Energy Conservation and Demand Management Plan

2020-2024

July 1, 2019

Township of Hornepayne

Disclaimer: This document has been prepared by the Ontario Clean Water Agency on behalf of the Township of Hornepayne in accordance with *Ontario Regulation 507/18* under the *Electricity Act, 1998* for submission to the Ministry of Energy, Northern Development and Mines. This Plan is constantly evolving and may be revised to reflect the most current information and circumstances. The Township of Hornepayne, its council, directors, officers, shareholders or representatives do not accept any liability whatsoever by reason of, or in connection with, any information in this document or any actual or purported reliance on it by any person. The Township of Hornepayne may update any information in this document at any time.

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Executive Summary

In 2014, the Township of Hornepayne developed a five year Conservation and Demand Management (CDM) Plan for the Township as per the requirements of *Ontario Regulation 397/11* under the *Green Energy Act, 2009* (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans). This regulation was revoked on *January 1, 2019* and replaced with *Ontario Regulation 507/18* under the *Electricity Act, 1998*.

The Township of Hornepayne retained the Ontario Clean Water Agency (OCWA) to build on the Township's first CDM Plan originally developed in 2014 incorporating the experience gained in energy conservation over the last five years. This updated CDM plan was developed as per the regulation and guidelines provided by Ministry of Energy, Northern Development and Mines and covers the period from 2020 to 2024. The plan was presented to Council and approved on June 19, 2019.

The plan describes our Township's:

- New energy conservation goals and objectives;
- Current and proposed energy conservation measures;
- Results from the first CDM plan; and
- Changes made from the previous plan to help achieve the new goals and objectives.

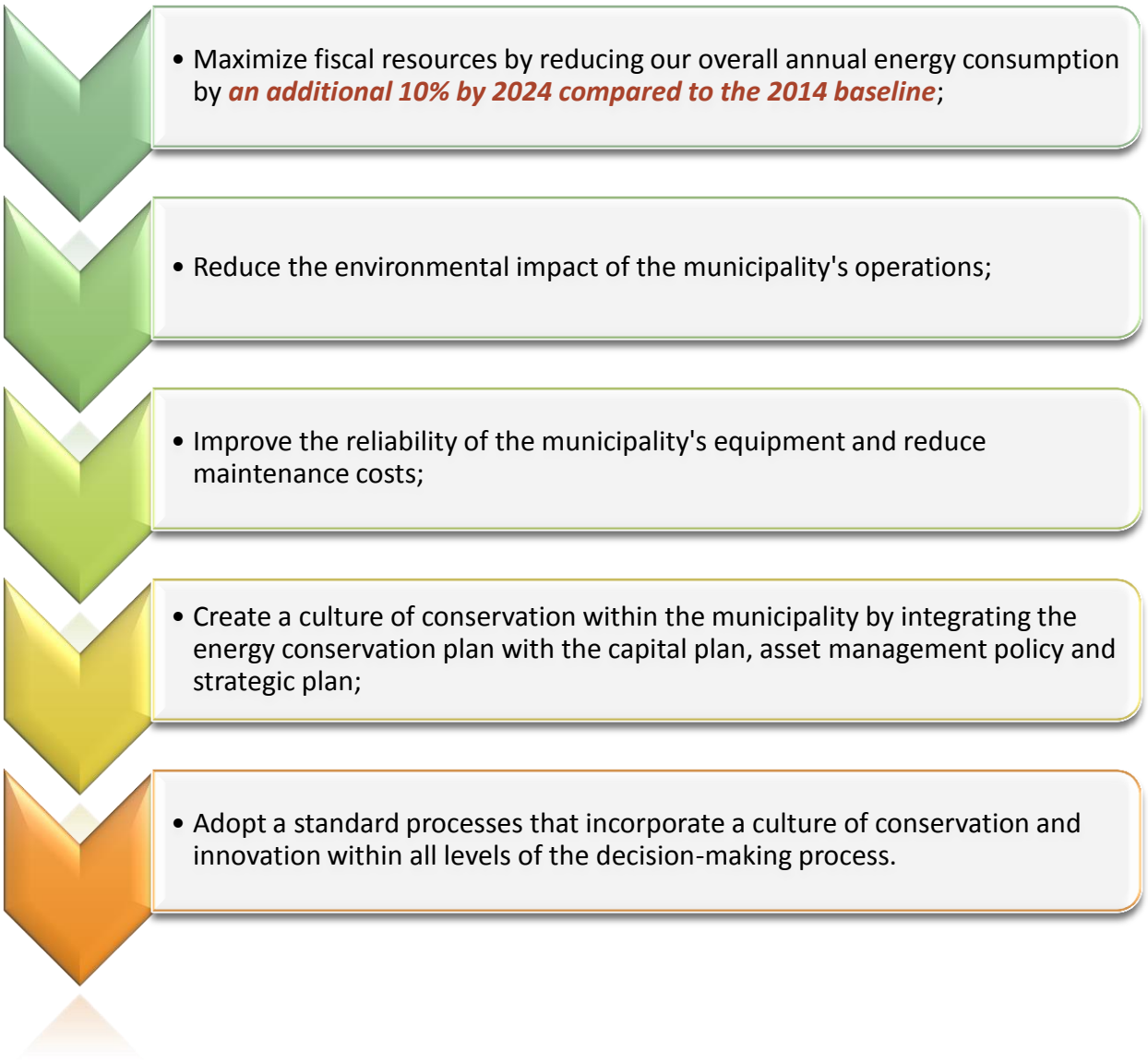
The Corporation of the Township of Hornepayne will incorporate energy efficiency into all areas of our activity including our organizational and human resources management procedures, procurement practices, financial management, investment decisions, and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs will be factored into the lifecycle cost analysis and asset management analyses and policies of the municipality. All departments have clear links to some or all of the goals and objectives of the Energy Conservation and Demand Management Plan.

