



Energy Conservation & Demand Management Plan Version 3.0

**Township of Greater Madawaska
County of Renfrew**

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Plan Report Versions

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0	June 27, 2014	1.0	Energy Conservation and Demand Management Plan, Evergreen Energy Solutions Ltd.
1	June 28, 2019	2.0	Energy Conservation and Demand Management Plan, Version 2.0 Greenview Environmental Management Limited
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1.0 Introduction

1.1 Background

The Province of Ontario has mandated that public sector agencies monitor, assess, and plan for energy conservation and demand related to their buildings and facilities. Ontario Regulation (O.Reg.) 397/11 was launched requiring municipalities, among other public sector groups (schools, hospitals, etc.), to report their energy consumption annually, and, to assess their energy needs and prepare an energy conservation and demand management plan (Plan) on a minimum, five (5) year frequency. The original reporting for greenhouse gas (GHG) emissions and an initial Plan was prepared by Greenview's partner firm, Evergreen Energy Solutions Ltd. in 2014. In 2019 and current, Greenview Environmental Management Limited (Greenview) has prepared the Township's Plans.

As part of the requirements of the *Electricity Act 1998*, updates to reporting legislation have occurred with O.Reg. 507/18 *Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans* (Appendix A) came into effect in December 2018, and most recently, O.Reg. 25/23 (Appendix A), updating the previous legislation for Plan review and reporting. As per the original jurisdiction, the regulation applies to all public sector agencies in Ontario, including municipalities and municipal service boards that operate buildings/facilities that are heated and/or cooled, and those responsible for the treatment or pumping of water or sewage (as applicable to any given entity).

The intent and requirements for the 2024 Plan update are generally consistent with those of the original requirements, plus a 5-year review element. In general, the updated Plan is to include:

- A review of the effectiveness of energy conservation and demand management measures employed by the municipality over the past five-year period.
- Energy-related information relevant to the municipality, including other energy-related plans, strategies, goals, objectives for managing its energy needs, and associated targets.
- Information about any/all renewable energy generating facilities owned by the municipality, and energy generation summaries for each facility and the municipality overall.
- Information about the municipality's consideration of utilizing ground source energy, solar energy, and/or heat pump technologies (thermal, air, water, etc.) in current and/or future measures to conserve energy associated with designated facilities.

Greenview was retained by the Township of Greater Madawaska (Township) to provide an update to the municipality's *Energy Conservation and Demand Management Plan* as required by O.Reg. 25/23.

1.2 Purpose & Scope

The purpose of this Plan is to document the legislated requirements related to the energy conservation and demand management of the Township's buildings/facilities, inclusive of the following scope:

- Review of the Township's past energy consumption and related GHG emissions up to the year 2023 for buildings and facilities in which the municipality conducts its operations from, that are heated or cooled or are related to the treatment or pumping of water or sewage.
- Perform current site reviews all of the Township's buildings/facilities covered under the legislation and document past and current energy conservation measures completed for the eligible facilities.
- Review and propose future measures to conserve and manage the Township's energy consumption throughout its operations, including the capital costs and potential savings estimates for the recommended measures.

- Provide a summary document for interested parties and the Township to review with respect to the various efforts and measures being undertaken to effectively manage energy consumption in municipal building operations.

2.0 Methodology

2.1 Documentation Review

The following documentation was reviewed with respect to the preparation of this Plan.

1. Ontario Regulation 25/23, Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans (Appendix A).
2. *Energy Conservation and Demand Management Plan*, Township of Greater Madawaska, dated June 27, 2014 by Evergreen Energy Solutions Ltd.
3. *Energy Conservation and Demand Management Plan* Version 2.0, Township of Greater Madawaska, dated June 29, 2019 by Greenview Environmental Management Limited.

2.2 Site Visitations / Reviews

On March 14, 2024, personnel from Greenview completed site reviews at the Township's buildings and facilities applicable to the legislation. Any additional buildings that were either newly constructed or newly renovated and would need to be reported on in future energy summaries were additionally reviewed. Site/building photographs were taken to document existing conditions.

For each visit, the following condition items were observed/noted:

- Exterior grounds, including exterior/site lighting.
- Building envelope review, including doors, windows, and other fenestrations of the exterior of the building.
- General review of the heating, ventilation, and air conditioning (HVAC) and domestic hot water systems, and any renewable energy systems.
- Electrical systems, including lighting systems and controls, emergency exit signs and any process pumps, equipment, or monitoring systems.
- Potential opportunities for new energy conservation measures to be considered/employed.
- Water conservation practices and the status of the existing toilets and faucets.
- Existing Energy Star rated appliances and/or office equipment.
- Past or current energy conservation measures utilized by the municipality relative to each building.

2.3 Annual Reporting of GHG Emissions

Per O.Reg. 25/23 (Appendix A), the Township is responsible to report its energy consumption for each eligible building on an annual basis. Reporting is completed through the Energy Star's Portfolio Manager® portal system. Various outputs are generated from the energy consumption data entry, in particular are greenhouse gas (GHG) emissions.

For the Township, available GHG output data since 2011 is provided in the attached Table 1 to this report. Please note that, in some cases, annual data may be absent for any given reason; however, the tabulated data is as complete as possible for the purposes of this Plan, using available sources.

2.4 Energy Management Analysis

As noted in Section 2.3, historical emissions and energy consumption values from the initiation of the program in 2011 to 2023 were sourced from the Ministry's Broader Public Sector (BPS) databases, or as of 2023, from Energy Star Portfolio Manager® (<https://portfoliomanager.energystar.gov>), and the data compiled into the attached Table 1 accordingly.

Considering each building specifically, supported by the related site visits, energy reviews consisted of a particular focus of the site's energy consumption and consequential GHG emission production, with corresponding review of opportunities for identifying measures for reducing energy demand and consumption. Where available and applicable, energy intensity values generated by the BPS or Portfolio Manager data systems were tabulated in Table 1 for review and evaluation. Portfolio Manager data does not directly correlate with historical BPS data; however, relative trends can be deciphered, and with continued monitoring, a more detailed analysis can be performed (i.e. next Plan update in 2029).

Further for each building, a summary was developed based on the past findings and measures Plan and on-site findings, and these are included as Table 2, respective of each building. The tables summarize the status of the past measures as available to Greenview going back to as early as 2011 and through to 2023, and newly proposed measures with the associated estimated implementation costs, and projected annual cost savings per year with a simple return on investment (ROI) calculation for quick reference on the potential value of implementing any given measure. Capital cost and savings cost values have been determined based on a number of sources and references applicable to this type of assessment; however, they are approximate only, and are subject to various influences for change, including utility and/or construction market conditions, material availability, etc., and should be considered a relative guide only without comprehensive energy analysis and current market review.

3.0 Review of Past Goals & Objectives

The objective of the legislation and the development of a Plan is, in general, to provide a mechanism for annual accounting for energy consumption for its buildings and facilities, and to consider measures that can be employed to decrease energy demand in these facilities.

