MUNICIPALITY OF CALLANDER
REPORT TO COUNCIL

REPORT NO. & SUBJECT:	2025-014 ADMIN: Energy Conservation and Demand Management Plan
MEETING DATE:	January 28, 2025
SUBMITTED BY:	Cindy Pigeau, Municipal Clerk/Treasurer
APPROVED BY:	Ashley Bilodeau, Senior Municipal Director

RECOMMENDED COUNCIL MOTION

That Council acknowledge receipt of Report No. 2025-014 ADMIN: Energy Conservation and Demand Management Plan, and

That Council direct staff to bring forward for consideration, a By-law to adopt the Energy Conservation and Demand Management Plan at the next regularly scheduled Council meeting.

EXECUTIVE SUMMARY

Municipalities are required to report on energy use and greenhouse gas emissions and to develop a plan for conservation and managing energy use. Previously the requirement was under the Green Energy Act, but is now required under the Electricity Act, 1998. This is the second update to the Plan, and an update was legislatively required by July 1, 2024.

PLAN CONFORMANCE

The requirements under Ontario Regulation 25/23 of the Electricity Act note that municipal plans for energy conservation and demand management were required by July 1, 2024. The adoption of this Plan will bring the Municipality into compliance with this legislation. The plan only relates to municipally owned heated and/or cooled facilities and water and wastewater treatment facilities.

FINANCIAL / STAFFING CONSIDERATIONS

There is often long-term cost savings associated with energy reduction projects. There are also financial requirements, for both human resources and for operating and capital funding to support successful implementation.

BACKGROUND

The Municipality had an Energy Conservation and Demand Management Plan from 2015-2019. Unfortunately, the Plan was never updated for the next five-year timeframe. This is likely a result of staff turnover during the 2018-2021 timeframe and other, more competing priorities taking precedence. Staff have drafted a 2024-2029 Plan to ensure consistency with current legislation.

ANALYSIS / RATIONALE FOR RECOMMENDATION

The Plan is attached for Council's review. Given this is a mandatory requirement imposed by higher levels of government, it is recommended that the Plan be approved, as drafted.

ALTERNATIVES FOR CONSIDERATION

The only option available to Council is to suggest amendments to the Plan and to bring the Plan back for adoption with the requested changes. Failure to adopt a Plan would result in the Municipality being out of compliance with provincial legislation.

CORRESPONDENCE

Tim McKenna, Manager of Operations

NEXT STEPS

The Plan will be made available online, once adopted, as required by legislation.

APPENDICES / SCHEDULES

Attachment: Draft Energy Conservation and Demand Management Plan

Conservation and Demand Energy Management Plan 2024-2029

Ontario Regulation 25/23 mandates that public sector organizations in Ontario develop and implement comprehensive strategies for energy conservation and demand management.

The regulation requires these organizations to report their energy consumption data and outline plans to reduce energy usage and promote efficiency measures. By adhering to this regulation, public sector entities contribute to provincial energy goals, reduce greenhouse gas emissions and lower operational costs. A copy of the O. Reg. 25/23 is attached to this Plan.

As a Broader Public Sector (BPS) organization, the Municipality of Callander is required to develop a Conservation and Demand Management Plan and update the same every five years.

Goals:

1. Maximize fiscal resources and avoid cost increases through direct and indirect energy savings.
2. Reduce the environmental impact of the Municipality's operations.

Section 1: Annual Energy Consumption (2024)

As of July 1, 2024, the Municipality has twelve (12) facilities subject to annual reporting under O. Reg. 23/25, categorized by facility type, including:

- Administrative offices and related facilities;
- Building or facilities related to the treatment of water or sewage;
- Cultural facilities, indoor recreational facilities and community centres;
- Fire stations and associated offices and facilities; and
- Storage facilities where equipment or vehicles are maintained, repaired or stored.

Table 1 outlines the Municipality's most recent energy consumption data submitted to the Ministry of Energy for the 2023 reporting period, serving as a baseline for proposing new conservation measures and energy reductions over the next five years.

Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	Emissions (GHG – kg)
Callander Community Centre	Recreation	78,142	65,955	13,187	
Callander Museum and Art Gallery	Cultural	21,847	16,026	5,821	
Fire Hall and Administrative Building	Emergency Services & Administrative	52,976	46,375	6,601	
South Shore Community Centre	Recreation	5,697	5,697	N/A	
Callander Public Library	Recreation	N/A	N/A	N/A	N/A
Medical Centre	Administrative	127,742	124,853	2,889	
Sewage Lagoons	Wastewater				
Water Treatment Plant	Water	174,917	158,269	16,648	
Operations Garage	Administrative	44,181	33,701	10,480	
Operations Trailer	Administrative	17,371	17,371	N/A	
Callander Fire Station No. 2	Emergency Services	3,383	3,383	N/A	
Satellite Office	Administrative	6,715	5,428	1,287	

Figure 1 shows the total energy use (eKwh) by energy type for 2023 data. This figure includes all known municipal facilities that use energy (electrical and/or natural gas).