This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the municipality.

The Township of Hornepayne will champion for energy management, develop the required skills and knowledge, manage energy information, communicate with stakeholders, and invest in energy management measures. As an integral component of the management structure, the CDM Plan is to be coordinated with the municipality's budget planning, strategic plan, purchasing policy, preventative maintenance plans, environmental management plan, asset management plan and the policy development process.

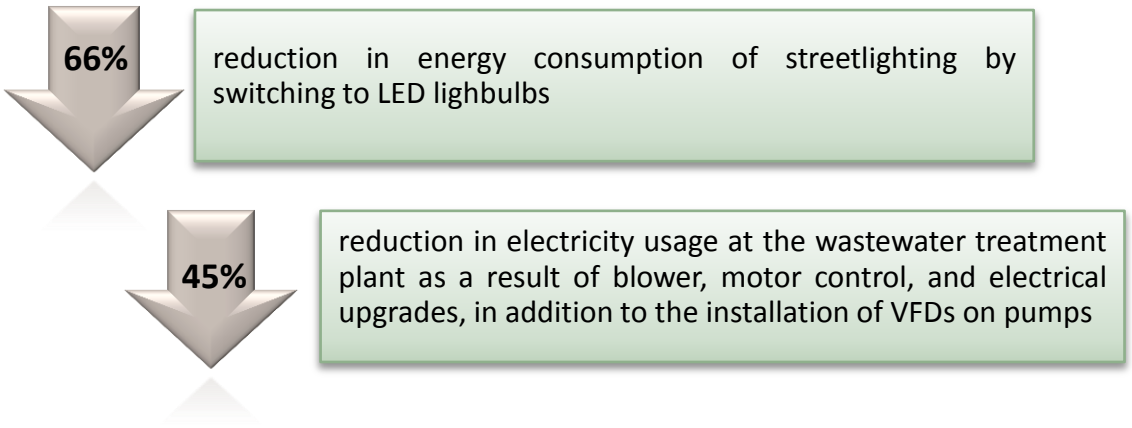
We will strive to continually reduce our total energy consumption and associated greenhouse gases (GHGs) through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service for our clients and the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the municipality. Total energy consumption includes electricity, propane and oil.

