

Energy Conservation and Demand Management Plan

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TOWN OF GANANOQUE

Introduction

Ontario Regulation 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans) require public agencies such as municipalities, post secondary education institutions, school boards, and public hospitals to develop a Conservation and Demand Management Plan (CDM). The CDM plan is a living document that must be updated at a minimum every five years. The following documentation is the Town of Gananoque's Energy Conservation and Demand Management Plan.

The following CDM plan is the successor of the original CDM plan dated from 2014-2019. The act requires municipalities to create CDM plans in order to review the previous five-year plan, state staff's appropriate measures in order to reduce greenhouse gas (GHG) emissions, and propose new initiatives in order to further develop energy reduction within Town buildings and infrastructure. The CDM plan is interconnected with our Asset Management plan to introduce energy savings to proposed Capital projects.

Hard copies of this plan are available at Town Hall located at 30 King Street East, Gananoque, Ontario, K7G 2T6.

Conservation of Energy: Previous Goals and Objectives

The Town of Gananoque has been diligently working on creating a framework to ensure energy management is a major function in all budgeting, planning, operations, and facilities decisions. In the previous plan, the Town aspired to have a reduction in municipal energy consumption of 10 percent by 2019.

Energy Tracking: Consumption and Savings

The Town of Gananoque has submitted energy reporting to the Ministry of Energy, Northern Development and Mines since 2011. The Town of Gananoque within the past 5 years did not have an accurate plan in place of recording energy consumption bills on a monthly basis. The Town could not complete an energy analysis depicting the exact amount of energy (kWh) saved. This caused Town staff to utilize the method of comparing Energy Intensities (ekWh/sqft) of Town owned buildings from 2011 to 2016 to calculating energy savings within Town owned buildings, as shown in the table below:

Table 1: Energy Intensities in Municipally-Owned Buildings

Building	Energy Intensity (ekWh/sqft) 2011	Energy Intensity (ekWh/sqft) 2016	Energy Saved (Percentage)
Arena – Ice Rinks / Community Centers	44.14648	24.76588	44%
Public Works Office	26.71651	21.84762	18%
Public Works Garage	21.76552	11.49954	47%
Marina Building	114.54664	258.15643	125%
Emergency Services Building	24.34580	13.48386	44.5%
Town Hall	26.71651	18.93098	29%

**The Town opted to use 2016 energy intensity data, as the Town is missing crucial natural gas data for 4 months within 2017. This would have skewed the results in the Town's favour, and the Town wanted to show comparative intensities.*

Town owned pumping stations and the water plant calculates Energy Intensity based on the amount of Mega Litres (flows passing through the pumping stations and the plants). The results are as listed below:

Table 2: Energy Intensities in Municipally-Owned Water and Wastewater Buildings

Building	Energy Intensity (ekWh/Mega Litre) 2011	Energy Intensity (ekWh/Mega Litre) 2016	Energy Saved (Percentage)
East End Pumping Station	213.6842335	217.76020	1.9%
Stone Street Pumping Station	213.6842335	261.42475	22.3%
Water Plant (Distribution and Treatment)	707.4358789	560.17404	20.8%

**The Town opted to use 2016 energy intensity data, as the Town is missing crucial natural gas data for 4 months within 2017. This would have skewed the results in the Town's favour, and the Town wanted to show comparative intensities.*

Overall, the Town saved 0.36 percent of energy based on the results above. The major contributing factor to the conservation of energy is the Marina Infrastructure. The increase of energy at the Marina is linked to the following modifications to Town Infrastructure:

- In spring of 2014, the Town installed 40 new slips on the 900 series docks that use either 50 amp or double 30-amp power.
- In 2017, the Town replaced and upgraded the 500 series docks with electrical power to the boats.
- The Town has noticed an increase of boaters that will live on their boat during the summer months. The increase of boaters lodging at the Town of Gananoque Marina in turn increase the energy in this location.
- The Ministry of Energy does not require municipalities to report the docks and outside infrastructure within their CDM plan, however the Town has the Marina building and all the associated docks on one meter. The Town is going to investigate separating such meters for accurate reporting to the province.

Other locations with an increase in energy is the East End Pumping Station and the Stone Street Pumping Station. As flows increase within the Town and the pumps age, the efficiency of the existing pumps will decrease. The Town currently is completing an EA with the East End Pumping Station and is reviewing its options for upgrades to the system. The Stone Street Generator and Flow Meter is slated to be replaced in 2026 per the Town of Gananoque's Asset Management Plan. This will increase the efficiency within the station and thus will decrease energy intensity (eKwH/sqft). The Water Treatment Plant installed a new boiler system (\$75,786) in 2017. Future reporting will delineate the amount of energy conserved.

Emergency Services is required to replace 3 rooftop heat exchangers in 2020.

Finally, the Town has converted all streetlights within the Town to LED. Streetlights can account for approximately 15% of a municipality's electricity use, thus a major factory in energy conservation.

Conservation of Energy: Proposed Goals and Objectives

Town staff is aware of proposed energy conservation projects that can make Town assets more cost effective. In order to implement these projects, the following conditions are reviewed in order to confirm that they are feasible:

- Incentives from IESO, Union Gas, and all other energy initiatives
- Funding from Council
- Availability of staff resources for planning, development, and implementation

The Town is setting the following goals and objectives for the CDM plan for 2019-2024:

- The Town would like to establish an Energy Conservation Management group that will meet yearly to discuss the conservation measures implemented, proposed capital projects to improve energy efficiency, and upcoming Energy courses held by LAS. The Conservation Management group will consist of an employee (management and/or union) from each department. The meeting will initially discuss the previous years motives, and how it has affected the usage within their department. Subsequently, it will discuss all proposed initiatives to improve the Town's infrastructure in relation to Energy Conservation.
- The Town is going to implement a system that will more accurately record data for future reporting. If the Town retained exact data for each month with no omissions, the Town could more accurately state exact kWh saved by departments and compare strategies interdepartmentally in order to improve the municipality.
- Set a benchmark of 2% saved annually year to year with a benchmark of energy information from 2017.

The Town understands that the Energy Conservation and Demand Management Plan is a living document, that will require updates from time to time. If you have any questions pertaining to the following, please contact the Manager of Public Works listed below:

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