In the Township's 2019 version of the Plan (Version 2.0, June 28, 2019), goals and objectives were established and noted as follows:

Goals		Objectives
1	Reduce energy consumption and GHG emissions in the Township-owned and operated facilities.	Reduce energy consumption by a minimum of 5% over the next reporting period as an aggregate for all municipal buildings.
2	Promote energy conservation for users of Township owned and operated facilities.	Provide promotion, education, and/or training to Municipal staff and facility users with respect to the benefits of energy conservation, explaining the benefits both financially and environmentally to the community.
3	Monitor and review energy consumption in the Township owned and operated facilities.	On an annual basis and after Ministry data normalization, review GHG and energy consumption results with Municipal senior management to review performance. Take measures to meet Ministry-established energy benchmarks for each municipal building.
4	Explore the usage of alternative and renewable energy.	Consider the feasibility of implementing new, alternative, and renewable energy systems in Township owned and operated facilities.
5	Secure funding to implement energy efficiency savings.	Prior to budgeting and implementing an energy conservation measure, research and secure available funding energy-related measures.

For the goals set in the 2019 Plan summarized above, the following results are reported, in general:

1. The Township's energy consumption and associated GHG emissions between 2011 and 2023 for all buildings has generally decreased by a considerable factor, calculated to be in the range of approximately 25 - 50% (depending on data source). This being noted, there has been significant variability in data between approximately 2011 and 2021/2023 in most of the Township's buildings.
2. The actions of the Township over the past 5-year period, with resultant overall energy and GHG emission reductions is a clear indication of understanding and importance of energy conservation and demand management.

3. The Township has utilized their past ECDM Plans (2019, 2014) as a framework for improvements in energy conservation. This process should continue as the benefits are apparent in the GHG and energy performance data.
4. The Township has considered/reviewed opportunities and/or the feasibility of implementing renewable energy technologies for municipally-owned facilities. The Township's Municipal Office retrofit project included air-source heat pump (ASHP) technologies for an example.
5. The Township continues to monitor opportunities for available local/Provincial/Federal funding for the implementation of energy management measures.

4.0 Review of Energy Conservation Measures

4.1 Past Measures & Energy Demand

Included with the 2019 version of the Plan was the development of various recommended measures at the Township's buildings that were anticipated to have beneficial impacts with respect to reducing energy consumption and demand.

In the current 2024 Plan, past measures were reviewed both on site and via data assessment from 2011 to 2023. The past energy usage and the completed measures were analyzed to determine any potential trends and patterns in the building/facility's overall energy usage, and the results are shown in Table 1.

The following was noted when reviewing the past measures and energy demand:

1. Over the past 5 years, the Township has taken energy-based decisions when replacing building heating and cooling systems. Despite the improved efficiency of these upgrades, due consideration of non fossil-fueled heating equipment has had to be deferred, generally due to cost considerations.
2. Exterior lighting updates to more energy-efficient models and controls were generally completed on most buildings, and any outstanding for upgrade have been recommended.
3. Programmable HVAC controls were observed with recent upgrades. This should result in decreased energy consumption over time if properly programmed.
4. Significant energy improvements in building systems and select building envelopes have been made in buildings reviewed under this Plan.
5. In buildings where domestic hot water is used/stored, very few to none of the storage tanks had timers installed to manage energy consumption during building non-operational hours. This measure is considered a "low-hanging fruit" in the energy conservation realm.
6. Since the last review, the majority of the buildings had interior lighting upgrades completed, or were in progress as proposed (end of life upgrades) in the 2019 Plan.

4.2 Historical Data & Trend Analysis

The attached Table 1 presents a summary of energy-related consumption data from 2011 to 2023 converted into GHG emissions, and associated trends. The following is noted from an analysis of the data and associated trends.

1. The Covid-19 pandemic occurred between 2019 and through to approximately 2022. The impacts of the pandemic on data and trends must be considered in any data analysis. Further data collection should provide a better basis for emissions and energy performance.
2. In 2023, the Ministry modified their energy data and monitoring program, moving from the Broader Public Sector (BPS) system to the industry-standard 'Energy Star' system. The result of this change has interrupted the detailed analysis of data and trends until such time as the sufficient data have been catalogued into the Energy Star system over the next 5-year period.
3. Where building upgrades, which include HVAC systems, windows, doors and lighting have been completed, significant reductions in GHG emissions were noted based initial (circa 2011) and most recent 2021 – 2023 reported values.
4. Of the buildings reviewed, the Municipal Office, Griffith Community Hall and the Calabogie Medical Centre have shown increasing GHG and/or energy intensities over the reporting period (2011-2023). A detailed review of these buildings and further analysis and recommendations would most likely have a

very short return on investment related to any findings. Resultant findings and recommendations (proposed measures) at these buildings should be considered further over the next period (2024 - 2029).

4.3 Proposed Measures

Greenview reviewed the eligible municipal buildings for opportunities to reduce energy usage moving forward into the next five-year period, from 2024 to 2029. Consideration was given to the historical data review and trend analysis as noted above.

The following general measures are proposed to the Township for overall consideration. The proposed measures are specifically presented in the respective Table 2 for each building, as attached.

1. Any locations where exterior lighting has not been upgraded to LED, it should be replaced with photocell (or timer) controlled LED fixtures where applicable.
2. Since the last review, the condition of the windows and doors in some municipal buildings has deteriorated and have become a likely source for energy loss.
3. Interior lighting upgrades to LED (preferably) or energy efficient fluorescent tubes (T5 or T8) should be completed at all buildings, as a capital upgrade or on an end of lifecycle replacement.
4. With more buildings now having programmable thermostatic controls since the last review, this measure should be implemented at all buildings with typical human occupancies, and be periodically monitored for appropriate settings.
5. Many of the HVAC systems throughout the Township's buildings have already been converted to newer, more energy-efficient systems and the remainder of the aging systems should be replaced at the end of their operating life (or earlier). Typical lifecycle for an HVAC plant is not more than 15 years, depending on maintenance and operating environment.

4.4 Anticipated Benefits

In general, the implementation of the proposed measures should lead to an overall decrease in GHG emissions and energy consumption of each building. In Table 2, the anticipated benefit for each of the measures is noted as minimal, moderate, or significant. In larger buildings with multiple opportunities for energy conservation, the implementation of a specific measure could have a significant aggregate benefit, both as a cost savings, and a resultant environmental benefit.

5.0 Renewable Energy Considerations

5.1 Existing Renewable Energy Generation

O.Reg. 25/23 requires the Township to consider renewable energy as an alternative in reducing energy consumption and demand for the operation of its buildings/facilities.

In general, the Township does not currently utilize specific sources/types of renewable energy for its buildings. However, the Township Municipal Office does have air-source heat pump (ASHP) systems that provide heating and cooling to the building.

5.2 Ground Source Energy Technology

Ground source heat pump (GSHP) technology harnesses energy from below the ground surface to provide heating in the winter and cooling in the summer. Ground source energy systems utilize the generally constant temperature of the ground in both the winter and summer months. Most ground source energy systems operate as hydronic systems and as the liquid is pumped through the pipes running through the ground, the constant temperature saves energy on both heating and cooling the liquid depending on the season.

