



The Corporation of the Town of Tecumseh

Community & Recreation Services

To: Mayor and Members of Council

From: Beth Gignac, Director Community & Recreation Services

Date to Council: February 11, 2025

Report Number: CRS-2025-01

Subject: Town of Tecumseh Energy Management Update

Recommendations

It is recommended:

That Report CRS-2025-01 Town of Tecumseh Energy Management Update **be received**;

And that the updated 2024 Energy Conservation and Demand Management (ECDM) Plan attached to Report CRS-2025-01 **be endorsed**.

Executive Summary

Ontario Regulation 507/18 requires that public agencies prepare Energy Conservation and Demand Management (ECDM) plans containing a summary of the agency's annual energy consumption and GHG emissions for its operations and current and proposed measures for energy conservation.

The Town developed its first Energy Conservation and Demand Management (ECDM) Plan in 2014 and is required to update the ECDM Plan covering the 2019-2024 operating period.

This report highlights the ECDM Plan update, detailing initiatives completed to support the Town's commitment to reducing energy consumption. It also outlines planned actions and future developments aimed at furthering this commitment.

Background

In 2014, Ontario's Green Energy Act (Ontario Regulation 507/18) was created to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs. With the implementation of the Act, public agencies are required to report yearly on the total energy usage for all facilities that meet the necessary requirements. Energy reporting and conservation planning will help public agencies manage electricity usage and costs, identify energy savings opportunities, evaluate results by comparing similar facilities across the province, and measure improvement over time.

Public sector organizations are required to develop five (5) year Energy Conservation and Demand Management (ECDM) Plans that require subsequent updates on a five (5) year cycle.

The Town of Tecumseh's updated Energy Conservation and Demand Management (ECDM) Plan was developed in response to Ontario Regulation 507/18 which requires public sector organizations to complete an update to the original plans that had been initially adopted in 2014. The ECDM plan presents greenhouse gas (GHG) emissions from energy consumption and provides effective methods of identifying energy conservation opportunities to guide the Town towards a more energy-efficient future.

In response to the continued risks associated with GHG emissions and their profound effects on the environment, the Town declared a climate emergency in December of 2019 (RCM 390/19) for the purposes of framing and deepening the commitment to protecting the local economy, ecosystems and community from the effects of climate change.

The Town is firmly committed to reducing energy consumption and GHG emissions by seeking additional measures and targets that continue efforts to reduce emissions overall while gaining traction towards a net-zero target in the future.

Over the lifetime of the plan, the Town has been engaged in a variety of processes and activities to reduce energy consumption and adapt to climate change. These are detailed in Attachment 1.

The following outlines several notable projects in recent years that have contributed to energy management initiatives:

- Replacement of HVAC Units within various municipal buildings including ten (10) units at Town Hall;
- Replacement of Refrigeration Plant Equipment at Arena including chillers, pumps and a condenser;
- LED Lighting Conversions in Municipal Buildings and Properties;

- Installation of eight (8) Level 2 Electrical Vehicles (EV) Charging Stations;
- Urban Forest Project that aims to plant trees in neighbourhoods throughout the Town.

To conduct the 2024 update of the Town’s ECDM Plan, Matrix Solutions Incorporated was retained to support the update and complete a data consumption review along with assessments pertaining to municipal buildings, properties and infrastructure to determine opportunities for cost savings and reduced consumption.

Matrix Solutions Incorporated’s efforts ensure a comprehensive and effective update to the Town’s ECDM, addressing both current and future environmental challenges.

Comments

Analysis – Energy Conservation and Demand Management (ECDM) Plan

In summary, overall corporate energy consumption (GJ) across all sectors reported in 2018 was reduced 8% by 2023. Previously, overall corporate energy consumption (GJ) across all sectors reported in 2018 was reduced 24% by 2021. Energy consumption values from 2020 and 2021 are artificial and influenced by the COVID-19 global pandemic. This also affected the energy consumption in 2022 and 2023 as these years are portrayed as increased consumption in comparison to the global pandemic years, 2020 and 2021.

A summary of the energy and natural gas usage year-over-year is provided in Tables 1 and 2 below.

Table 1: Electricity and Natural Gas Targets to 2024

Energy Source	2018 Usage	5% Reduction	2024 Target Usage
Electricity (kWh)	3,788,065	189,403	3,598,662
Natural Gas (m3)	277,192	13,860	263,332

Table 2: Electricity and Natural Gas Usage Against Targets (2019-2023)

The years of 2019 through 2023 reflect the percentage difference from 2018.

