

TOWNSHIP OF MACDONALD, MEREDITH AND ABERDEEN ADDITIONAL



CONSERVATION AND DEMAND MANAGEMENT PLAN

2024-2028

EXECUTIVE SUMMARY

The Township of Macdonald, Meredith and Aberdeen Additional is required to comply with Ontario Regulation 507/18 (Broader Public Sector: Energy Reporting and Conservation Demand Management Plans) under the Electricity Act (1998), as the transferred authority in December 2018. Previously, the preparation of a conservation and demand management (CDM) plan was mandated by Ontario Regulation 397/11 (Energy Conservation and Demand Management Plans) under the Green Energy Act (2009). The purpose of this CDM plan is to satisfy the requirements as described in O. Reg 507/18.

BACKGROUND

The former Ontario Green Energy Act Regulation 397/11 (now Ontario Regulation 25/23) requires municipalities to report their 'goals and objectives' for conserving and reducing energy consumption and managing its demand for energy. Every public agency shall publish on its website and intranet site a summary of:

- Its annual energy consumption and greenhouse gas emissions for its operations.
- A description of previous, current, and proposed measures for conserving and reducing the amount of energy consumed by the public agency's operations, including a forecast of the expected results of current and proposed measures.

The CDM plan must include all municipal buildings or facilities as described under Table 1 in O. Reg 507/18:

1. Administrative offices and related facilities, including municipal council chambers.
2. Public libraries.
3. Cultural facilities, indoor recreational facilities, and community centers, including art galleries, performing arts facilities, auditoriums, indoor sports arenas, indoor ice rinks, indoor swimming pools, gyms, and indoor courts for playing tennis, basketball, or other sports.
4. Ambulance stations and associated offices and facilities.
5. Fire stations and associated offices and facilities.
6. Police stations and associated offices and facilities.
7. Storage facilities where equipment or vehicles are maintained, repaired, or stored.
8. Buildings or facilities related to the treatment of water or sewage.
9. Parking garages.

A total of 12 municipal buildings and facilities are reportable under the regulation. The municipal energy profile includes electricity purchased from Algoma Power, natural gas purchased from Enbridge Gas, and propane purchased from Superior Propane.

APPROACH TO ENERGY CONSERVATION

Commitment

Municipal Commitment:

We will allocate the necessary resources to develop and implement a strategic energy management plan that will reduce our energy consumption and its related environmental impact.

Vision:

We exercise stewardship in our use of finite energy resources to demonstrate leadership, optimize our delivery of services, and enhance the overall quality of life in our community.

Goals:

To continuously improve the energy efficiency of our facilities and processes to reduce our operating costs, our energy consumption, and the concomitant greenhouse gas emissions.

Overall Target:

We will reduce our consumption of fuels and electricity in all municipal operations by an average of 1% per year between now and 2028.

Objectives:

1. To implement energy audits on all municipal facilities during the next five years.
2. To reduce total energy consumption in municipal facilities, normalized to weather conditions, by 2% over the next three years.
3. To reduce energy consumption in the municipal recreation complex by 5% by 2028.

Strategies for Energy Conservation and Demand Management

Over the next 5 years, the Municipality is committed to prioritizing the management of energy consumption by:

- Implementing energy management systems across municipal facilities
- Integrating energy considerations into planning and development processes
- Fostering partnerships with stakeholders to support energy-saving initiatives.
- Promoting energy-saving habits among staff and residents by providing training to staff on energy efficiency practices and implementing energy conservation campaigns for our community members.
- Establishing a system for regular monitoring and reporting of energy usage and GHG emissions and submitting annual reports as required by Ontario Regulation 507/18

Strategic Asset Management Planning

Infrastructure planning and investment should minimize the impact of infrastructure on the environment, maintain ecological and biological diversity, and ensure resilience to the effects of climate change.

Energy Leader

We will designate clear leadership and overall responsibility for corporate energy management.

Municipal Level

We will develop business procedures and communication programs and implement them methodically according to planned timelines within the resource constraints that apply.