The Township should consider GSHP technology during the initial design stages of all planned heating and air conditioning (HVAC) system installations.

5.3 Thermal Air Technology

Thermal air technologies, most commonly in the form of an air source heat pump system, harness and extract energy from exterior ambient air and convert it to heating or cooling depending on time of year and occupant needs.

The Township should consider solar thermal technology during the initial design stages of all planned heating, ventilation and air conditioning (HVAC) or domestic hot water system installations for any existing system replacements, or for any new builds.

5.4 Opportunities for Other New and Emerging Technologies

The feasibility of implementing other types of energy-efficient, low-energy technologies for building servicing, including heat pump technologies, thermal air or thermal water technologies, etc. should be fully considered and evaluated when opportunities arise with building renewals, major renovations, etc.

6.0 Updated Goals & Objectives

With due consideration of the 2019 goals and objectives, and the Township's progress related to them as presented in Section 3.0, the Township has established the following goals and objectives moving forward for the next period.

Goals		Objectives
1	Reduce energy consumption and GHG emissions in the Township-owned and operated facilities.	Reduce GHG emissions and energy consumption over the next Plan reporting period as an aggregate for all municipal buildings, based on decreasing trends.
2	Promote energy conservation for users of Township owned and operated facilities.	Provide promotion, education, and/or training to Municipal staff and facility users with respect to the benefits of energy conservation, explaining the benefits both financially and environmentally to the community.
3	Monitor and review energy consumption in the Township owned and operated facilities.	On an annual basis and after Ministry data normalization, review GHG and energy consumption results with Municipal senior management to review performance. Take measures to meet Ministry-established energy benchmarks for each municipal building. Focus efforts on poorly performing buildings/facilities as required.
4	Explore the usage of clean and alternative and renewable energy.	Consider the feasibility of implementing new, alternative, and non fossil-fuel renewable energy systems in Township owned and operated facilities.
5	Secure funding to implement energy efficiency savings.	Prior to budgeting and implementing an energy conservation measure, research and secure available funding energy-related measures.

7.0 Conclusions & Recommendations

7.1 Conclusions

With due consideration of the 2014 and 2019 Plans and progress made to the current 2023 review, the following conclusions are presented.

1. Based on building upgrades and other practices and resultant data review, the Township has made significant positive progress in reducing its energy consumption for the majority of its buildings/facilities.
2. Where select buildings/facilities indicate high energy consumption/demand, focused studies on these locations would likely result in cost recovery of any detailed study by identifying sources of energy inefficiency or related conditions.
3. Low-capital cost measures to reduce energy consumption should be employed to realize potential return on investment benefits. Upgrades to exterior and interior lighting, programmable devices to control energy use on HVAC and hot water storage systems, and the replacement of door seals are noted.
4. Where required, minimum safety-related equipment should be installed, and consideration of energy-efficient equipment should form part of the equipment specification and procurement process.
5. Continuation of municipal staff and employee education and training are recommended to maximize the potential benefits of energy conservation and demand management.
6. New and emerging technologies in energy consumption monitoring and/or internet-based control systems should be considered for implementation in buildings with non-regular utilization.

7.2 Recommendations

The proposed measures noted in this report should be implemented by the Township as applicable and as opportunities are available to do so, considering building and facility asset planning, financial considerations, and other aspects of municipal asset management.

8.0 Closing

This report provides a real benefit to the Township of Greater Madawaska in its on-going planning and implementation efforts to reduce energy consumption in the use and operation of its buildings and facilities.

This report and its findings are governed by the attached statement of service qualifications and limitations (Appendix B).

All respectfully submitted by,

Greenview Environmental Management Limited



Michael A. Grasby
Project Technologist



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Tables



Table 1
Facility Greenhouse Gas Emission Summary (2011 - 2023)
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

No.	Building Name	Operation Type	Address	Town/City	Construction Year	Building Age (years)	Building Area		Greenhouse Gas Emissions (GHG; kilograms [kg CO2e])													Energy Intensity ²												
							square feet (ft ²)	square metres (m ²)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	Calabogie Community Hall & Rink Shed	Community centres	574 Mill Street	Calabogie	1996	28	6501	605	13,720	5,848	6,744	12,811	9,731	14,096	12,788	16,054	17,986	5,897	13,900	12,000	9,800	3.18	1.55	1.73	2.96	2.49	3.37	2.68	3.17	3.39	1.56	11.87	40.40	36.50
2	Calabogie Fire Hall	Fire stations and associated offices and facilities	12470A Lanark Road	Calabogie	1991	33	3207	298	8,412	7,823	7,180	13,992	6,701	5,531	5,134	6,095	5,781	4,323	5,800	6,200	5,300	3.84	3.48	3.00	5.26	3.06	2.93	2.81	3.01	2.88	2.76	12.90	49.10	43.40
3	Calabogie Garage	Storage facilities where equipment or vehicles are maintained, repaired or stored	12470B Lanark Road	Calabogie	1991	33	5037	468	32,950	30,149	15,681	20,695	27,214	27,732	31,975	32,849	39,015	22,536	29,600	30,500	22,800	8.12	7.43	4.14	4.97	6.60	7.04	7.92	7.73	8.55	6.32	32.26	115.50	97.20
4	Calabogie Medical Centre	Administrative offices and related facilities, including municipal council chambers	1101 Francis Street	Calabogie	1990	34	1345	125	-	2,015	2,539	5,098	7,207	7,592	10,308	8,281	10,102	7,033	6,400	7,700	14,200	-	2.50	3.75	4.63	8.80	9.42	11.30	9.50	10.03	8.72	35.87	140.50	-
5	Griffith Community Hall	Community centres	25991B Highway #41	Griffith	1997	27	4208	391	912	7,755	4,063	879	7,708	4,227	5,736	4,563	8,280	3,381	7,700	4,800	6,000	0.53	2.13	1.50	0.56	2.52	1.86	2.16	1.59	2.28	1.25	9.55	23.30	28.60
6	Griffith Fire Hall	Fire stations and associated offices and facilities	25991C Highway #41	Griffith	1974	50	2260	210	12,659	14,679	10,168	20,484	12,695	14,097	13,324	13,174	14,492	8,791	9,100	10,500	8,100	11.38	10.84	9.21	14.46	4.86	5.02	4.84	4.59	4.73	3.46	14.71	58.90	46.60
7	Griffith Garage	Storage facilities where equipment or vehicles are maintained, repaired or stored	25991C Highway #41	Griffith	1974	50	1292	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Griffith Rink	Community centres	15 Ginza Street	Griffith	1975	49	1496	139	7,759	-	-	-	-	-	-	-	3,182	2,978	1,800	3,700	2,500	5.40	-	-	-	-	-	-	-	2.43	2.51	5.94	47.20	32.10
9	Matawatchan Salt Shed	Storage facilities where equipment or vehicles are maintained, repaired or stored	3568 Matawatchan Road	Griffith	2009	15	990	92	842	2,918	2,659	-	-	-	-	-	-	-	-	-	-	2.07	3.58	2.84	-	-	-	-	-	-	-	-	-	
10	Municipal Office	Administrative offices and related facilities, including municipal council chambers	19 Parnell St.	Calabogie	1914	110	6296	586	675	-	1,675	8,548	6,808	6,009	5,965	6,988	9,033	7,482	8,400	6,900	4,900	1.31	-	0.77	2.37	2.44	2.53	2.68	2.50	2.78	2.79	11.87	39.00	35.00
Totals							32,632	3,035	77,928	71,187	50,709	82,508	78,065	79,283	85,230	88,005	107,870	62,421	82,700	82,300	73,600	35.83	31.49	26.93	35.21	30.76	32.18	34.38	32.09	37.07	29.36	134.97	513.90	319.40