The Corporation of the Township of Hornepayne's Energy Conservation and Demand Management Plan was completed to help achieve the following goals:



Overall electricity consumption across all municipal buildings reported on was ***reduced by 25% by 2018*** compared to the 2014 baseline while heating oil consumption across all municipal buildings reported a ***decrease of 46%.***

The greatest reductions were:



In addition to the municipality benefitting from reducing its energy use, residents and local businesses also benefit from more efficient use of tax payer dollars and better maintained/operated public buildings and facilities.

While the Township far surpassed its conservation objectives from the 2014 plan, we recognize other measures could take place to ensure savings continue and that new conservation measures are identified and acted upon. Our key changes to ensure the success of our updated plan include creating a formal Energy Management Committee from the existing Energy Plan Task Force and ensuring staff are trained on energy conservation and building operations.

The Corporation of the Township of Hornepayne will continue to find innovative and cost efficient solutions regarding energy consumption.

The Township of Hornepayne will strive to ***reduce our energy consumption by an additional 10% in municipal operations by 2025 compared to the 2014 baseline***. This Energy Reduction Target will apply to all departments and facilities owned by the Municipality. Included herein are the measures that will be undertaken to support the achievement of that goal.

Introduction

In 2014, the Township of Hornepayne developed a five year Conservation and Demand Management (CDM) Plan for the Township as per the requirements of *Ontario Regulation 397/11* under the *Green Energy Act, 2009* (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans). This regulation was revoked on *January 1, 2019* and replaced with *Ontario Regulation 507/18* under the *Electricity Act, 1998*.

Under *Ontario Regulation 507/18,* the requirements for broader public sector energy planning and reporting are identical to those under the former *Ontario Regulation 397/11*.

The Township of Hornepayne retained the Ontario Clean Water Agency (OCWA) to build on the Township's first CDM Plan originally developed in 2014 incorporating the experience gained in energy conservation over the last five years. This updated CDM plan was developed as per the regulation and guidelines provided by Ministry of Energy, Northern Development and Mines and covers the period from 2020 to 2024. The plan was presented to Council and approved on June 19, 2019.

The baseline GHG emissions and energy consumption report reflects data gathered and submitted to the Ontario Ministry of Energy, Northern Development and Mines on July 1, 2013 for the year 2011, as required by *O. Reg. 397/11*. In order to review the results and accomplishments of the 2014 to 2019 CDM plan targets and objectives and to determine the present state of energy management in the Township of Hornepayne, we have summarized the energy and GHG reports for 2011 to 2018 in Schedule 1.

Additionally, this plan incorporates the results of the energy conservation activities including energy audits and studies conducted throughout several key facilities owned by the Township, historical data of energy use, and actions and steps already taken with the intention of realizing energy savings.

The plan describes our Township's:

- New energy conservation goals and objectives;
- Current and proposed energy conservation measures;
- Results from the first CDM plan; and
- Changes made from the previous plan to help achieve the new goals and objectives.

In addition to energy conservation, the updated CDM plan supports our capital plan and other key strategic plans. This CDM Plan is intended to serve as a guide for staff and Council during the capital planning and budgeting process.

The Township of Hornepayne is faced with increasing infrastructure costs for roads, bridges, sewer, water and distribution as well as increasing energy costs affecting all of its facilities. As such, Hornepayne must explore all avenues for cost savings, including energy efficiency projects. In that sense, ***this plan represents an important financial tool for the Township of Hornepayne.***

