary of the recommendations by MRB. Here, it states that all four boilers should be replaced within 2 years (report was compiled in 2020) along with the advice that we move away from condensing type systems. It is also recommended that we

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continue with a multi-gas option so that we can take advantage of either natural gas or plant produced biogas. The report further exemplifies replacement options on Page 21 identifying boiler sizing to meet the demands of the plant, the need to be compatible with the atmosphere for which they're operating, and to be flexible enough were they can burn either natural gas or biogas. The selected boilers under the Gordian project, a cost savings Design and Build program, meet these goals.

At this time, the two cast iron boilers are now completely off-line. (they were still working in 2020) The high efficiency condensing boilers are corroded but still operational but represent the only units heating the plant (needed to maintain heat in the digesters and normal building ambience). As of today, we are concerned that we will not have the thermal capacity to maintain a properly functioning system this coming winter; hence the emergency. It is recommended to replace two of the four boilers under the proposed Gordian contract. Lead times on the order are now well into December.

Attached you will please find the Gordian Contractor's Price Proposal Summary for this work in the amount of \$601,580.56. Staff has added an additional 8% for contingency (rounded up to \$650,000). The quoted amount is through the ezIQC program which establishes local, competitively-bid prices upfront, eliminating the need to bid each project separately. ezIQC is available to local governments in New York through the Town of Greece, which can be accessed through [General Municipal Law 103\(16\)](#).