Section 2: CDM Plan Implementation

Completed Energy Projects (2014-2019 CDM Plan)

A number of projects were identified in the 2014 CDM plan as a priority for implementation within Municipal facilities over a five-year period.

Table 2 provides a summary of the conservation initiatives implemented between 2014-2019. Table 3 provides additional energy conservation measures that were initiated and completed within the 2019-2024 period.

Table 2: Energy Conservation Measures Identified in 2014-2019 Plan

Description of Measure	Facility	Cost of Implementation	Estimated Energy Savings (kWh/yr)2	Completion Year
Use Setbacks on Programmable Thermostats	Community Centre	$750	Unknown at this time	2018
Replace rooftop HVAC units servicing the event hall	Community Centre	$20,000	Unknown at this time	2018
Replace T12 lighting in viewing area, change rooms and office space	Community Centre	Unknown	Unknown at this time	2018
Install Occupancy Sensor	Community Centre	Unknown	Unknown at this time	2018
Upgrade gymnasium area, bar space and full service kitchen	Community Centre	Unknown	Unknown at this time	2018
HVAC system upgrade	Administration Building/Fire Hall	$10,000	Unknown at this time	2019
Replace T12 Lighting	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Washroom Lighting	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Retrofit Exit Signs	Administration Building/Fire Hall	$2,500	Unknown at this time	2016

Install Occupancy Sensors	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Replace Fire Hall Unit Heaters	Administration Building/Fire Hall	$5,000	Unknown at this time	2017
Seal Hose Tower Door	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Install Programmable Thermostat in Training Area	Administration Building/Fire Hall	$1,000	Unknown at this time	2018
Delamp Fixtures in Training Area	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Install occupancy sensors in the training room and garage area	Administration Building/Fire Hall	Unknown	Unknown at this time	Incomplete
Upgrade lights to T5	Operations Quonset building	$5,000	Unknown at this time	2017
Upgrade Streetlights to LED	Urban area	$110,000	Unknown at this time	2016
Upgrade Water Treatment Plant	Water Treatment Plant	Unknown	Unknown at this time	Not applicable

Table 3: Energy Conservation Measures That Have Taken Place Since 2019

Description of Measure	**Facility**	**Cost of Implementation**	**Estimated Energy Savings (kWh/yr)2**	**Completion Year**
Replacement of 12x 400W HPS shop lights with LED c/w motion sensors	Operations garage	$6,250.00	11,844	2021

Replacement of 6x T12 fluorescent fixtures with LED	Operations trailer	$1,275.00	337	2021
Replaced 2x electric baseboard heaters with micro furnaces	Operations trailer	$1,605.52	Unknown	2024
Replace T12 Lighting in Garage Area	Administration Building/Fire Hall	$5,000	Unknown at this time	2020
Replace 1000W HPS lights in Bill Barber Rink with LED	Bill Barber Rink	$20,000	Unknown at this time	2019
Replace T12 fixtures with LED lighting	Medical Centre	$10,000	Unknown at this time	2019
Replace T12 and incandescent lighting with LED	Callander Museum	$8,000	Unknown at this time	2019
Upgraded boilers and hot water heaters	Callander Museum	$15,000	Unknown at this time	2022

Comparison of Energy Consumption (2019-2023)

Comparing energy consumption is essential for assessing performance, setting goals, monitoring progress, and making informed decisions to improve energy efficiency and reduce costs.

For the 2024 CDM Plan, 2019 and 2023 were chosen to compare energy consumption and emission.

Table 4: 2020 Corporate Facility Energy Consumption and Emissions by Facility Type

Facility Type	Total Energy	Electricity	Natural Gas	Emissions
Administrative	42,007.60	23,982.50	18,025.10	36,083.82
Cultural	24,404.18	18,240.00	6,164.18	12,118.34
Emergency Services	27,695.61	23,982.50	3,713.11	7,630.41
Recreation	83,403.70	69,875.00	13,528.70	27,355.90

Water/ Wastewater	119,445.52	94,957.00	24,488.52	48,715.12
Municipal Totals	296,956.61	231,037.00	65,919.61	131,903.59

Table 5: 2023 Corporate Facility Energy Consumption and Emissions by Facility Type

Facility Type	Total Energy	Electricity	Natural Gas	Emissions
Administrative	215,782.00	199,112.50	16,669.50	100.95
Cultural	21,847.00	16,026.00	5,821.00	73.1
Emergency Services	26,488.00	23,187.50	3,300.50	9.85
Recreation	111,327.00	98,140.00	13,187.00	17.10
Water/ Wastewater	270,288.03	253,640.03	16,648.00	39,793.80
Municipal Totals	645,732.03	590,106.03	55,626.00	39,994.80

Based on Table 4 and 5, the following decreases from 2020 to 2023 reported energy data can be noted:

- Total Emissions decreased by 91,908.79 even with an increase in total energy consumption.

