

Energy Conservation and Demand Management Plan Update 2019 to 2024



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INTRODUCTION

The Township of Nipissing is located on the south shore of Lake Nipissing, in the District of Parry Sound, and has a population of approximately 1704 (2011) with an influx of approximately 1000 tourists in the summer months. Most of the Township is zoned as primarily rural with designated recreational and residential areas and hosts cottage and residential housing. It covers a geographical area of approximately 387 square kilometres.

The Township of Nipissing employs 9 full time positions and 8 part-time/seasonal positions. The Township Office, Public Works Garage, Outdoor Rink and Nipissing Township Museum are located within the hamlet area known locally as Nipissing Village. The Municipal Council is composed of a Mayor and four Councillors. The Township operates a Community Centre for hall rentals and community events which includes a Fitness Centre. There are two Fire Stations within the Township, operated by the Township of Nipissing Fire Department.

There are currently a number of formative plans in place that set the overall direction of the municipality. The Official Plan and Zoning By-Law provide guidance for future growth and development with regard to relevant social, economic and environmental matters. The Strategic Plan provides direction for the encouragement of investment and growth and a manageable rate and the Accessibility Plan provides direction for the provision of services and planning to better accommodate those with disabilities. In 2016, Council adopted an Updated Asset Management Plan to continue to guide the maintenance and growth of infrastructure and Capital Assets within the Township.

This Energy Conservation and Demand Management Plan will be implemented and utilized, where possible, in conjunction with all of these plans as tools for future development and provide a capital investment strategy for assets and infrastructure using the most energy efficient and environmentally responsible methods available while also keeping to an economy of scale.

Goals and Objectives Achieved from Previous Plan

The Township of Nipissing has successfully upgraded all heating units in facilities from oil fuel to either propane or electric. The oil furnace was replaced by a high efficiency propane heat system at Station #2 in 2016, this was the final remaining oil appliance in the Township facilities.

The conversion of street lights to LED fixtures has continued, replacing each unit as required during regular maintenance. Of the 13 street lights maintained by the municipality, 4 have been converted to LED fixtures and lights when maintenance was required. This is the most cost efficient method of conversion for the Township.

The Township had forecasted a goal of 5% decrease in energy consumption over the 5 year plan, resulting in 1% per year. The decrease was not realized. There were a number of factors that contributed to the fluent usage of energy each year.

The weather patterns have been different each year. When there is a colder winter, the heat and power requirements increase so the garage power is used more to keep the equipment warm and ready to use and the fire hall is also used more for the same purpose. The rink power usage is also changing due to weather patterns. In warmer winters, the rink does not open for a long season however if the season of cold starts early, more power is utilized.

The Township is committed to utilizing the most efficient appliances for heat, cooling and services within all municipal facilities. The appliances are replaced when required and at that point of replacement, the most efficient method is selected and installed. Due to the rural location of the municipal facilities and the limited staff resources, the most effective methods of providing heat and power have been established as propane furnaces and electricity.

FACILITY OVERVIEW

Year of Construction: 1974, RENOVATED 2010, newly shingled roof 2018

Primary Heating Source: Electric heat through baseboard heaters.

Cooling: Air Conditioning using electrical means.

A propane powered self-activating generator has been installed at the Office to provide power during emergency situations.

KEY PHYSICAL FEATURES

The Office contains a large, open space on the main floor that serves as office space/reception for the CAO-Clerk, Treasurer-Deputy Clerk and EDO/CEMC/Planning Assistant. There is a kitchen, accessible washroom and Council Chamber located on the main floor.

The basement of the facility contains two office spaces for the Operations Superintendent and the Chief Building Official. The rest of the basement is used for records and supply storage.

This building is owned by the Township of Nipissing and it does not lease any space to a third party.

KEY ENERGY CONSUMING USES

Heating and Cooling are the main energy uses of this building.

PROPOSED ENERGY SAVING MEASURES

- Programmable thermostats were installed in the office in 2013 to allow for consistent temperature control during all operating cycles.
- Upgrading all office lights to LED bulbs is in the proposed 2015 budget which will take the current 40 watt bulbs down to 16 watt bulbs.
- Installation of a new front door with improved insulation factors was installed in 2016.
- Energy efficient heating units were installed to replace aging and malfunctioning base board heaters in 2013.

TOWNSHIP OFFICE

45 Beatty Street, Nipissing

Function: Administrative Offices including Municipal Council Chambers.