Asset Level

We will use department and facility energy team representatives to facilitate the implementation of facility-level business procedures and communication initiatives, including energy performance reporting.

Project Updates

The Township participated in the Save on Energy program, which upgraded lighting in our municipal buildings to energy-efficient LEDs. We undertook a significant renovation project on our Sportsplex, which included replacing the roof and upgrading the insulation inside. The insulation upgrade has been particularly beneficial to our ECO Ice system for the ice rink, creating a more stable and controlled environment. Additionally, we have upgraded to energy-efficient appliances at our community hall.

Future Energy Conservation Project Considerations (2024-2028)

1. **LED Streetlight Retrofit:** Continue energy-efficient upgrades such as changing lighting to LED, improving insulation and windows, and upgrading older appliances to energy-efficient models.
2. **Building Energy Audits and Retrofits:** Conduct audits of municipal buildings to identify energy-saving opportunities such as upgrading HVAC systems, improving insulation, and installing energy-efficient lighting and controls.
3. **Community Energy Outreach and Education:** Develop programs to educate residents and businesses about energy conservation practices, promoting behavior change and energy efficiency.
4. **Water Conservation Measures:** Implement measures to reduce water consumption in municipal operations, such as upgrading irrigation systems and promoting water-efficient landscaping.
5. **Green Building Standards and Policies:** Adopt and enforce green building standards for new municipal construction and renovations, promoting energy efficiency and sustainability in building design and operations.

CONCLUSION

The Township of Macdonald, Meredith and Aberdeen Additional is committed to meeting the requirements of Ontario Regulation 507/18 and demonstrating leadership in energy conservation and demand management. Through our comprehensive CDM plan, we have set clear goals and strategies to reduce energy consumption, enhance energy efficiency, and lower greenhouse gas emissions across our municipal facilities. Our commitment to sustainability and responsible energy use is evident in our ongoing projects, including the renovation of our Sportsplex and participation in energy efficiency programs.

By continuing to invest in energy-efficient upgrades, promoting energy-saving habits, and regularly monitoring our progress, we aim to achieve our targets and contribute to a more sustainable future. We look forward to working with our community, staff, and partners to realize these goals and enhance the quality of life for all residents. Our efforts will not only reduce our environmental impact but also generate long-term financial savings, demonstrating the value of sustainable energy management for our Township.

Summary of Current Energy Consumption and GHGs reported for 2023

MUNICIPAL OFFICE

Energy Consumption and Energy Use Intensity (EUI)				
Site EUI 35.2 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison	
	Electric - Grid (kBtu)	70,272 (100%)	National Median Site EUI (kBtu/ft ²)	62
			National Median Source EUI (kBtu/ft ²)	113.5
			% Diff from National Median Source EUI	-43%
Source EUI 64.4 kBtu/ft ²			Annual Emissions	
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year)	1

MUNICIPAL GARAGE

Energy Consumption and Energy Use Intensity (EUI)				
Site EUI 89.8 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison	
	Electric - Grid (kBtu)	66,255 (58%)	National Median Site EUI (kBtu/ft ²)	69.5
	Natural Gas (kBtu)	48,482 (42%)	National Median Source EUI (kBtu/ft ²)	104.6
			% Diff from National Median Source EUI	29%
Source EUI 135.1 kBtu/ft ²			Annual Emissions	
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year)	3

SPORTSPLEX

Energy Consumption and Energy Use Intensity (EUI)				
Site EUI 29 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison	
	Electric - Grid (kBtu)	471,023 (74%)	National Median Site EUI (kBtu/ft ²)	78
	Natural Gas (kBtu)	166,280 (26%)	National Median Source EUI (kBtu/ft ²)	127
			% Diff from National Median Source EUI	-63%
Source EUI 47.2 kBtu/ft ²			Annual Emissions	
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year)	13