The following increases from 2020 to 2023 can be noted:

- Total Energy Consumption increased by 348,775.42.

Section 3: Energy Conservation Strategies (2024-2028)

The Municipality will implement the following strategies over the period of 2024-2028:

1. Policies and procedures: All policies and procedures are to be developed with the inclusion of an energy conservation and efficiency lens.
2. Procurement: outline requirements for procurement to ensure that the municipality strives for energy efficiency and cost-effective equipment.
3. Building: considerations to ensure that energy efficient and cost-effective design is utilized for the project.
4. Energy Monitoring: continue to complete detailed energy consumption comparisons monitoring reviews to describe existing conditions and future opportunities to address inefficiencies.

5. Energy Training and Engagement: providing staff training opportunities to increase technical knowledge to ensure an "energy conservation and efficiency" lens for all municipal decisions. The training and engagement initiatives will broaden the number of staff familiar with energy conservation and efficiency concepts and technologies across all municipal operations.

Comprehensive Energy Audit of Municipal Facilities

It is recommended that the Municipality undertake a comprehensive energy audit of all municipal facilities required to report energy consumption under O. Reg. 23/25 during the 2024-2028 period to evaluate energy consumption, identify areas of energy waste or inefficiency, and recommend cost effective measures to improve energy efficiency. The Energy Audit shall provide the following information:

1. Assess Energy Usage: Determine how and where energy is being used within the facility, including electricity, natural gas, water, and other energy sources.
2. Identify Opportunities for Improvement: Identify opportunities to reduce energy consumption and costs through various measures, such as upgrading equipment, improving building envelope efficiency, optimizing HVAC systems, and implementing energy management strategies.
3. Quantify Potential Savings: Estimate the potential energy savings and associated cost savings that could be achieved by implementing energy efficiency measures.
4. Prioritize Recommendations: Prioritize energy efficiency measures based on their potential impact, cost-effectiveness, and return on investment (ROI).
5. Evaluate Technical Feasibility: Assess the technical feasibility of implementing recommended energy efficiency measures, considering factors such as equipment compatibility, space constraints, and operational requirements.
6. Consider Financial Incentives: Identify available financial incentives, rebates, or financing options that can help offset the cost of implementing energy efficiency measures and improve the overall economics of the project.
7. Support Decision-Making: Provide decision-makers with the information and analysis needed to make informed decisions about investing in energy efficiency improvements and implementing energy management initiatives.

The findings and recommendations of an energy audit will serve as a roadmap for implementing energy-saving measures and improving the overall energy performance of municipal facilities. The recommendations can be incorporated in both operating maintenance and capital tendering processes.

It should also be noted that funding is often available for projects related to energy audits, which should be utilized by the Municipality.

Energy Reduction Target

Once the energy strategies have been implemented and the findings of a comprehensive energy audit are known, the Municipal can set an appropriate reduction target at that time. An energy reduction target of 1-5% reduction target was identified in the 2014-2019 CDM Plan, it is assumed that the target reduction for the 2024 CDM Plan, once identified and verified, will fall within this range based on energy consumption data trends.

Section 4: Proposed Energy Projects (2024 CDM Plan)

Table 6 outlines the proposed energy projects planned for execution over the next five years. These initiatives were chosen following consultation with various departments and projects identified by various studies and reports. The list comprises a mix of measures, including some previously included in the CDM Plan that were not completed. While the direct energy savings from these initiatives cannot be precisely determined at this stage, it is anticipated that if implemented within the next five years, significant energy savings will be realized.

Table 6: Proposed Energy Conservation Proposed for Completion 2024 to 2028

Description of Measure	Facility	Estimate Cost of Implementation	Estimated Energy Savings (kWh/yr)	Proposed Completion Year
Replace Operations Garage and Operations Trailer	Operations	$3,500,000	To be determined	2025-2026
Upgrade lighting and heating	Administration Office and Firehall #1	$15,000	Unknown	2025-2028

Section 5: Looking Ahead

Since the last Plan update, the Municipality of Callander successfully reduced total emissions by 91,908.79. The newly proposed conservation measures outlined in this plan

will continue to steer the Municipality towards energy reduction over the next five years. While the goal is to implement many of these initiatives early in the five-year period, adjustments may occur as new opportunities emerge, and financial support is secured. Ultimately, the 2024 CDM plan aims to support the Municipality in lowering energy consumption and greenhouse gas emissions, resulting in cost savings and a diminished impact on the environment.