Notes:
1. Data values between 2011 and 2020 are normalized as per BPS standardized reporting. Data for 2021, 2022, 2023 is not normalized in Table 1, but is included for reporting purposes.
2. Depending on historical reporting by the Municipality, some sites/locations may be combined, with combined reporting values. For consistency with annual reporting, the above is consistent with Municipal BPS reporting.
3. Data for Griffith Garage is included with Griffith Fire Hall, as they are a combined building, and the Fire Hall represents the larger comparable building area between the two occupancies.



Site: Calabogie Community Hall

Address: 574 Mill Street
Calabogie, Ontario

Area of Building (Sq.ft.): 5299

Primary Use: Community Centre

Primary Heating System: Forced Air Propane Furnace(s)

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): -40%

Table 2-1
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2020, Rink)	Substantial improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	1	\$10,000	\$2,500	4
2.02	Doors	Replace the existing person doors to meet the new energy efficiency requirements.	-	Y (2019)	Moderate improvement	-	-	-	-
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	Upgrade existing insulation to improve thermal performance/reduce heat loss.	-	-	-	-	-	-	-
2.05	External Service Penetrations	Seal and insulate any external service penetrations on the building exterior.	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	Repair damage to building envelope/structure that could have an adverse affect on energy consumption.	-	-	-	1	\$1,000	\$50	20
2.07	Exterior Cladding	Repair any areas of exterior cladding that are damaged and would create a potential location for energy loss.	-	-	-	3	\$7,500	\$50	150
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	Heating system has reached/exceeded its expected service-life and should be replaced with a new, high-efficiency system.	-	Y (2016)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	-	-	3	\$1,000	\$50	20
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	4	\$500	\$100	5
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	2	Y (2022)	Substantial improvement	-	-	-	-
3.05	Domestic Hot Water System	Install a programmable timer and insulate the pipework on the DHW system.	-	-	-	2	\$1,500	\$200	8
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	-	-	4	\$50,000	\$2,500	20
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	2	\$1,000	\$175	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	3	Y (2015)	Minimal improvement	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	3	Y (2015)	Moderate improvement	2	\$1,500	\$150	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	3	\$1,800	\$150	12
6.03	Automatic Equipment	Replace existing manual plumbing fixtures and washroom equipment with automatic fixtures/equipment.	-	-	-	5	\$5,000	\$250	20
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	Y (2020)	Moderate improvement	-	-	-	-
7.02	Energy Star Rated Office Equipment	Replace the existing non-rated office equipment with new Energy Star rated equipment at the end of service life.	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$250	4



Site: Calabogie Fire Hall

Address: 12470A Lanark Road
Calabogie, Ontario

Area of Building (Sq.ft.): 3207

Primary Use: Fire Station

Primary Heating System: Forced Air Propane
Furnace & Electric
Space Heaters

Air Conditioning: None

Percent (%) Change (2011-2023) GHG Emissions (kg): -37%

Table 2-2
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	4	Y (2020)	Moderate improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	3	\$10,000	\$1,000	10
2.02	Doors	Replace/repair seals on exterior person doors.	-	-	-	3	\$2,000	\$400	5
2.03	Overhead Doors (As Applicable)	Repair overhead doors and associated seals.	-	-	-	5	\$5,000	\$500	10
2.04	Insulation	Upgrade existing insulation to improve thermal performance/reduce heat loss.	-	-	-	-	-	-	-
2.05	External Service Penetrations	Seal and insulate any external service penetrations on the building exterior.	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	Repair damage to building envelope/structure that could have an adverse affect on energy consumption.	-	-	-	-	-	-	-
2.07	Exterior Cladding	Repair any areas of exterior cladding that are damaged and would create a potential location for energy loss.	-	-	-	5	\$1,000	\$100	10
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	The existing HVAC system should be replaced to a new energy-efficient system.	-	Y (2013)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	-	-	2	\$3,000	\$300	10
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	4	\$2,500	\$250	10
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	Y (2020, Apparatus Bays)	-	1	\$500	\$250	2
3.05	Domestic Hot Water System	Install a programmable timer on the domestic hot water system.	-	-	-	2	\$500	\$150	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	-	-	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	3	\$2,000	\$250	8
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	4	\$400	\$50	8
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	Y (2022)	Minimal improvement	-	-	-	-
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	5	\$300	\$25	12
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	Y (2022, HE Dryer)	Moderate improvement	-	-	-	-
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures.	-	-	-	1	\$1,000	\$200	5



Site: Calabogie Garage

Address: 12470B Lanark Road
Calabogie, Ontario

Area of Building (Sq.ft.): 5037

Primary Use: Municipal Garage

Primary Heating System: Propane Fired Tube Heaters, Electric Space Heaters

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): -31%

Table 2-3
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2020)	Moderate improvement	2	\$2,500	\$300	8
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	Y (2020)	Minimal improvement	2	\$3,000	\$600	5
2.02	Doors	Replace/repair seals on exterior person doors.	-	-	-	2	\$50	\$25	2
2.03	Overhead Doors (As Applicable)	Replace overhead doors and associated seals.	-	-	-	1	\$7,500	\$750	10
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	N/A	-	-	-	-	-	-	-
2.07	Exterior Cladding	Repair any areas of exterior cladding that are damaged and would create a potential location for energy loss.	-	-	-	5	\$2,500	\$250	10
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	Heating system has reached/exceeded its expected service-life and should be replaced with a new, high-efficiency system.	-	Y (2021, Garage bays); Y (2019)	Substantial improvement	-	-	-	-
3.02	Ventilation System	N/A	-	-	-	-	-	-	-
3.03	Duct Network	N/A	-	-	-	-	-	-	-
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	2	Y (2019)	Minimal improvement	2	\$400	\$150	3
3.05	Domestic Hot Water System	Install a programmable timer on the domestic hot water system.	-	-	-	2	\$500	\$150	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	Y (2016)	Moderate improvement	3	\$10,000	\$1,000	10
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	3	\$1,600	\$280	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	3	Y (2016)	Minimal improvement	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	-	-	3	\$500	\$50	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	5	\$1,200	\$100	12
6.03	Automatic Equipment	Replace existing manual plumbing fixtures and washroom equipment with automatic fixtures/equipment.	-	-	-	4	\$1,000	\$50	20
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	-	-	3	TBD	TBD	TBD
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures.	-	-	-	1	TBD	TBD	TBD



