



Energy Conservation and Demand Management Plan

Township of Perry: 2020 to 2024

1. Declaration of Commitment

Ontario Regulation 507/18 Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans requires broader public sector (“BPS”) organizations, such as municipalities, to develop a CDM plan and update it every five years. The Township of Perry’s updated CDM plan was developed in compliance with the regulation and covers the period from 2020 to 2024.

Vision

The Township of Perry will strive to continually reduce our total energy consumption and associated greenhouse gases (GHGs) through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service for the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the Township. Total energy consumption includes electricity, natural gas, propane, and oil. Everyone has a role in the wise use of energy and to showcase appropriate leadership within municipal facilities and operation.

Goals

The Township of Perry Energy Conservation and Demand Management Plan has been completed to help achieve the following goals:

- Maximize fiscal resources and avoid cost increases through direct and indirect energy savings
- Reduce the environmental impact of the Township's operations
- To create a culture of conservation within the Township

The updated CDM plan builds upon the Township’s first plan developed in 2014, and the experience gained in energy conservation over the past six years. The Township of Perry’s energy conservation and demand management measures will be in place for the next four years at the very least. Following that time, a renewed plan will be required in order to meet future needs.

Hard copies of this plan will be made available upon request from the Township office.

Overall Target

The Corporation of the Township of Perry will reduce overall municipal energy consumption by 5% from 2020 to 2024.

Objectives

In order to meet the strategic goals of the Energy Conservation and Demand Management Plan, there are a number of goals and objectives that align with its development and implementation:

- Ensure energy efficiency consistency across municipal facilities
- Monitor and report on energy consumption in annual intervals
- Better analyze energy costs and look for savings opportunities. This will include looking at energy commodity procurement options and taking advantage of all available resources and funding for energy projects
- Raise staff and Council awareness around energy efficiency

- Identify and investigate renewable energy generation opportunities

2. Introduction

The Township of Perry is a medium sized municipality located in the Almaguin Highlands. With a population of 2,454 permanent residents (2016 census), the Township is rural in nature.

The Township of Perry owns and/or is responsible for managing the energy consumption of the following buildings:

- Township Office: The Municipal Office is a 5,476 square foot building, divided between the municipal office and the Almaguin Highlands Information Center. Electricity costs for this facility are split between the two, with 60% allocated to the office and 40% allocated to the information center.
- Emsdale & Novar Community Centers: The community centers are 3,036 and 3,174 square foot facilities, respectively. Both facilities are available for rental to the general public.
- Township of Perry Transfer Station: The transfer station is a 3,048 square foot facility, allowing residents to drop off garbage, recycling, and other materials for eventual disposal. The office portion of the facility is heated using electricity, while the remainder is heated using propane.
- Public Works Garage: The garage is a 5,280 square foot facility and serves as the offices for the public works and roads department, as well as the garage for their equipment.
- Township of Perry Public Library: The library is a 1,740 square foot building, located at 29 Joseph Street in Emsdale.
- Emsdale Rink: A 4,240 square foot covered outdoor rink and a public washroom, located at 32 Joseph Street in Emsdale. Electricity costs for this facility include the cost of the lights on the property and heat for the washroom building.
- Novar Rink: A 12,045 square foot outdoor rink and changeroom building, located at 54 McCrandle Street in Novar. Electricity costs for this facility include the cost of the lights on the property and heating for the changerooms.
- Novar Recreation: A 3,000 square foot facility located at 54 McCrandle Street in Novar. The building is home to the Parks and Recreation department, and serves as office space, as well as a garage for their equipment. Up until 2019, the facility was used to house the Novar Fire Department, but the Fire Department was dissolved upon the completion of the new fire hall in Emsdale and the building repurposed for the Parks and Rec Department.
- Perry Township Fire Department: The Perry Township Fire Department is a 4,751 square foot facility located at 64 Old Government Road in Emsdale. Previously a 3,036 square foot facility at 16 Ellen Street used to house the Township Fire Department until 2015 when it was decommissioned, and the hydro was shut off. As of 2019, the old facility has been demolished and turned into a parking lot containing the P.O. Boxes in Emsdale.
- Emsdale & Novar Street Lights

3. Organizational Understanding

Energy Needs

The Township of Perry requires reliable, low-cost, sustainable energy sources delivering energy to the most efficient facilities and energy-consuming technology feasible.