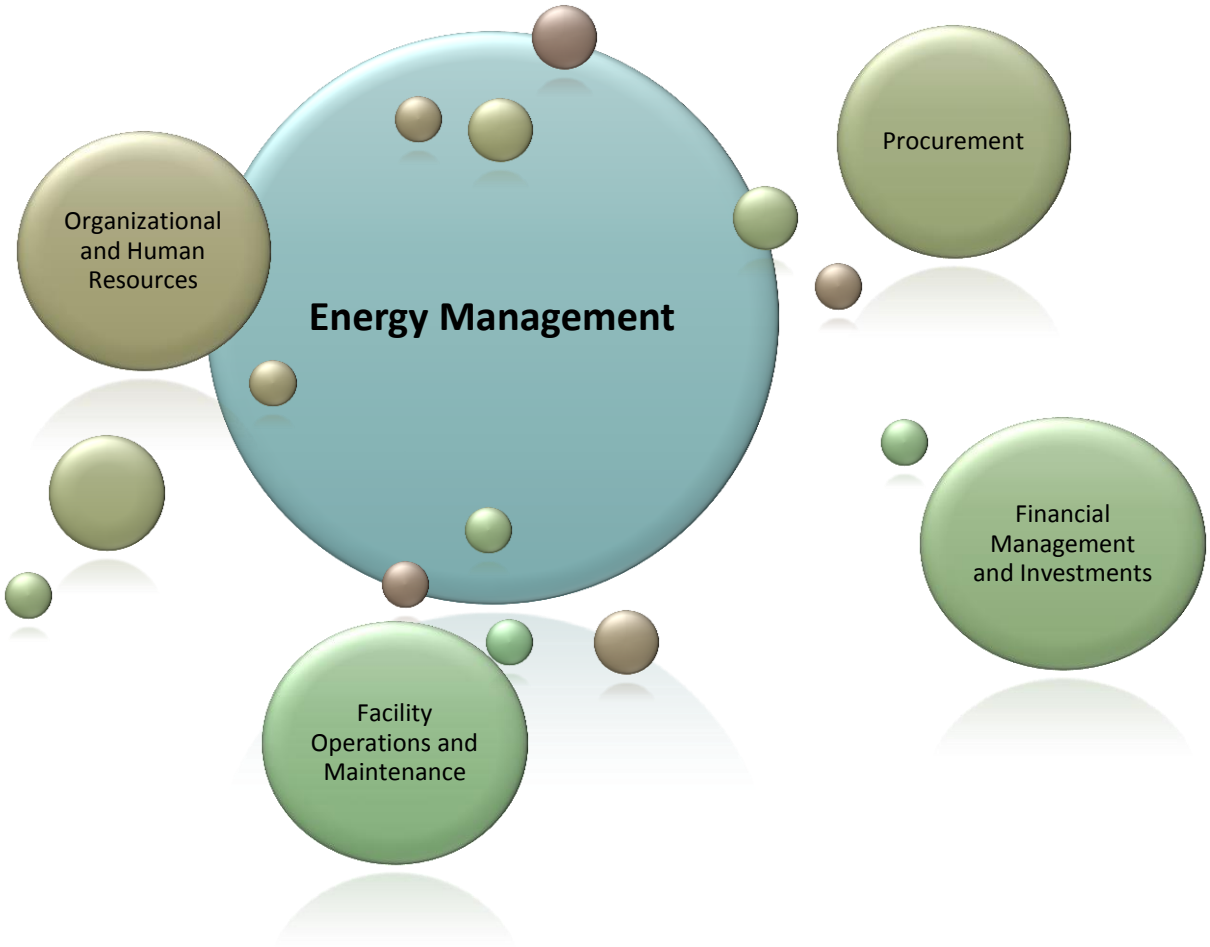
Hard copies of the plan are available at the Town Hall located at 68 Front Street in Hornepayne.

Policy

The Corporation of the Township of Hornepayne will incorporate energy efficiency into all areas of our activity including our organizational and human resources management procedures, procurement practices, financial management, investment decisions, and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs will be factored into the lifecycle cost analysis and asset management analyses and policies of the municipality. All departments have clear links to some or all of the goals and objectives of the Energy Conservation and Demand Management Plan.

Commitment

The Township of Hornepayne will champion for energy management, develop the required skills and knowledge, manage energy information, communicate with stakeholders, and invest in energy management measures. As an integral component of the management structure, the CDM Plan is to be coordinated with the municipality's budget planning, strategic plan, purchasing policy, preventative maintenance plans, environmental management plan, asset management plan and the policy development process.



