



Energy Conservation & Demand Management Plan **July 1, 2024 – June 30, 2029**

Declaration of Commitment: Council Resolution 122-24

THAT we approve the Energy Conservation and Demand Management Plan July 1, 2024 – June 30, 2029 and that it be submitted for compliance with Ontario Regulation 25/23, FURTHER THAT we allocate the necessary resources to implement the Energy Conservation and Demand Management Plan to reduce energy consumption and its related environmental impact.

Vision

The Township of Machar is “Always in Season”. We’re located at the northern end of Central Almaguin; “It’s Better Here” and we surround the Village of South River. We are proud to have clean lakes and sandy beaches; including Eagle Lake, Bray Lake and King Lake. Mikisew Provincial Park is located in the heart of the Township on the western shores of Eagle Lake.

Policy

Energy conservation:

The Township of Machar will be a good example in reducing energy consumption and greenhouse gas emissions by promoting sustainable, innovative corporate and community-based energy initiatives. The Township of Machar has shown leadership in the promotion and development of energy efficient systems that are compatible with our asset management and land use planning objectives.

THE GREEN ENERGY ACT

The Province of Ontario has developed the Green Energy Act (GEA) as “a mechanism to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs” (Ministry of Energy, 2012). A new regulation under the GEA will require public agencies, including municipalities, to:

- Report annually on energy use and GHG emissions beginning July 1, 2013 and post that information online; and,
- Develop five-year energy conservation plans starting July 1, 2014, and post those plans online.

By completing a baseline of energy use and the associated greenhouse gas (GHG) emissions (Appendix A) as well as developing a plan for implementation the Township of Machar is setting the stage to comply with Provincial regulations.

Energy Team

As of 2014, the following positions will act as energy efficiency team members: Superintendent of Public Works, Treasurer/Deputy Clerk, Clerk Administrator, and Council. Members will meet on a yearly basis for plan review and audit purposes.

Goals

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

Overall Target

The Township of Machar will reduce our consumption of fuels and electricity in all municipal operations by 1-2% between 2014 and 2019, from 2011 levels (baseline year). Facilities included in the base year reporting include the municipal office, the municipal garage, and municipal landfill.

Objectives

1. Improve the Township staff's understanding of energy consumption and increase staff awareness and motivate staff to use energy more efficiently by improving awareness of greenhouse gas emissions; to report energy performance changes and improvements; and to recognize the relationship of an anticipated goal of 1-2% reductions through actual energy consumption.
2. To undertake/implement energy audits on all municipal facilities during the next five years;
3. To reduce total energy consumption in municipal facilities, normalize to weather conditions, by 1-2% over the next five years;

How We Managed Energy (2011 Baseline)

Administration: 1232 sq. ft., the office used 26,910.00 kWh in 2011.

25,797.69 kWh in 2012.

24,522 kWh in 2017.

27,048 kWh in 2018.

The municipal office holds a high expectation already for energy conservation:

- lighting is turned off unless in direct use;
- shades are drawn to combat the sun in the warm weather and the draft in the cold months;
- heating and cooling is turned down during closed hours.

Public Works – Garage: 2,800 sq. ft., used 19,835.00 kWh and 10,588.0 Lt in heating oil in 2011.

17,847.11 kWh and 11,020.7 Lt in heating oil in 2012.

13,112 kWh and 9598.7 Lt in heating oil in 2017.

16,408 kWh and 8661.4 Lt in heating oil in 2018.

- garage doors are closed when the weather is extreme and lights are turned off when unoccupied.

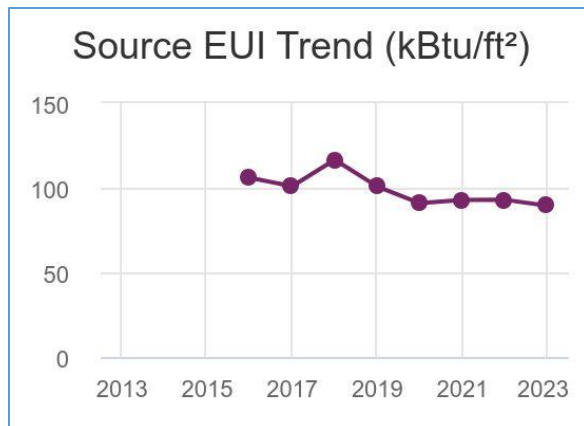
Public Works – Landfill: 2,400 sq. ft., used 14,215 kWh in 2011.

11,354 kWh in 2012.

9,738.9905 kWh in 2017.

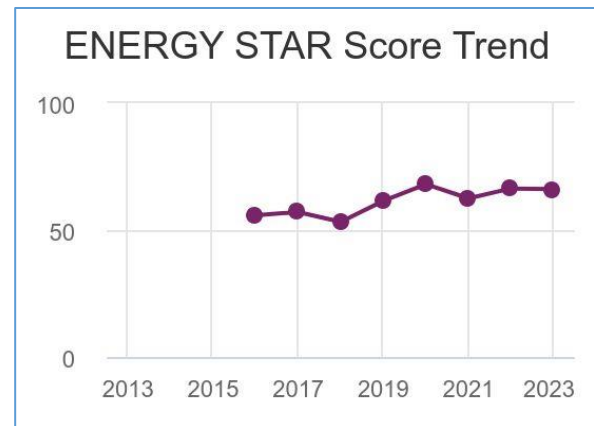
11,060.8801 kWh in 2018.

- florescent, incandescent and sodium lighting remains off with the exception of winter mornings and evenings;
- only office and lunch room are heated, with a thermal door to contain the heat;
- electric baler is turned on only when used, not left in idle.