Energy Source	2024 Target Usage	2019 Usage	2020 Usage	2021 Usage	2022 Usage	2023 Usage
Electricity (kWh)	3,598,662	3,671,339 (-3%)	3,079,419 (-21%)	3,268,964 (-15%)	3,082,926 (-21%)	3,115,711 (-19%)
Natural Gas (m3)	263,332	301,153 (+8%)	269,386 (-3%)	163,310 (-52%)	118,885 (-80%)	318,559 (14%)

It should be noted that the data for natural gas usage is considered to be artificial and incorrectly reflects actual usage and reduction conditions for 2021 through 2023.

Future Actions

The Town has partnered with Essex Energy Corporation to analyze the implementation of rooftop solar photovoltaic (PV) systems on selected municipal buildings. A report summarizing the financial and environmental impacts will be produced and reviewed for consideration by Administration and then provided to Council in Q3 2025.

Moreover, the Town will be conducting a Waste to Energy study through Essex Energy, an affiliate of Essex Power Corporation. The study will explore methods to collect and utilize wasted heat energy, including electricity generation, hydrogen production, and energy storage, while assessing the viability of a sustainable business case.

Further energy conservation and modernization initiatives will be implemented through annual capital planning, focusing on upgrading systems in buildings and parks. These efforts aim to reduce energy consumption and lower emissions, reinforcing the Town's commitment to sustainability.

The Town is a recipient of a grant through the Ministry of Transportation Ontario (MTO) ChargeON program and has partnered with JULE Power to install Level 3 charging stations for installation by end Q3. This initiative underscores the Town's commitment to sustainability and aims to promote the adoption of electric vehicles. By providing fast and efficient charging options, the Town hopes to encourage more residents to switch to eco-friendly transportation, reducing carbon emissions and fostering a greener community. Locations provided to the MTO in the grant submission included Town Hall and Town parking lots at the Legion and BIA office. Administration is in the process of finalizing the locations with the MTO.

Administration will continue to annually review and validate the ECDM Plan and the recommended strategies contained within, ensuring that the plan remains accurate and

effective in addressing the Town's environmental and climate-related goals. This ongoing review process will help identify any necessary adjustments and ensure the successful implementation of the recommended measures.

The Province of Ontario has updated key legislation and policies emphasizing the importance for municipalities to consider climate change vulnerabilities and risks. This includes the "Provincial Policy Statement, 2020" under the Planning Act, and Ontario Regulation 558/17: Asset Management Planning for Municipal Infrastructure. These policies direct municipalities to assess infrastructure risks and vulnerabilities to climate change and identify actions and investments to address these challenges through adaptation opportunities

Hence, a Climate Risk Assessment will be conducted in 2025 for the Town's infrastructure and assets. This assessment will identify which infrastructure and assets are most at risk from local and regional climate hazards. The results will provide a foundation for developing adaptation actions to mitigate these risks.

The Climate Risk Assessment will also inform a Climate Adaptation Plan. This plan will provide a comprehensive approach towards climate adaptation with tactics to address the Town's immediate needs regarding climate vulnerability and risks while also providing a road map for future actions.

Consultations

Financial Services
Matrix Solutions Inc.
Essex Powerlines Corporation
Essex Energy Corporation
Wattsworth Energy

Financial Implications

Recommended and future initiatives are outlined in Attachment 1.

Initiatives proposed may require investments from each department that are incremental to current five (5) year capital budgets and/or operating budgets. Investments will be evaluated based on anticipated cost benefit results and Council authorization sought, as needed.

A Climate Risk Assessment will be pursued in 2025, followed by the development of a Climate Adaptation Plan. As the plan evolves, a strategy will be designed to minimize the financial impact on existing capital budgets by leveraging existing plans, planned asset replacement cycles, external funding, and internal reserves to support sustainability initiatives. Additionally, the decreasing costs of advanced technologies

and renewable alternatives are making investments in energy-efficient asset replacements more affordable.

Link to Strategic Priorities

Applicable	2023-2026 Strategic Priorities
<input checked="" type="checkbox"/>	Sustainable Growth: Achieve prosperity and a livable community through sustainable growth.
<input type="checkbox"/>	Community Health and Inclusion: Integrate community health and inclusion into our places and spaces and everything we do.
<input type="checkbox"/>	Service Experience: Enhance the experience of Team Tecumseh and our citizens through responsive and respectful service.

Communications

Not applicable

Website Social Media News Release Local Newspaper

This report has been reviewed by Senior Administration as indicated below and recommended for submission by the Chief Administrative Officer.

Prepared by:

Daniel Wolicki
Manager Facilities & Energy Management

Reviewed by:

Beth Gignac, BA Hons
Director Community & Recreation Services

Recommended by:

Margaret Misek-Evans, MCIP, RPP
Chief Administrative Officer

Attachment Number	Attachment Name
1	Town of Tecumseh 2024 ECDM Plan Update