Declaration of Commitment by Council Resolution

The Corporation of the Township of Hornepayne has allocated the necessary resources to develop, implement and update an Energy Conservation and Demand Management Plan as required by *Ontario Regulation 507/18* under the *Electricity Act*. Council supports energy planning because it will help avoid cost increases, improve service delivery, and support local industry while protecting human health and the environment. Our Energy Conservation and Demand Management Plan reinforces the Township's commitment to the reduction of municipal energy consumption and its resulting environmental impacts. Staff and council will ensure that the objectives presented in this plan are achieved and that progress towards those objectives is monitored and reported on an ongoing basis. Staff and council will update the plan as required under *Regulation 507/18* of the *Electricity Act* or any subsequent legislation.

Municipal Energy Background

Increased economic activity in Ontario results in rise of GHG emissions and presents a challenge to fulfilling the provincial environmental objectives expressed in the government's Made-in-Ontario Environment Plan.

Optimizing energy consumption will be essential if we are to meet future energy needs and witness a global transition to sustainable energy sources. The Township must implement changes in the way we use energy to meet our needs (energy conservation) and use the most efficient equipment and measures (energy efficiency) to reduce consumption and costs.

Energy consumption and costs are relatively high in Ontario. The figure below shows the significant increase in electricity costs over the last decade, taxing municipal reserves.

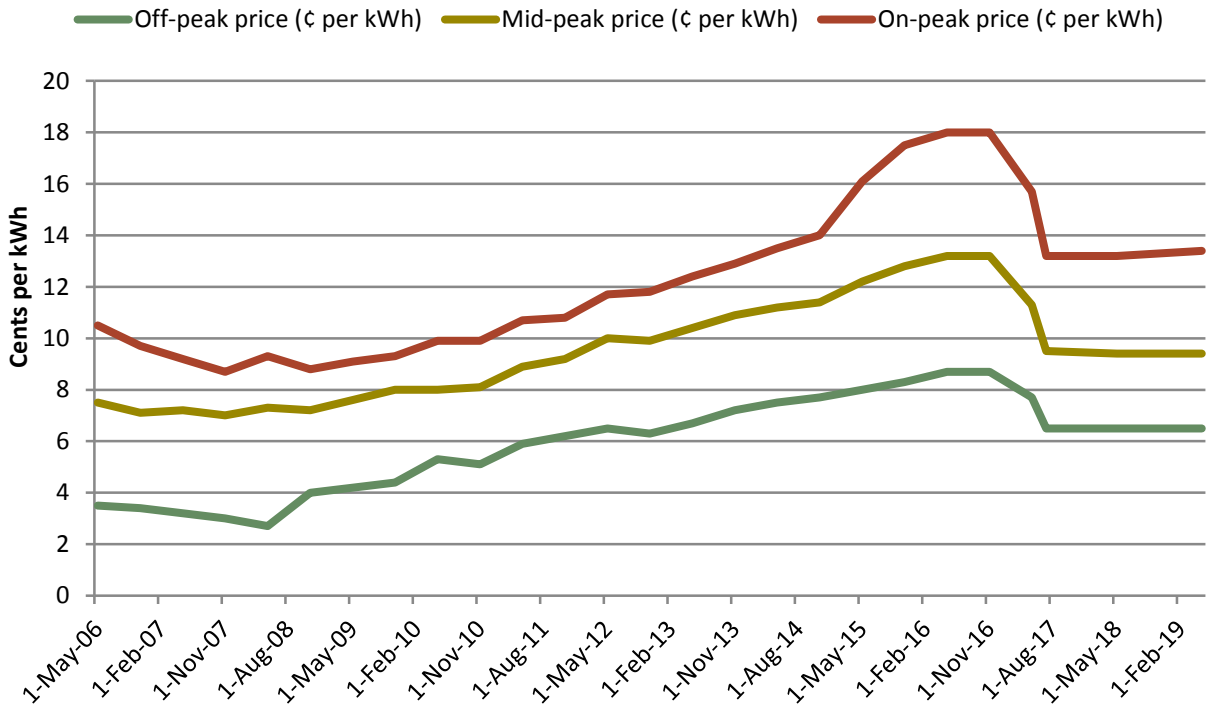


Figure 1: Historical TOU Electricity Rates[1]

In 2014, the primary source of energy for municipal operations (facilities, social housing, and street lighting) in Ontario was electricity (63%) and natural gas (35%), with minor use of other fuels including hot water and steam from district heating, chilled water from district cooling, propane, and fuel oils. Municipalities spent an estimated $917 million on electricity and $105 million on natural gas in 2014[2].