Source Energy Use is the total amount of raw fuel that is required to operate your property. Source EUI (Energy Use Intensity) is Source Energy divided by the property's Gross Floor Area.

portfolioenergymanager.energystar.gov



The ENERGY STAR Score is a measure of how well your property is performing relative to similar properties, when normalized for climate and operational characteristics.

How We Manage Energy Today

The management of energy consumption and the energy performance of our facilities and equipment are the responsibilities of all Departments with the assistance of the Administration and Council.

Administration: 1232 sq. ft., the office used 25,527 kWh in 2022.
23,266 kWh in 2023.

Public Works – Garage: 2,800 sq. ft., used 20,399 kWh and 6265.3 Lt in heating oil in 2022.
15,665 kWh and 3677.6 Lt in heating oil and
moved to 5047.1 Lt in propane in 2023.

Public Works – Landfill: 2,400 sq. ft., used 12,895.1088 kWh in 2022.
12,139.6422 kWh in 2023.

How We Would Like To Manage Energy “Tomorrow”

The Township of Machar prides itself on its continuous commitment to efficiency and environmentally conscious planning. In 2012 there was a Township wide increase of 571.125 Kg (1.6%) due to Garage heating oil. The Township of Machar has seen an 11% reduction overall in emissions between 2011 and 2019 as both structural and behavioural changes have been implemented.

How Do We Plan To Continue Accomplish These Goals

Structurally

We have replaced all street lights in the Township, heating in the Council Chambers, lighting in the three facilities and updated Building Condition Assessments.

- The Administration Building and Public Works Garage previously operate 3 HPS 70W street lights. A turn-key LAS/EnergyTerm/Creo streetlight replacement for the Administration Building and Public Garage was completed in 2014. The CREE-XSP1-38W streetlights should produce a savings of approx. 2003.77 kWh in 2015.

- The Administration Building has upgraded its Council Chambers heating systems from baseboard heaters to wall units.
- Small Business Lighting incentive provided by hydro one's save-on-energy upgraded less efficient lighting to save approx. 12,846 kWh in 2015.
- The Public Works Garage oil furnace was replaced by radiant heating in 2023, installed above the truck fleet so there is less warm up time on the vehicles before heading out in the winter.
- The Public Works Garage switched out fluorescent lights for LED in 2023.
- The Landfill Building insulation was repaired in 2023.

Behaviourally

The Township staff

- Continue to implement the habits instated in 2014.

Cost and Savings Estimates

Streetlight upgrade cost the Township \$898.00/light and is said to save an estimated 667 kWh/light annually.

In 2015 the Hydro One's Save On Energy program cost the Township \$1,038.97 and saved an average of 8,124.99 kWh annually from 2015-2018.

Future

The savings from this plan will be realized indefinitely, as behavioural measures shall remain a priority. The plan shall evolve with time as knowledge and technology dictate goals and practices. The Township hopes to maintain the 1-2% reduction achieved.

2023 Annual Energy Report Attached.

Annual Energy Report (2023)

Date Downloaded: 02/09/2024 02:40 PM EST

Date Generated: 02/09/2024 02:39 PM EST

Number of properties in report: 3

Portfolio Manager Property ID	Property Name	Portfolio Manager Parent Property ID	Parent Property Name	Year Ending	Address 1	City	Postal Code	Property GFA - Self- Reported (ft²)	Primary Property Type - Self Selected	Number of Buildings
24369318	Public Works	Not Applicable: Standalone Property	Not Applicable: Standalone Property	12/31/2023	65 Municipal Rd N	South River	POA 1X0	2800	Office	1
24369319	Landfill	Not Applicable: Standalone Property	Not Applicable: Standalone Property	12/31/2023	111 Municipal Rd N	South River	POA 1X0	2400	Office	1
24369320	Municipal Office	Not Applicable: Standalone Property	Not Applicable: Standalone Property	12/31/2023	73 Municipal Rd N	South River	POA 1X0	1232	Office	1

Custom Property ID 1 - ID	Custom Property ID 1 - Name	Custom Property ID 2 - ID	Custom Property ID 2 - Name	Custom Property ID 3 - ID	Custom Property ID 3 - Name	Natural Gas Use (therms)	Natural Gas Use (kBtu)	Fuel Oil #1 Use (kBtu)	Fuel Oil #2 Use (kBtu)	Propane Use (kBtu)
Township of Machar	Organization		SubSector	40.0	Weekly Average Hours	Not Available	Not Available	Not Available	135244.8	Not Available
Township of Machar	Organization		SubSector	40.0	Weekly Average Hours	Not Available	Not Available	Not Available	Not Available	Not Available
Township of Machar	Organization		SubSector	40.0	Weekly Average Hours	Not Available	Not Available	Not Available	Not Available	Not Available

Site Energy Use (kBtu)	Source Energy Use (kBtu)	Site EUI (kBtu/ft²)	Source EUI (kBtu/ft²)	Total (Location- Based) GHG Emissions (Metric Tons CO2e)	Total (Location-Based) GHG Emissions Intensity (kgCO2e/ft²)	Electricity Use - Grid Purchase (kWh)	Electricity Use - Grid Purchase (kBtu)	Office - Weekly Operating Hours	Last Modified Date - Property
309770	354132.6	110.6	126.5	18.4	6.6	15665	53449	40	02/09/2024 01:53 PM EST
41420.5	75799.4	17.3	31.6	0.3	0.1	12139.6	41420.5	40	02/09/2024 01:35 PM EST
79383.6	145272	64.4	117.9	0.7	0.5	23266	79383.6	40	02/09/2024 01:39 PM EST

List of All Property Use Types (GFA) (ft²)	Largest Property Use Type
Office (2800.0)	Office
Office (2400.0)	Office
Office (1232.0)	Office