ECHO BAY HALL

Energy Consumption and Energy Use Intensity (EUI)				
Site EUI 71.5 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison	
	Propane (kBtu)	18,357 (9%)	National Median Site EUI (kBtu/ft ²)	88.7
	Natural Gas (kBtu)	155,753 (75%)	National Median Source EUI (kBtu/ft ²)	104.6
			% Diff from National Median Source EUI	-19%
Source EUI 84.3 kBtu/ft ²			Annual Emissions	
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year)	10

SYLVAN VALLEY HALL

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 57.2 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Propane (kBtu)	93,983 (87%)	National Median Site EUI (kBtu/ft ²) 94.4
	Electric - Grid (kBtu)	13,966 (13%)	National Median Source EUI (kBtu/ft ²) 104.6
			% Diff from National Median Source EUI -40%
Source EUI 63.3 kBtu/ft ²			Annual Emissions
			Total (Location-Based) GHG Emissions 6 (Metric Tons CO ₂ e/year)

FIREHALL

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 87.3 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electric - Grid (kBtu)	23,040 (10%)	National Median Site EUI (kBtu/ft ²) 93.9
	Natural Gas (kBtu)	206,566 (90%)	National Median Source EUI (kBtu/ft ²) 106.8
			% Diff from National Median Source EUI -7%
Source EUI 99.3 kBtu/ft ²			Annual Emissions
			Total (Location-Based) GHG Emissions 11 (Metric Tons CO ₂ e/year)

ENVIRONMENTAL CENTER

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 176.5 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Natural Gas (kBtu)	337,806 (31%)	National Median Site EUI (kBtu/ft ²) 38.7
	Electric - Grid (kBtu)	759,730 (69%)	National Median Source EUI (kBtu/ft ²) 61.7
			% Diff from National Median Source EUI 356%
Source EUI 281.1 kBtu/ft ²			Annual Emissions
			Total (Location-Based) GHG Emissions 24 (Metric Tons CO ₂ e/year)

WATER TOWER

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 227.3 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electric - Grid (kBtu)	51,599 (100%)	National Median Site EUI (kBtu/ft ²) 57.1
			National Median Source EUI (kBtu/ft ²) 104.6
			% Diff from National Median Source EUI 298%
Source EUI 416 kBtu/ft ²			Annual Emissions
			Total (Location-Based) GHG Emissions 0 (Metric Tons CO ₂ e/year)

LANDFILL

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 48 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electric - Grid (kBtu)	17,536 (100%)	National Median Site EUI (kBtu/ft ²) 57.1
			National Median Source EUI (kBtu/ft ²) 104.6
			% Diff from National Median Source EUI -16%
Source EUI 87.9 kBtu/ft ²			Annual Emissions
			Total (Location-Based) GHG Emissions 0 (Metric Tons CO ₂ e/year)

TOWER LAKE LODGE

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 3.1 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electric - Grid (kBtu)	3,932 (100%)	National Median Site EUI (kBtu/ft ²) 57.1
Source EUI 5.6 kBtu/ft ²			National Median Source EUI (kBtu/ft ²) 104.6
			% Diff from National Median Source EUI -95%
			Annual Emissions
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year) 0

LENDING LIBRARY/MUSEUM

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 183.5 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Natural Gas (kBtu)	135,902 (94%)	National Median Site EUI (kBtu/ft ²) 150.1
Source EUI 203.8 kBtu/ft ²	Electric - Grid (kBtu)	9,461 (6%)	National Median Source EUI (kBtu/ft ²) 166.6
			% Diff from National Median Source EUI 22%
			Annual Emissions
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year) 7

MILLIGAN GAZEBO

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 4.3 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electric - Grid (kBtu)	1,500 (100%)	National Median Site EUI (kBtu/ft ²) 57.1
Source EUI 7.8 kBtu/ft ²			National Median Source EUI (kBtu/ft ²) 104.6
			% Diff from National Median Source EUI -92%
			Annual Emissions
			Total (Location-Based) GHG Emissions (Metric Tons CO ₂ e/year) 0