REPORT TO: Mayor and Members of Council

PREPARED BY: Sam Shannon,Director of Infrastructure and Operations

DEPARTMENT: Infrastructure & Operations

DIVISION: Wastewater

MEETING DATE: July 16, 2025

SUBJECT: Report DIO-40-2025 – Ailsa Craig Wastewater Treatment Plant HVAC Upgrades

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PROPOSED MOTION

THAT Council receives Report DIO-40-2025 regarding the “Ailsa Craig Wastewater Treatment Plant HVAC Upgrades” for information;

AND THAT Council enters a contract with Air Design Services for both the Ailsa Craig Wastewater Treatment Plant (Administration Building and Main Building) for the HVAC Upgrades project at a cost of $102,539.14 (including HST);

AND THAT Council enters a contract with Ontario Clean Water Agency for associated project services for the HVAC Upgrades project at an upset limit cost of $58,754.00 (including HST).

STAFF RECOMMENDATION

THAT Council receives Report DIO-40-2025 regarding the “Ailsa Craig Wastewater Treatment Plant HVAC Upgrades” for information;

AND THAT Council enters a contract with Air Design Services for both the Ailsa Craig Wastewater Treatment Plant (Administration Building and Main Building) for the HVAC Upgrades project at a cost of $102,539.14 (including HST);

AND THAT Council enters a contract with Ontario Clean Water Agency for associated project services for the HVAC Upgrades project at an upset limit cost of $58,754.00 (including HST).

EXECUTIVE SUMMARY

The Ailsa Craig Wastewater Treatment Plant is the Municipality's most energy-intensive facility, with HVAC systems responsible for 43% of its electricity consumption. To address inefficiencies, staff recommend proceeding with HVAC upgrades and energy monitoring in partnership with Air Design Services and OCWA. The project includes system retrofits, controls integration, and application for IESO energy incentives. The total cost is $161,293.14 (including HST), with up to $30,000 in rebates anticipated, reducing the net municipal cost to approximately $131,293.14. The project is within the approved 2025 capital budget and supports long-term Municipality energy and infrastructure goals.

LINK TO STRATEGIC PRIORITIES

Fiscal Responsibility By continuing to pursue funding from various levels of government and external organizations

Fiscal Responsibility By seeking fiscal sustainability by balancing service needs, demands, and growth

BACKGROUND

The Ailsa Craig Wastewater Treatment Plant (WWTP) is the Municipality's most energy-intensive facility, accounting for approximately one-third of North Middlesex's total energy usage based on past data. A historical energy analysis performed by CIMA+ and further analyzed by Ontario Clean Water Agency (OCWA) Innovation, Technology, and Alternate Deliver (ITAD) team, noted that the HVAC system alone contributes to approximately 43% of the plants total electrical demand. Further hydro bill comparisons in 2024 revealed that the facility's energy consumption is three times higher than that of a comparable wastewater treatment plant.

To address these inefficiencies, staff engaged the OCWA ITAD team to develop a proposal that supports the retrofit of the HVAC system, implementation of energy monitoring, and administration of energy efficiency incentive applications.

DISCUSSION

OCWA's proposal outlines a comprehensive scope of work that includes:

- Project management and stakeholder coordination;
- Installation of Variable Frequency Drives (VFDs) and Silicon Controlled Rectifiers (SCRs) to control air handling units;
- Integration of an Energy Management Information System (EMIS) with Power Monitoring Devices (PMDs);

- Administration and application for Independent Electricity System Operator (IESO) Retrofit and EMIS Incentives; and
- Post-implementation monitoring and performance review.

In support of the project, two (2) quotes were obtained from Air Design Services for the required HVAC equipment and installation:

1. Main Building HVAC Retrofit
    a. Includes four (4) VFDs, 2 SCRs, control system upgrades, and installation.
    b. Total (Incl. HST): $78,407.31.
2. Administration Building HVAC Upgrade
    a. Includes supply and installation of a 4-head Daikin ductless heat pump system.
    b. Total (Incl. HST): $24,131.83
3. OCWA Project Support and Implementation
    a. Project management, incentive applications, energy monitoring, and reporting. Note that OCWA's fees regarding incentive applications is an upset limit value and will be less if the funding received is less to ensure Municipality cost is lower than funding received.
    b. Total (Incl. HST): $58,754.00

The total combined cost of the project is $161,293.14 including HST. However, it is estimated that up to $30,000 may be recoverable through the IESO incentive programs administered by OCWA, which would reduce the net cost to the Municipality to approximately $131,293.14.

As part of the proposal process, Staff also investigated the following two data points for informational purposes:

1. If servicing by gas would be an option based on the nearby availability of the gas main.
    a. The cost to retrofit the existing structures, systems, and extend the gas servicing to the respective buildings would cost a minimum of two (2) times the cost of the proposed option.
2. If based on the age of the current HVAC system, and the understanding that the WWTP may be rebuilt and/or replaced with a larger facility based on the need for increased capacity, is it worth the investment based on the anticipated return.
    a. Based on the ongoing I&I project and projects that are likely to come out of that, and the expected William Street Sewage Pumping Station/WWTP retrofit project, the HVAC shell being retrofitted is still in very good condition,

with the expected remaining life of the facility expected to far exceed the return payback period.

FINANCIAL

The approved 2025 capital budget amount for this project is $200,000.00. The combined quotations from both Air Design Services and OCWA including HST (without expected incentive returns) is $161,293.14. This value is well within the available project budget and will be included as part of future budget variance reporting.

A summary of the anticipated financial impact for the project is as follows:

Component	**Cost (Including HST)**
Air Design Services – Main Building	$78,407.31
Air Design Services – Administration Building	$24,131.83
OCWA Project Services	$58,754.00
Total Project Cost	**$161,293.14**
Potential IESO Incentives	Up to $30,000 anticipated
Net Municipal Cost (Without HST Reduction)	**$131,293.14**

Proposals have been separated such that the Municipality can enter contracts with both agencies separately to reduce markup.

ATTACHMENT

- Air Design Services Quote – Administration Building – Dated June 10, 2025
- Air Design Services Quote – Main Building – Dated June 10, 2025
- Ontario Clean Water Agency – HVAC Systems and Controls Retrofit Proposal – Dated June 9, 2025

Prepared By: **Sam Shannon,Director of Infrastructure and Operations**
Reviewed By: Ralph D'Alessandro, Director of Finance /Treasurer
Approved By: Carolyn Tripp, Chief Administrative Officer