Total Floor Area of Indoor Space in which Operations are Conducted:

2,340 square feet

Average Number of Hours per Week:

40 Hours



FACILITY OVERVIEW

Year of Construction: 1990 Office Building, Log Church 100+ years

Primary Heating Source: This is a seasonal facility that does not operate in the winter. No heating is required during the winter months.

Cooling is provided by air conditioning units using electricity.

KEY PHYSICAL FEATURES

The Office Building contains a working area for the Museum Manager, kitchen, bathroom, storage area and display area. An old fashioned candy shop was added in 2017.

The Log Church is an original building which is used for display purposes, it is climate controlled with a window-mounted air conditioning unit. The floor was replaced in 2018.

KEY ENERGY CONSUMING USES

Cooling units in the Log Church and the Office building. A cooling unit has also been requested for the storage building.

PROPOSED ENERGY SAVING MEASURES

- A new cooling unit was purchased and installed in the Log Church in 2013. This new unit is the most efficient available at the time of purchase.
- A new cooling unit for the Office building was purchased in 2017 and is the most energy efficient model available at the time of purchase.
- A new fridge was purchased in 2014 for use in the kitchen. This is used by the staff and during events hosted at the Museum. The freezer unit is used to store frozen yogurt for sale. Operating only 3 months out of the year, the facility is currently operating at an acceptable energy consumption rate.
- Replacement of lighting with LED lights and fixtures in the Church building was completed in 2018.

TOWNSHIP MUSEUM

4363 Highway 654, Nipissing

Function: Cultural facility.
Local heritage museum.

Total Floor Area of Indoor Space in which Operations are Conducted:

1,638 square feet

3 buildings – Office, Log Church and Garage Building

Average Number of Hours Per Week:

36 Hours

Seasonal facility – Opens in June until closing the first week of September.



FACILITY OVERVIEW

Year of Construction: 1974, renovated 2011

Primary Heating Source: propane forced air furnace

KEY PHYSICAL FEATURES

5 bays for equipment storage and maintenance.
Storage space, washroom and small office

KEY ENERGY CONSUMING USES

A propane, high-efficiency forced-air boiler system furnace was installed in 2011, replacing an aging oil-fired forced-air furnace for improved efficiency and safety.

This change also included the safe removal of an aging, above-ground fuel tank for heating oil located near the garage/office/museum water source.

The garage received new bay doors, new windows, new doors and insulation during the 2011 renovation. High efficiency lighting was also installed at that time.

PROPOSED ENERGY SAVING MEASURES

The 2011 renovations improved all aspects of energy consumption.

LED light replacements were installed on the 2016 Capital Budget, which will result in electricity consumption savings.

TOWNSHIP GARAGE

27 Beatty Street, Nipissing

Function: Public Works storage and maintenance facility for vehicles and equipment.

Total Floor Area of Indoor Space in which Operations are Conducted:

5,000 square feet

Average Number of Hours Per Week:

40 Hours



FACILITY OVERVIEW

Year of Construction: 1999

Primary Heating Source: Electric baseboard heaters

KEY PHYSICAL FEATURES

This building has a large open space provided as a warming area/changing area for hockey and ice skating. There are two washrooms and a storage area which is located in the rear of the building.

KEY ENERGY CONSUMING USES

This building has set hours but is not supervised during those scheduled hours. The lights are left on for the entire session and turned off at closing time by the Rink Caretaker. The door to the facility was replaced and participants are reminded to keep the door closed at all times by new signage.

The heating is the largest energy consumption of this facility. A faulty heating switch was detected in the summer of 2016 and repaired.

PROPOSED ENERGY SAVING MEASURES

Replace electric baseboard heaters with wall-mounted, high-efficiency electric units with a programmable thermostat to allow for consistent temperature control during all operating cycles. This will be completed as the units require replacement.

Current light fixtures shall be updated to LED light fixtures and bulbs and will include a sensor switch to ensure maximum consumption efficiency.

This will be included in the ongoing Capital Budget process.

RINK BUILDING

14 Blake Street, Nipissing

Function: Recreational facility equipped with washrooms and a heated area to accompany the outdoor rink.

Total Floor Area of Indoor Space in which Operations are Conducted:

450 square feet

Average Number of Hours Per Week:

*56 Hours

*Seasonal facility – Opens when season permits, usually January until March.



FACILITY OVERVIEW

Year of Construction: 1982 – Community Centre, 1985 – Fire Station Addition – continued renovations with last large renovation to Fire Station in 2010.