Site: Calabogie Medical Centre

Address: 1101 Francis Street
Calabogie, Ontario

Area of Building (Sq.ft.): 1345

Primary Use: Medical Centre

Primary Heating System: Forced Air Propane Furnace

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): 282%

Table 2-4
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2022)	Moderate improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	-	-	-	-
2.02	Doors	Replace the existing person doors to meet the new energy efficiency requirements.	3	Y (2018)	Minimal improvement	2	\$3,500	\$500	7
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	Upgrade existing insulation to improve thermal performance/reduce heat loss.	-	-	-	-	-	-	-
2.05	External Service Penetrations	Seal and insulate any external service penetrations on the building exterior.	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	Repair damage to building envelope/structure that could have an adverse affect on energy consumption.	-	-	-	-	-	-	-
2.07	Exterior Cladding	Repair/repointing of any areas of veneer masonry that are damaged and could result in a source of excess energy consumption.	-	-	-	5	\$500	\$50	10
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	Heating system has reached/exceeded its expected service-life and should be replaced with a new, high-efficiency system.	-	Y (2016 - Forced Air Furnace, 2023 - New Furnace, Air Conditioning)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	Y (2016)	Moderate improvement	2	\$1,000	\$50	20
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	4	\$500	\$100	5
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	2	Y (2016)	Minimal improvement	-	-	-	-
3.05	Domestic Hot Water System	Install a programmable timer on the domestic hot water system.	-	-	-	2	\$500	\$150	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	2	Y (2018 - 2021)	Substantial improvement	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	4	\$2,000	\$350	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	3	Y (2015)	Minimal improvement	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	4	Y (2019)	Moderate improvement	4	\$1,500	\$150	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	4	\$1,800	\$150	12
6.03	Automatic Equipment	Replace existing manual plumbing fixtures and washroom equipment with automatic fixtures/equipment.	-	-	-	5	\$4,000	\$200	20
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	-	-	-	-	-	-
7.02	Energy Star Rated Office Equipment	Replace the existing non-rated office equipment with new Energy Star rated equipment at the end of service life.	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$200	5



Site: Calabogie Rink Shed

Address: 574 Mill Street
Calabogie, Ontario

Area of Building (Sq.ft.): 1202

Primary Use: Municipal Storage

Primary Heating System: Propane Unit Heater

Air Conditioning: None

Percent (%) Change (2011-2023) GHG Emissions (kg): N/A

Table 2-5
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	N/A	-	-	-	-	-	-	-
2.0 Building Envelope									
2.01	Windows	N/A	-	-	-	-	-	-	-
2.02	Doors	N/A	-	-	-	-	-	-	-
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	N/A	-	-	-	-	-	-	-
2.07	Exterior Cladding	N/A	-	-	-	-	-	-	-
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	N/A	-	-	-	-	-	-	-
3.02	Ventilation System	N/A	-	-	-	-	-	-	-
3.03	Duct Network	N/A	-	-	-	-	-	-	-
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	-	-	3	\$300	\$50	6
3.05	Domestic Hot Water System	Install a programmable timer and insulate the pipework on the DHW system.	-	-	-	1	\$2,000	\$500	4
4.0 Electrical									
4.01	Energy Efficient Lighting System	N/A	-	-	-	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	-	-	-	-
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	Y (2020)	Minimal improvement	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	N/A	-	-	-	-	-	-	-
6.02	Low-Flow Faucets	N/A	-	-	-	-	-	-	-
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	N/A	-	-	-	-	-	-	-
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures.	-	-	-	1	\$1,000	\$200	5



Site: Griffith Community Hall

Address: 25991B Highway #41 Griffith, Ontario

Area of Building (Sq.ft.): 4208

Primary Use: Community Centre

Primary Heating System: Forced Air Propane Furnace

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): -23%

Table 2-6
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2021, Light Standard)	Minimal improvement	2	\$2,500	\$350	7
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	-	-	-	-
2.02	Doors	Replace/repair seals on exterior person doors.	-	-	-	1	\$1,000	\$500	2
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	Repair damage to building envelope/structure that could have an adverse affect on energy consumption.	-	-	-	3	\$1,000	\$100	10
2.07	Exterior Cladding	Repair any areas of exterior cladding that are damaged and would create a potential location for energy loss.	-	-	-	5	\$1,000	\$100	10
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	The existing HVAC system should be replaced to a new energy-efficient system.	-	Y (2020)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	-	-	3	\$5,000	\$150	33
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	2	\$250	\$50	5
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	Y (2020)	Moderate improvement	-	-	-	-
3.05	Domestic Hot Water System	Install a programmable timer and insulate the pipework on the DHW system.	-	-	-	2	\$250	\$100	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	Y (2019)	Substantial improvement	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	3	\$1,000	\$175	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	4	\$500	\$50	10
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	-	-	3	\$1,500	\$150	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	3	\$1,200	\$100	12
6.03	Automatic Equipment	Replace existing manual plumbing fixtures and washroom equipment with automatic fixtures/equipment.	-	-	-	5	\$5,000	\$250	20
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	-	-	3	TBD	TBD	TBD
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$200	5



Site: Griffith Fire Hall
Address: 25991C Highway #41
Griffith, Ontario

Area of Building (Sq.ft.): 2260

Primary Use: Fire Hall

Primary Heating System: Forced Air Propane Furnace

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): -36%

Table 2-7
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2020)	Moderate improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	2	\$2,000	\$400	5
2.02	Doors	Replace/repair seals on exterior person doors.	-	-	-	2	\$1,500	\$200	8
2.03	Overhead Doors (As Applicable)	Repair overhead doors and associated seals.	-	-	-	2	\$2,500	\$500	5
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	N/A	-	-	-	-	-	-	-
2.07	Exterior Cladding	Repair any areas of exterior cladding that are damaged and would create a potential location for energy loss.	-	-	-	2	\$1,000	\$100	10
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	The existing HVAC system should be replaced to a new energy-efficient system.	-	Y (2016)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	-	-	2	\$1,000	\$50	20
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	3	\$250	\$50	5
3.04	HVAC Controls	N/A	-	-	-	-	-	-	-
3.05	Domestic Hot Water System	Install a programmable timer and insulate the pipework on the DHW system.	-	-	-	2	\$250	\$100	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	Y (2016)	Substantial improvement	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	3	\$400	\$70	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	2	\$500	\$60	8
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	-	-	2	\$500	\$50	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	4	\$300	\$25	12
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	3	Y (2022)	Moderate improvement	3	TBD	TBD	TBD
7.02	Energy Star Rated Office Equipment	Replace the existing office equipment with new Energy Star rated equipment at the end of the service life.	-	-	-	3	TBD	TBD	TBD
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$200	5