Summary of Current Energy Consumption, (2013)

Electricity energy consumption: 364,954 kWh

Natural gas consumption: 8,665.24 m³
 Fuel Oil consumption: 11,676.70 L
 Propane consumption: 14,164.70 L

Summary of Current Energy Consumption, (2018)

Electricity energy consumption: 236,729.00 kWh
 Natural gas consumption: 8,338.19 m³
 Fuel Oil consumption: 7,753.60 L
 Propane consumption: 21,568.60 L

Overall Change in Municipal Energy Consumption 2013-2018

Consumption	Electricity	Natural Gas	Fuel Oil	Propane
2013	364,954.00	8,665.24	11,676.70	14,164.70
2018	236,729.00	8,338.19	7,753.60	21,568.60
Increase (Decrease) in Consumption	-35%	-4%	-34%	52%

Renewable Energy Utilized or Planned

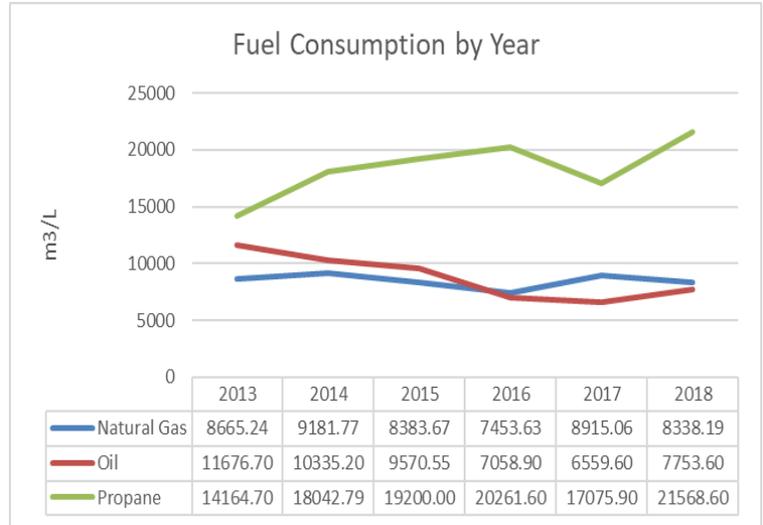
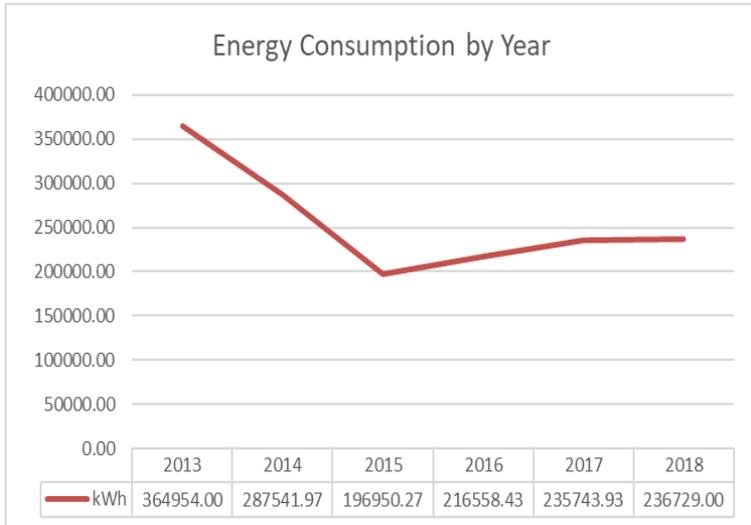
The Township of Perry will continue to investigate and show leadership in the promotion and development of renewable energy systems that are compatible with the Township’s Asset Management Plan and land use planning objectives.

4. Results from the Previous Plan

The previous Energy Conservation and Demand Management Plan set out an overall goal of reducing energy consumption across all operations by 5%. Below is a graph illustrating the energy consumption by year for the period covered under the previous report. As can clearly be seen, the Township’s total energy consumption in terms of electricity decreased until 2016, where it then increased until 2018; however, the overall decrease for the period was in excess of 35%. From a fuel perspective, no specific goal was established, however the overall usage of natural gas and furnace oil decreased over the period, but propane usage drastically increased over the same period.

The Township was successful in implementing several of the measures set out in the last plan, including:

- Installing energy efficient lighting where feasible;
 - In 2016, the Township completed a streetlight retrofit, replacing the old high-pressure sodium bulbs with LED lights. This has led to a decrease in energy costs from \$6,690.63 in 2014 to \$4,334.23 in 2018. These new LED bulbs have an expected lifespan of 12-15 years.
- Installing programmable thermostats; and
- Inspection and maintenance on damaged building envelopes



Given these results, it can be said that the township was moderately successful in achieving its objectives as set out in the previous CDM plan. However, progress must still be made in order to ensure that measures are taken to continue the reduction of energy consumption across all operations for years to come.

5. Resources Planning

Energy Leader

The Manager of Facilities will be designated as our energy leader with overall responsibility for Township energy management.