Primary Heating Source: Propane forced air furnace in Fire Station and Community Centre with baseboard heaters in the washrooms and high-efficiency wall-mount units in the Fitness Centre.

KEY PHYSICAL FEATURES

Fire Station #1 has a large bay that contains 2 Apparatus and a vehicle as well as storage of gear and a training area. There are offices, a washroom, training room and dispatch office next to the bay. This was newly renovated and added on to in 2010-2011.

The Community Centre has a large, equipped kitchen, large open space and two washrooms.

The Fitness Centre has an accessible washroom and a large open space for exercise equipment.

KEY ENERGY CONSUMING USES

Heating is the key energy consumption.

PROPOSED ENERGY SAVING MEASURES

Installation of high efficiency wall-mount units in the Community Centre washrooms will take place as the baseboard heaters fail.

Motion sensor lights were considered for the Fitness Centre as it is an un-supervised area open to members from 7 a.m. to 11 p.m. daily with a swipe card entrance; however due to safety concerns of the lights going out while someone is working out or showering this option will not be considered.

The lighting fixtures have been updated with each renovation and are being replaced with high-efficiency units as the old units require replacement. This practice will continue until all lights have been replaced.

A new door on the ramp entrance to the Community Centre has been installed in 2018. This door has a window in it, the previous door did not.

COMMUNITY CENTRE, FIRE STATION #1 AND FITNESS CENTRE

2381 Highway 654, Nipissing

Function:

Community Centre: recreational facility for community use.

Fire Station #1: Offices, training area, storage and maintenance area for all vehicles and equipment.

Fitness Centre: fully equipped fitness centre with paid memberships.

Total Floor Area of Indoor Space in which Operations are Conducted:

8,640 square feet

Average Number of Hours Per Week:

132 Hours



FACILITY OVERVIEW

Year of Construction: 1993

Primary Heating Source: Forced Air Oil Furnace

KEY PHYSICAL FEATURES

This space has a large bay which houses 2 fire apparatus as well as a shower/washroom, training area, storage area and a dispatch office.

KEY ENERGY CONSUMING USES

The 2002 forced air oil heat exchanger.

PROPOSED ENERGY SAVING MEASURES

- A propane forced air high efficiency furnace was installed in 2017, replacing the last oil-burning furnace in use in municipal facilities.
- The lights were replaced with high efficiency lighting in 2013.
- The garage bay doors were replaced in 2013 which includes improved weather stripping for more efficient heat containment.
- New windows and service door are included in the budget for 2019.

FIRE STATION #2

3509 Highway 534, Nipissing

Function: Training, dispatch, vehicle equipment maintenance and storage.

Total Floor Area of Indoor Space in which Operations are Conducted:

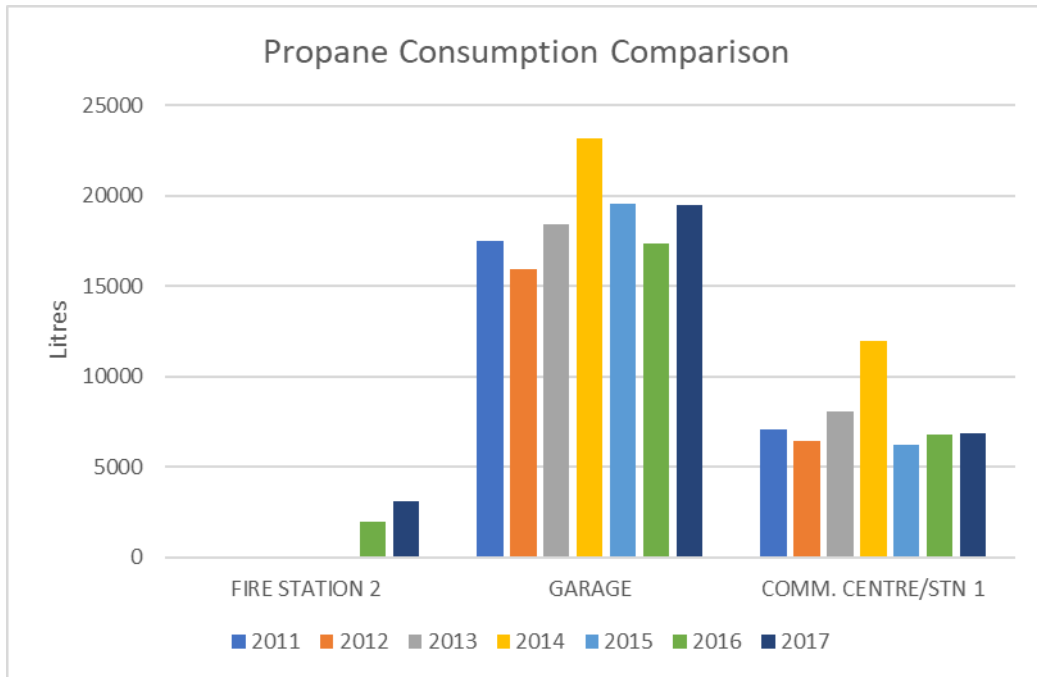
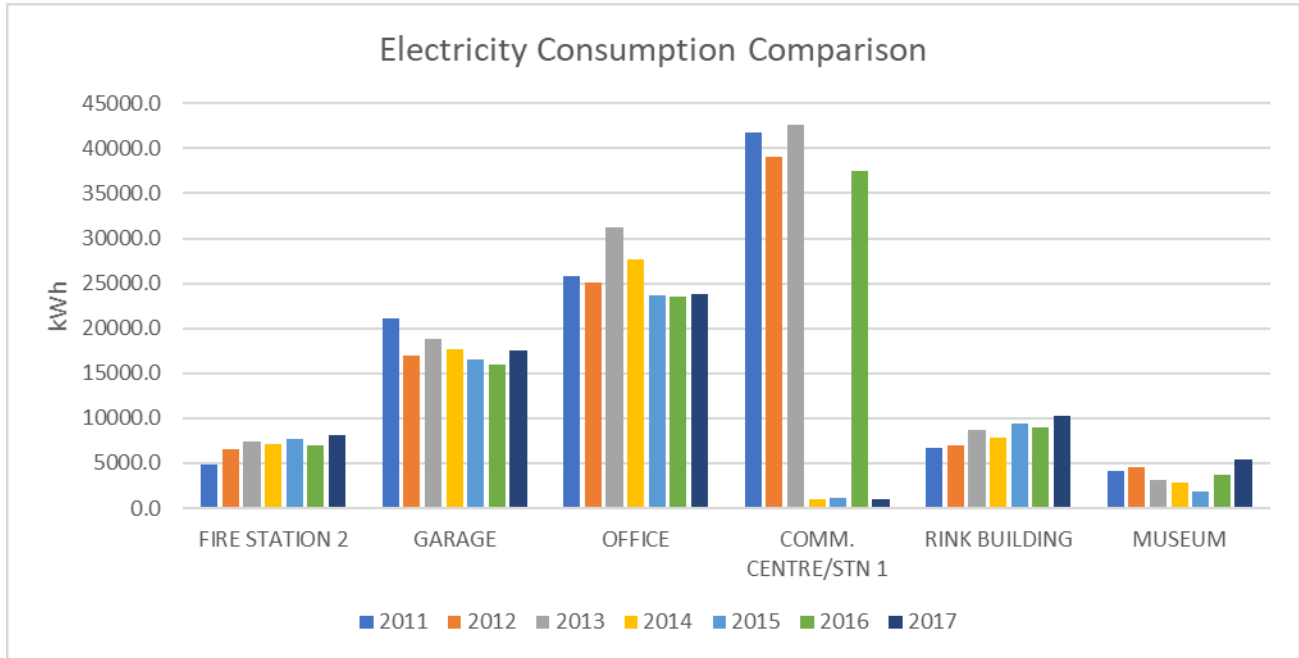
1,584 square feet

Average Number of Hours Per Week:

20 Hours



Annual Energy Consumption Comparison Information



Goals and Objectives

The Township of Nipissing is located in a rural area without access to a natural gas pipeline as a source of energy. Residents rely on heating oil, propane, electricity and wood burning appliances for heat. The Township facilities are also reliant on these sources however through continual upgrades to protect the investment in these assets, most of these heating sources are high-efficiency.

The Township recognizes that some changes can be made and will budget for those upgrades and changes in a fiscally responsible manner utilizing the Capital Forecast document which accompanies the annual budget process. The goal for energy consumption reduction remains 5% over the five-year plan, which results to a 1% decrease per year, however the weather patterns, seasonal changes and service requirements will continue to affect the usages.

The Township will be continuing a conversion of the current street lights to LED fixtures.

For more information on this plan and energy conservation within the Township of Nipissing please contact the Township of Nipissing Office at 45 Beatty Street, 705-724-2144 or by email at admin@nipissingtownship.com.