Site: Griffith Garage
Address: 25991C Highway #41
Griffith, Ontario

Area of Building (Sq.ft.): 1292

Primary Use: Municipal Garage

Primary Heating System: Overhead Propane
Tube Heater

Air Conditioning: Yes

Percent (%) Change (2011-2023) GHG Emissions (kg): N/A

Table 2-8
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2020)	Moderate improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	Replace existing windows in the building to meet energy efficient fenestration requirements.	-	-	-	1	\$2,000	\$400	5
2.02	Doors	Replace the existing person doors to meet the new energy efficiency requirements.	-	-	-	1	\$1,500	\$200	8
2.03	Overhead Doors (As Applicable)	Repair overhead doors and associated seals.	-	-	-	3	\$500	\$50	10
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	N/A	-	-	-	-	-	-	-
2.07	Exterior Cladding	N/A	-	-	-	-	-	-	-
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	N/A	-	-	-	-	-	-	-
3.02	Ventilation System	Replace/install existing circulating fans with dual-directional model.	3	Y (2020)	Moderate improvement	-	-	-	-
3.03	Duct Network	N/A	-	-	-	-	-	-	-
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	-	-	2	\$250	\$500	1
3.05	Domestic Hot Water System	N/A	-	-	-	-	-	-	-
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	2	Y (2017)	Moderate improvement	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	3	\$200	\$35	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	3	\$500	\$60	8
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	-	-	4	\$500	\$50	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	4	\$300	\$25	12
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	-	-	3	TBD	TBD	TBD
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures.	-	-	-	1	\$1,000	\$200	5



Table 2-9
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Site: Griffith Rink

Address: 15 Ginza Street
Griffith, Ontario

Area of Building (Sq.ft.): 1496

Primary Use: Community Centre

Primary Heating System: Forced Air Propane
Furnace

Air Conditioning: None

Percent (%) Change (2019-2023) GHG Emissions (kg): -21%

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Replace existing outdoor lighting with energy efficient LED lighting with control sensors.	2	Y (2023)	Substantial improvement	-	-	-	-
2.0 Building Envelope									
2.01	Windows	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
2.02	Doors	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
2.05	External Service Penetrations	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
2.06	Building Envelope Integrity	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
2.07	Exterior Cladding	N/A	-	Y (2016)	Moderate improvement	-	-	-	-
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	The existing HVAC system should be replaced to a new energy-efficient system.	-	Y (2016)	Substantial improvement	-	-	-	-
3.02	Ventilation System	Install a heat recovery ventilation system (HRV) on the existing HVAC system.	-	-	-	3	\$2,000	\$150	13
3.03	Duct Network	Insulate and/or seal existing HVAC ductwork to mitigate heating/cooling losses.	-	-	-	4	\$1,500	\$200	8
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	-	-	1	\$500	\$500	1
3.05	Domestic Hot Water System	Install a programmable timer and insulate the pipework on the DHW system.	-	-	-	1	\$1,500	\$500	3
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	-	Y (2023, 2016)	Substantial improvement	-	-	-	-
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	Y (2023)	Moderate improvement	-	-	-	-
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	At the end of an existing toilet's service life, replace with low-flow type.	-	Y (2023)	Minimal improvement	4	\$1,000	\$100	10
6.02	Low-Flow Faucets	Install metered low-flow faucets for the hot & cold water services. Faucets are to have an adjustable timing sequence.	-	-	-	4	\$1,200	\$100	12
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	Replace the existing non-rated appliances with new Energy Star rated appliances at the end of service life.	-	-	-	5	TBD	TBD	TBD
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$200	5



Site: Matawatchan Salt Shed

Address: 3568 Matawatchan Salt Shed Griffith, Ontario

Area of Building (Sq.ft.): 990

Primary Use: Municipal Storage

Primary Heating System: Propane Garage Unit

Air Conditioning: None

Percent (%) Change (2011-2013) GHG Emissions (kg): -10%

Table 2-10
Energy Conservation & Demand Management Measure Summary
Municipal Energy Conservation & Demand Management Plan (2024)
Township of Greater Madawaska

Item	Measure Summary		Past Measures (2011 - 2023)			Current & Proposed Measures (2024 - 2029)			
	Type	Description	Priority	Completed Status Y/N (Year)	Interpreted Benefit	Priority	Estimated Capital	Savings (Annual)	Simple ROI (Years)
1.0 Exterior Grounds									
1.01	Exterior Lighting	Update existing LED outdoor lighting to have programmable controls.	2	Y (2023)	Minimal improvement	4	\$150	\$30	5
2.0 Building Envelope									
2.01	Windows	N/A	-	-	-	-	-	-	-
2.02	Doors	Replace the existing person doors to meet the new energy efficiency requirements.	2	Y (2018)	Minimal improvement	-	-	-	-
2.03	Overhead Doors (As Applicable)	N/A	-	-	-	-	-	-	-
2.04	Insulation	N/A	-	-	-	-	-	-	-
2.05	External Service Penetrations	N/A	-	-	-	-	-	-	-
2.06	Building Envelope Integrity	Repair damage to building envelope/structure that could have an adverse affect on energy consumption.	-	-	-	2	\$10,000	\$500	20
2.07	Exterior Cladding	N/A	-	-	-	-	-	-	-
3.0 Heating, Ventilation, Air Conditioning (HVAC) & Domestic Hot Water									
3.01	Heating & Cooling System	Heating system has reached/exceeded its expected service-life and should be replaced with a new, high-efficiency system.	-	Y (2023)	Moderate improvement	-	-	-	-
3.02	Ventilation System	Install demand control ventilation system to regulate ventilation.	-	-	-	3	\$5,000	\$200	25
3.03	Duct Network	N/A	-	-	-	-	-	-	-
3.04	HVAC Controls	Install programmable thermostats to control the indoor air temperature and setback temperatures when the building is unoccupied.	-	-	-	1	\$250	\$500	1
3.05	Domestic Hot Water System	N/A	-	-	-	-	-	-	-
4.0 Electrical									
4.01	Energy Efficient Lighting System	Replace the existing lighting system with an energy-efficient LED lighting system.	2	Y (2016)	Moderate improvement	2	\$2,000	\$250	8
4.02	Lighting Controls	Replace existing with occupancy-activated lighting controls.	-	-	-	4	\$200	\$35	6
4.03	Emergency Exit Signs	Install energy efficient, photo luminescent emergency exit signs.	-	-	-	-	-	-	-
4.04	Pumps	N/A	-	-	-	-	-	-	-
4.05	Monitoring and Targeting System	N/A	-	-	-	-	-	-	-
5.0 Renewable Energy									
5.01	Renewable Energy - Solar PV	Consider ground-mount or roof-mounted solar PV systems as a potential source of renewable energy to the building.	-	-	-	-	-	-	-
5.02	Renewal Energy Heating & Cooling - Ground Source or Air Source Heat Pump Technology	Consider implementing ground source and/or air source heat pump heating/cooling systems with next heating/cooling system replacement.	-	-	-	-	-	-	-
5.03	Renewable Energy - Solar Thermal Air	Consider solar air systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
5.04	Renewable Energy - Solar Thermal Water	Consider solar water systems as a potential use of renewable energy to the building.	-	-	-	-	-	-	-
6.0 Water Conservation									
6.01	Low-Flow Toilets	N/A	-	-	-	-	-	-	-
6.02	Low-Flow Faucets	N/A	-	-	-	-	-	-	-
6.03	Automatic Equipment	N/A	-	-	-	-	-	-	-
7.0 Energy Efficient Appliances / Equipment									
7.01	Energy Star Rated Appliances	N/A	-	-	-	-	-	-	-
7.02	Energy Star Rated Office Equipment	N/A	-	-	-	-	-	-	-
8.0 Training & Awareness									
8.01	Staff Training	Staff/Employees have been made aware of the goals, objectives, and benefits of the Municipality's energy conservation and demand management planning and associated measures	-	-	-	1	\$1,000	\$200	5