[1] Ontario Energy Board, 2019
[2] Ontario Municipal Energy Profile, ICF, 2018
[3] Study Report: Market Characterization & Conservation Potential for Ontario's Drinking Water & Wastewater Treatment Plants (Dec. 2018), IESO, Posterity Group, 113.

The Ontario water and wastewater treatment sectors are the largest municipal electricity consumers, representing more than a third of annual electricity consumption. In 2011, water and wastewater systems used about 1,815 gigawatt-hours (GWh) of electricity (enough to power about 200,000 homes) and 40 million m^3 of natural gas (enough to heat approximately 15,000 homes). This energy use may rise due to ever-more stringent treatment requirements, but these systems also have many opportunities to become more energy efficient, and even to generate renewable energy.[4]

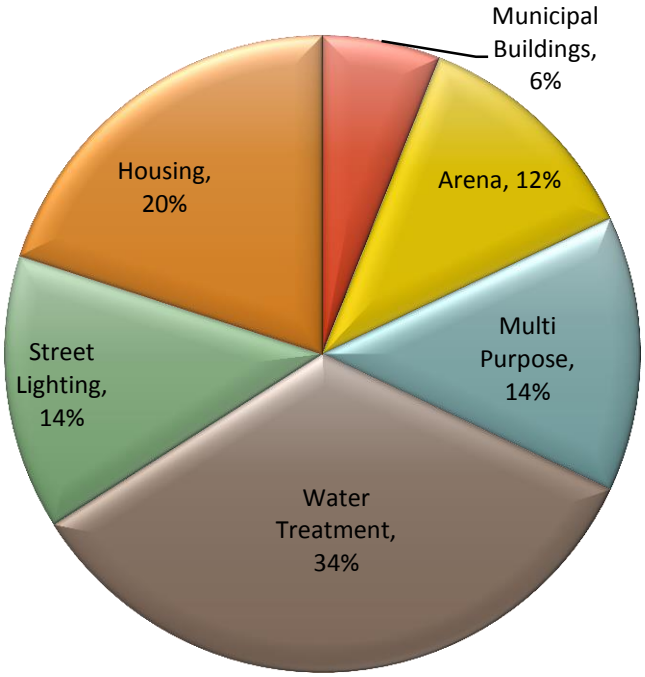


Figure 2: Municipal Energy Use by Sector in Ontario[3]

Managing municipal energy consumption efficiently means providing the same services with less energy. Energy conservation measures are often the lowest cost options for providing many other environmental, economic and social benefits. This also results in cost savings, lower environmental load by avoiding GHG and local air, water and land emissions associated with energy production and consumption, local economic development opportunities and associated new jobs, enhanced reliability of energy systems, and reduced price volatility, and improved energy supply security.

Municipal Energy Needs

Our Municipal Energy Needs: The Township of Hornepayne requires reliable, low-cost, clean, and sustainable energy sources delivering energy to facilities and energy-consuming technology. This is essential to achieve the economic growth and quality livelihood in the community.

Stakeholder Needs: Internal stakeholders (Council, CAO, staff) need to be able to clearly communicate the corporate commitment to energy efficiency, and to develop the skills and knowledge required to implement energy management practices and measures. External

[4] Every Drop Counts, ECO, 2017

stakeholders (the Province, community citizens and groups) need the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services and infrastructure.