On a biannual basis, department heads will be provided with energy reports for the facilities they are responsible for. Reports will include the energy consumption for periods October-March, and April-September with comparative prior year consumption data. These reports will allow department heads to compare energy consumption with that of the same period in the prior year in order to evaluate the progress that has been made towards the overall reduction target. Department heads will review the results with staff and seek input and recommendations on procedures and items that will assist in reducing energy consumption. They will review recommendations and action items or bring forward recommendations to the Manager of Facilities in cases where proposed changes may require alterations to building envelopes. Finally, the department heads will report items they have introduced to reduce energy consumption to the Manager of Facilities.

6. Projects Execution

Municipal Level

The Township of Perry will carry out the required development of business procedures, communication programs and implement them methodically according to the planned timelines within the resource constraints that apply. The administration and implementation of this plan will be the responsibility of the Senior Management Staff. It will be the responsibility of all Township staff to be aware of their energy use and work towards conservation. Through staff engagement and energy management processes, staff will be able to see the results of their efforts, and benchmark between corporate facilities and with industry standards.

Asset Level

The Township of Perry will use department employees to facilitate the implementation of procedures and communication initiatives, including energy performance reporting. In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although management staff have the lead responsibility in ensuring Township facilities operate efficiently, all Township staff should be familiar with and utilize energy efficient measures where possible. In addition, any facilities requiring rehabilitation, renewal and/or replacement will incorporate energy saving strategies where possible.

7. Review

Plan Review

Township Staff will review and evaluate our energy plan on an ongoing basis, revising and updating it, as necessary, while taking into consideration the Energy Consumption Reports that are submitted to the Ministry of Energy on an annual basis as required under Regulation 397/11.

Reports

Annual energy performance summary reports will be posted on the website to allow the general public to be apprised of energy performance of municipal facilities and the impact of implemented energy management measures where appropriate.

8. Evaluation Progress

Energy Consumption

The Township will continue to track and report on energy consumption as part of our regular reporting on energy consumption. Annual data will be compared to that of previous years in order to determine the effectiveness of the Energy Conservation and Demand Management Plan.

Green House Gas Emissions

The Township will continue to track and report on GHGs as part of our regular reporting on energy consumption and will evaluate progress in this area against our overall reduction target.

9. Proposed Energy Conservation Measures

Energy conservation measures can be categorized as organizational, behavioural, or technical, and financial prioritization shall be evaluated using metrics such as the internal rate of return, profitability index, and simple payback period.

Implementation of the proposed projects is dependent on the:

- Incentives from utilities companies;
- Availability of funding; and
- Retention of a qualified contractor to implement the initiative.

Progress on projects will be monitored using the annual energy reports prepared under the regulation.

Organizational Measures

- Implementing a temperature setpoint policy for all buildings, where feasible. The United States Department of Energy notes that temperature setpoint policies can reduce overall energy consumption by 5-12%.
 - Cost: none
 - Payback: Immediate
 - Ongoing Application
- Implementing an energy efficiency purchase standard, whereby potential asset purchases will be subject to energy use evaluations. In the decision-making process, preference will be given to assets that use less kWh or are Energy Star rated.
 - Cost: none
 - Payback: Immediate
 - Ongoing application

Behavioural Measures

- Review building systems every month to ensure temperature and lighting schedules are at their required levels.
 - Cost: minimal, as it is part of routine checks
 - Payback: Immediate
 - Ongoing application
- Encourage staff to take measures that would reduce their energy consumption in the workplace. This could include turning off lights when not in use or using heat or air conditioning only when necessary.
 - Cost: none
 - Payback: Immediate
 - Ongoing application

Technical Measures

- Removal of the current drop ceiling and insulation located in the Public Works Facility, and re-insulation of the roof using spray foam, as well as the installation of a new heating system. The new heating system and insulation will allow for more efficient heating of the facility.
 - Cost: Estimated at \$80,000
 - Payback: unknown
 - Lifespan: spray foam: 50+ years, heating system: 15-20 years
- Repurposing the insulation that is removed from Public Works at the transfer station, to help insulate the rafters in the warehouse/garage portion of the facility. Steel will be purchased, and the insulation will be placed in between the steel and the rafters, allowing for more efficient heating of the facility.
 - Cost: Estimated at \$10,000
 - Payback: unknown
 - Lifespan: 50+ years
- Demolition of the existing facilities and construction of a new facility to replace both the Emsdale Community Center and the Public Library. As the community center is over 100 years old, the energy efficiency is quite poor, and the construction of a new facility will allow for energy efficient appliances and systems to be easily implemented into the building. The current facilities will remain in use until the construction of the new building is complete, at which time they will be demolished.
 - Cost: Estimated at \$3,500,000
 - Payback: unknown
 - Lifespan 50+ years

10. Confirmation

This CDM plan has been approved by Township administration as per Regulation 397/11. It will be available on the township website (www.townshipofperry.ca) and paper copies will be made available at the township office: 1695 Emsdale Road, Emsdale ON, P0A 1J0.