



Council Report

Report Number: CA2022-005

Meeting Date: May 17, 2022

Title: **Trihalomethanes and Haloacetic Acids Reduction System Pilot**

Description: This report seeks authorization for staff to retain Aclarus and DM Wills for the purpose of piloting a trihalomethanes and haloacetic acids reduction system at the Lindsay Water Treatment Plant.

Author and Title: Adam Found, Manager of Corporate Assets

Recommendation(s):

That Report CA2022-005, **Trihalomethanes and Haloacetic Acids Reduction System Pilot**, be received;

That staff be authorized to issue a purchase order, with an upset value of \$62,000, to Aclarus for the purpose of piloting a trihalomethanes and haloacetic acids reduction system at the Lindsay Water Treatment Plant;

That staff be authorized to issue a purchase order, with an upset value of \$30,000, to DM Wills for the purpose of providing contract administration and project coordination services relating to the pilot to be conducted by Aclarus; and

That these purchase orders be accompanied by a contingency allowance of up to 20% of the value thereof and be committed to capital project 998220101 (Lindsay Water Treatment Plant Trihalomethanes and Haloacetic Acids Reduction System).

Department Head: _____

Financial/Legal/HR/Other: _____

Chief Administrative Officer: _____

Background:

As part of the 2019 Water-Wastewater Capital Budget, Council approved the Lindsay Water Treatment Plant Trihalomethanes and Haloacetic Acids Study (a capital project numbered 998190402). An essential step toward bringing the City into compliance with new regulations regarding water quality, the study examined and recommended solutions aimed at reducing trihalomethanes (THMs) and haloacetic acids (HAAs) in the water supplied by the Lindsay Water Treatment Plant (WTP). The study was prepared by DM Wills.

The preferred solution identified in the study is the incorporation of an ozone disinfection system into the front end of the water treatment process. Optimal specification and configuration of such a system will be informed by a bench-scale pilot currently being conducted by Aclarus, a Peterborough-based firm specializing in ozone disinfection who was single-sourced based on a competitive procurement process conducted by DM Wills on behalf of the City. The bench-scale pilot is being undertaken through the Lindsay WTP THM and HAA Reduction System project (numbered 998220101) approved through the 2022 Water-Wastewater Capital Budget.

Provided that the bench-scale pilot is successful as expected, the project is then to proceed to a full-scale pilot in order to demonstrably confirm the effectiveness of an ozone disinfection system and determine the optimal specification and configuration of such a system. For reasons noted elsewhere in this report, staff recommends that Aclarus be single-sourced to conduct that pilot. It is further recommended that staff be authorized to single-source DM Wills to provide contract administration and project coordination services relating to that pilot. The purpose of this report is to obtain those authorizations from Council in accordance with the City's Purchasing Policy.

Rationale:

Given the highly specialized and proprietary nature of potential solutions for THM and HAA reduction, DM Wills conducted a competitive procurement on behalf of the City with the aim of identifying the best solution. That process involved assessment of various solutions proposed by four firms prospectively capable of providing for and piloting such solutions. Proposals from two of the firms fell short of requirements, resulting in those firms receiving no further consideration. The proposals from the other two firms were generally promising. One of those firms, however, ultimately declined to proceed further with the procurement, citing the relatively small scale of the project as a reason. That left Aclarus as the only firm prepared to pilot a THM and HAA reduction system according to the City's needs.

Following DM Wills' recommendation, the City single-sourced Aclarus to conduct a bench-scale pilot for a THM and HAA reduction system based on ozone disinfection. Similarly justified single-sourcing is not uncommon for water-wastewater capital projects, as it is routinely done with the Ontario Clean Water Agency when it conducts competitive procurements on behalf of the City.

The bench-scale pilot by Aclarus is currently underway, and results from it are expected to be favourable and received by mid-June, 2022. If those results are indeed favourable, then a full-scale pilot is needed to demonstrably confirm the effectiveness of an ozone disinfection system and to determine the optimal specification and configuration of such a system. The full-scale pilot, which entails temporary alterations to the Lindsay WTP as well as extensive monitoring and testing, is expected to require 4-6 weeks for mobilization upon issuance of a purchase order and about 7 weeks of operation thereafter. To ensure the presence of conducive water intake conditions, operation of the full-scale pilot must occur during July-September. Due to the highly specialized and proprietary nature of the technology involved and wide variability in conditions across water treatment plants, such pilots are needed to inform customization of THM and HAA reduction systems to site-specific conditions.

Adequate duration and proper timing are essential to the reliability of the full-scale pilot. Missing the July-September window in 2022 will delay the project by an entire year. With patience of the Ministry of Environment, Conservation and Parks (MECP) waning over the City's THM and HAA exceedances, such a delay is expected to result in an order being issued against the City. Due to the highly specialized and proprietary nature of the technology involved in THM and HAA reduction systems, it is also essential that technological and administrative consistency be maintained throughout the piloting stages of the project. It is for these reasons that continuity of service by Aclarus and DM Wills across the two pilots is essential. Hence, the recommendations of this report.

Other Alternatives Considered:

If the recommendations of this report are not approved by Council, then staff will have to dramatically change the direction of the THM and HAA reduction system project. This would delay the project by approximately one year, likely result in the MECP issuing an order against the City and likely raise the cost of the project.

Alignment to Strategic Priorities

The recommendations of this report support water quality improvement as well as responsible financial and asset management, and hence align with the strategic priorities of “A Healthy Environment” and “Good Government” identified in the City’s 2020-2023 Strategic Plan.

Financial/Operation Impacts:

Attached hereto as Appendix A is the proposal by Aclarus for the above-noted full-scale pilot. Based on it and experience thus far with Aclarus and DM Wills, it is expected that the full-scale pilot will cost approximately \$92,000 at most between the two firms. This estimated cost is reflected in the recommendations of this report and is easily accommodated by the \$2.7M budget for the THM and HAA reduction system project. The balance of that budget is earmarked for the design and installation stages of the project.

Consultations:

DM Wills

Attachments:

Appendix A: Proposal by Aclarus for Full-Scale Pilot of TMH and HAA Reduction System Based on Ozone Disinfection



Proposal by Aclarus
for Full-Scale Pilot of

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Department Head: Juan Rojas, Director of Engineering and Corporate Assets