Appendix A



ONTARIO REGULATION 25/23

made under the

ELECTRICITY ACT, 1998

Made: February 23, 2023

Filed: February 23, 2023

Published on e-Laws: February 23, 2023

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BROADER PUBLIC SECTOR: ENERGY REPORTING AND CONSERVATION AND DEMAND MANAGEMENT PLANS

Definitions

1. In this Regulation,

“municipal service board” means,

- (a) a municipal service board or joint municipal service board established or continued under the *Municipal Act, 2001*,
- (b) a city board or joint city board established or continued under the *City of Toronto Act, 2006*, or
- (c) a joint board established in accordance with a transfer order made under the *Municipal Water and Sewage Transfer Act, 1997*; (“commission de services municipaux”)

“Portfolio Manager” means the ENERGY STAR Portfolio Manager electronic reporting system developed by the United States Environmental Protection Agency, as adapted for use in Canada and administered by Natural Resources Canada, and available on the Internet; (“Portfolio Manager”)

“post-secondary educational institution” means a university in Ontario, a college of applied arts and technology in Ontario or another post-secondary educational institution in Ontario, if the university, college or institution receives an annual operating grant; (“établissement d’enseignement postsecondaire”)

“public hospital” means a hospital within the meaning of the *Public Hospitals Act*; (“hôpital public”)

“school board” means a board within the meaning of the *Education Act*. (“conseil scolaire”)

Prescribed public agencies

2. For the purposes of the definition of “public agency” in subsection 25.35.2 (1) of the Act, the following are prescribed as public agencies:

- 1. Every municipality.
- 2. Every municipal service board.
- 3. Every post-secondary educational institution.
- 4. Every public hospital.
- 5. Every school board.

Plan

3. (1) Every public agency that is not a ministry of the Government of Ontario shall prepare an energy conservation and demand management plan.

(2) The energy conservation and demand management plan shall be approved by the senior management of the public agency to whom the plan applies before the public agency publishes the plan on the public agency's website and makes the plan available to the public in printed form at the public agency's head office in accordance with section 9.

Plan, prescribed operations

4. The operation, by a public agency, of a building or facility referred to in Table 1 for that type of public agency is prescribed as an operation for the purposes of paragraphs 1 and 2 of subsection 25.35.2 (3) of the Act.

Plan, prescribed additional information

5. (1) The following information is prescribed, for the purposes of paragraph 4 of subsection 25.35.2 (3) of the Act, as additional information the energy conservation and demand management plan must include:

1. A summary of annual greenhouse gas emissions for each of the public agency's prescribed operations, which shall be included in the summary of the public agency's annual energy consumption required under paragraph 1 of subsection 25.35.2 (3) of the Act.
2. A description of the results of previous activities and measures to conserve the energy consumed by the public agency's prescribed operations and to otherwise reduce the amount of energy consumed by the public agency, including by employing such energy conservation and demand management methods as may be prescribed.
3. The cost and saving estimates for the public agency's current and proposed activities and measures referred to in paragraph 2 of subsection 25.35.2 (3) of the Act.
4. A description of any renewable energy generation facility operated by the public agency and the amount of energy produced on an annual basis by the facility.
5. A description of,
 - i. the ground source energy utilized, if any, by ground source heat pump technology operated by the public agency,
 - ii. the solar energy utilized, if any, by thermal air technology or thermal water technology operated by the public agency, and
 - iii. the proposed plan, if any, to operate heat pump technology, thermal air technology or thermal water technology in the future.
6. The estimated length of time the public agency's current and proposed activities and measures referred to in paragraph 2 of subsection 25.35.2 (3) of the Act will be in place.
7. A confirmation that the energy conservation and demand management plan has been approved by the public agency's senior management.

(2) The energy conservation and demand management plan may also include information on the operation of a building or facility by the public agency that is not a prescribed operation for that public agency.

Summary, prescribed operations of certain buildings or facilities

6. (1) The information required under section 7 for each of the public agency's prescribed operations is required only if the public agency owns or leases the building or facility whose operation is prescribed and,

- (a) the building or facility is heated or cooled and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption; or
- (b) the operation is related to the treatment of water or sewage, whether the building or facility is heated or cooled, and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption.

(2) If only part of the building or facility is heated or cooled, the public agency is only required to include the information required under section 7 for the part of the building or facility that is heated or cooled.

Summary, prescribed requirements

7. (1) The summary of annual energy consumption required under paragraph 1 of subsection 25.35.2 (3) of the Act and the summary of annual greenhouse gas emissions required under paragraph 1 of subsection 5 (1) of this Regulation shall be for the year that ends on December 31 immediately preceding the day the summary is required to be submitted.

(2) The summary for a year must include the following information for each of the public agency's prescribed operations:

1. The name of the building or facility.
2. The address of the building or facility.
3. The total floor area of the indoor space of the building or facility.
4. The type of the building or facility, as set out in a paragraph in Column 2 of Table 1.
5. If the building or facility has more than one use, the type of the building or facility for the purpose of paragraph 4 shall be determined based on the use that occupies the largest amount of total floor area of the indoor space or, if more than one use occupies the same amount of total floor area of the indoor space, based on one of those uses chosen by the public agency.
6. A description of the days and hours in the year during which the building or facility is operated and, if the building or facility is operated on a seasonal basis, the period or periods during the year when it is operated.
7. The total amount of each type of energy that was consumed in the year to operate the building or facility and that was purchased by the public agency, regardless of when it was purchased.
8. The total amount of greenhouse gas emissions that were emitted in the year with respect to each type of energy, calculated from the total amount of each type of energy included under paragraph 7.

(3) The summary for a year must also include the following information, if applicable:

1. If the public agency is a school board whose operation of a school is prescribed,
 - i. whether the school had classrooms in temporary accommodations and the number of such classrooms, and
 - ii. whether the school had an indoor swimming pool.
2. If the public agency is a public hospital whose operation of a facility used for hospital purposes is prescribed, whether the facility was operated as a chronic or acute care facility, or both.
3. If the public agency is a municipality or municipal service board whose operation of a building or facility related to the treatment of water or sewage is prescribed,
 - i. the volumetric flow rate of water treated, if the building or facility treats water, or
 - ii. the volumetric flow rate of sewage treated, if the building or facility treats sewage.

(4) A public agency may exclude, from the summary, any amount of energy consumed or greenhouse gas emitted related to the temporary use of an emergency or back-up generator to continue the operation of the building or facility.

(5) In this section,

“volumetric flow rate” means a rate that sets out the flow of water or sewage in units of volume over time.

Summary, submission to Ministry

8. (1) Each year, every public agency shall submit to the Ministry, through the use of Portfolio Manager, the summaries referred to in subsection 7 (1).

(2) The summaries for a year ending December 31 shall be submitted on or before July 1 of the following year.

(3) Despite subsection (2),

(a) the summaries for the year ending December 31, 2021 shall be submitted on or before July 1, 2023; and

(b) the summaries for the years ending December 31, 2022 and December 31, 2023 shall be submitted on or before July 1, 2024.

Plan, publication

9. (1) On or before July 1, 2024 and on or before July 1 in every fifth year thereafter, every public agency shall publish on its website, and make available to the public in printed form at its head office, the public agency's energy conservation and demand management plan.

(2) The reference to the plan in subsection (1) does not include the summaries referred to in subsection 7 (1), other than the summaries for the most recent year before the applicable due date referred to in subsection (1).

Revocation

10. Ontario Regulation 507/18 is revoked.

Commencement

11. This Regulation comes into force on the day it is filed.

TABLE 1

Item	Column 1 Type of Public Agency	Column 2 Buildings and Facilities Whose Operation is Prescribed
1.	Municipality	1. Administrative offices and related facilities, including municipal council chambers. 2. Public libraries. 3. Cultural facilities, indoor recreational facilities and community centres, 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.
2.	Municipal service board	1. Buildings or facilities related to the treatment of water or sewage.

3.	Post-secondary educational institution	<ol style="list-style-type: none"> 1. Administrative offices and related facilities. 2. Classrooms and related facilities. 3. Laboratories. 4. Student residences that have more than three storeys or a building area of more than 600 square metres. 5. Student recreational facilities and athletic facilities. 6. Libraries. 7. Parking garages.
4.	School board	<ol style="list-style-type: none"> 1. Schools. 2. Administrative offices and related facilities. 3. Parking garages.
5.	Public hospital	<ol style="list-style-type: none"> 1. Facilities used for hospital purposes. 2. Administrative offices and related facilities.

Français

Appendix B



Statement of Service Conditions & Limitations

The following conditions and limitations shall form an integral part of any agreement between Greenview and the Client. In the event of duplication or conflict, the most stringent shall supercede the other.

Provision of Services and Payment

Upon documented acceptance of Greenview's proposed services and conditions in written form by the Client, Greenview may commence work on the proposed services directly.

Greenview's offers for services in the form of proposals, quotations, bids, tenders, or other like an offering to a Client are formulated upon available information at the time of the offer submission. In the event of discovery of unknown conditions, or any other unknown circumstance that may arise following the presentation of Greenview's offer to the Client, Greenview reserves the right to negotiate terms with the Client with respect to changes in scope, fees, disbursements, or the like as may be fair and reasonable considering the discovery.

Upon retention of Greenview's services related to any commission, the Client agrees to remit payment for the services rendered for the specified period within (30) days of the invoice date as invoiced by Greenview on a typical monthly basis, unless otherwise arranged between the Client and Greenview. In the event of non-payment by the Client, Greenview reserves the right, without external influence or expense, to discontinue services and retain any documentation, data, reports, or other project information until such time as payment is received by Greenview. Interest on any overdue accounts may be applied accordingly.

Warranty, Limitations, and Reliance

Greenview relies on background and historical information from the Client to determine the appropriate scope of services to meet the Client's objectives, in accordance with applicable legislation, guidelines, industry practices, and accepted methodologies.

Greenview provides its services under the specific terms and conditions of a specific proposal (and where necessary formal contract), in accordance with the above requirements and the *Limitations Act 2002*, as amended, only.

The hypotheses, results, conclusions, and recommendations presented in documentation authored by Greenview are founded on the information provided by the Client to Greenview in preparation for the work. Facts, conditions, and circumstances discovered by Greenview during the performance of the work requested by the Client are assumed by Greenview to be part of preparatory information provided by the Client as part of the proposal stage of the project. Greenview assumes that, until notified or discovered otherwise, that the information provided by, or obtained by Greenview from, the Client is factual, accurate, and represents a true depiction of the circumstances that exist related to the time of the work.

Greenview relies on its Clients to inform Greenview if there are changes to any related information to the work. Greenview does not review, analyze, or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Greenview will not be responsible for matters arising from incomplete, incorrect, or misleading information or from facts or circumstances that are not fully disclosed to, or that are concealed from Greenview during the period that proposals, services, work, or documentation preparation was performed by Greenview.

Facts, conditions, information, and circumstances may vary with time and locations and Greenview's services are based on a review of such matters as they existed at the time and location indicated in its documentation. No assurance is made by Greenview that the facts, conditions, information, circumstances or any underlying assumptions made by Greenview in connection with the work performed will not change after the work is completed and documentation is submitted. If any such changes occur or additional information is obtained, Greenview should be advised and

requested to consider if the changes or additional information affect its findings or results.

When preparing documentation, Greenview considers applicable legislation, regulations, governmental guidelines, and policies to the extent they are within its knowledge, but Greenview is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations, not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

Greenview's services, work and reports are provided solely for the exclusive use of the Client which has retained the services of Greenview and to which its reports are addressed. Greenview is not responsible for the use of its services, work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by Greenview without Greenview's express written consent. Any party that uses, relies on, or makes a decision based on services or work performed by Greenview or a report prepared by Greenview without Greenview's express written consent, does so at its own risk. Except as set out herein, Greenview specifically disclaims any liability or responsibility to any third party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of, reliance on or decision based on any information, recommendation or other matter arising from the services, work or reports provided by Greenview.

Site Reviews and Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Greenview's work or report considers any locations or times other than those from which information, sample results and data were specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those based on extrapolations.

Only conditions, and substances, at the site and locations chosen for study by the Client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the Client. Any physical or other aspects of the site that were not chosen for study by the Client, or any other matter not specifically addressed in a report prepared by Greenview, are beyond the scope of the work performed by Greenview and such matters have not been investigated or addressed.

Confidentiality

Greenview provides its proposals, reports, assessments, designs, and any other work for the sole party identified as the Client or potential Client in the case of proposals.

For proposals specifically, the information contained therein is strictly confidential, proprietary information, and shall not be reproduced or disclosed to any other party than to that of the addressee of the original proposal submission, without prior written permission of Greenview. Any such unauthorised reproduction, in whole or in part, is considered a breach of trust or contract, as applicable by law.

Greenview retains all rights to its working/editable files, documents, calculations, drawings, and all other such information utilized in the preparation of its end deliverables to its Clients. Working documentation is considered to be proprietary, and the sole ownership of Greenview and its subconsultants/subcontractors.