Municipal Energy Overview

Our assessment of organizational capacity for energy management with respect to energy policy; organizational structure, employee awareness, skills and knowledge, energy information management, communications, and investment practices indicates the following issues:

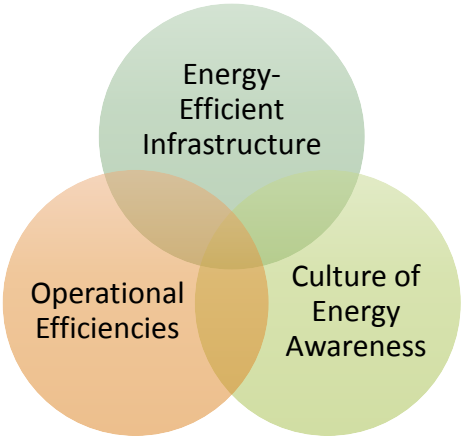
- Energy use and costs continue to increase and are forecast to increase further.
- Energy is not visible to municipal decision makers such as Council, senior management, front-line staff, and members of the public. This leads to a lack of understanding of the costs of energy and the opportunities for energy efficiency.
- Occasional efforts are made to raise general staff awareness about energy.
- Additional municipal responsibilities and services have had an important impact on existing facilities and several of these facilities can no longer operate under the existing physical conditions.
- The requirement for this Energy Conservation and Demand Management Plan provides an opportunity to build upon current initiatives such as the Asset Management Plan, Municipal Service Delivery Review and the Municipality's Strategic Plan and introduce efficiency and innovation in decision making process.

Vision

We 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 our clients and the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the municipality. Total energy consumption includes electricity, propane and oil.

This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the municipality.

This vision can be achieved through the integration of energy efficient facility infrastructure, operational efficiencies, and building the foundation for a culture of energy awareness and knowledge within the municipality. Introduction of innovation, optimization and efficiency in all aspects of operational decision-making will assist in achieving the vision.



While commitment from Council and Senior Management is crucial, everyone has a role in the wise use of energy and to showcase appropriate leadership within corporate facilities and operations.

Goals

The Corporation of the Township of Hornepayne's Energy Conservation and Demand Management Plan was completed to help achieve the following goals:

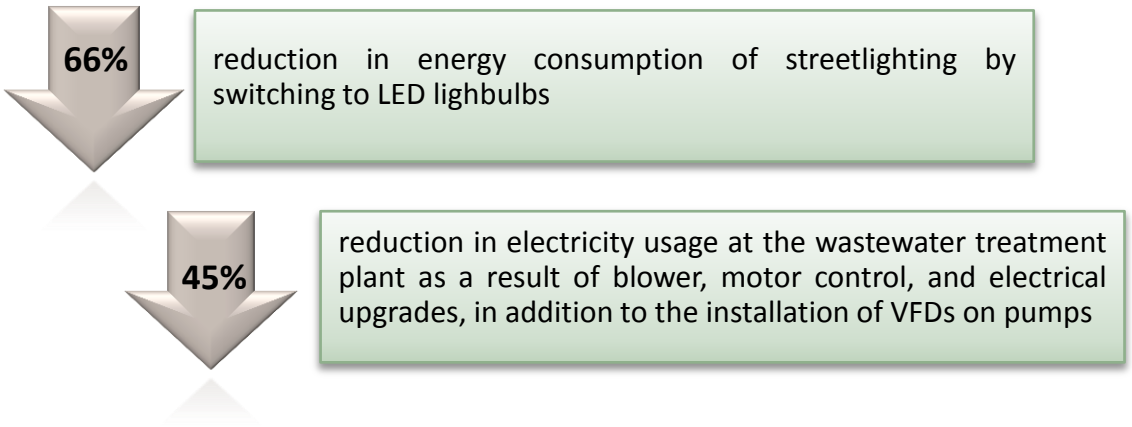
- Maximize fiscal resources by reducing our overall annual energy consumption by ***an additional 10% by 2024 compared to the 2014 baseline***;
- Reduce the environmental impact of the municipality's operations;
- Improve the reliability of the municipality's equipment and reduce maintenance costs;
- Create a culture of conservation within the municipality by integrating the energy conservation plan with the capital plan, asset management policy and strategic plan;
- Adopt a standard processes that incorporate a culture of conservation and innovation within all levels of the decision-making process.

2014-2019 Energy Targets and Consumption

2014-2019 Energy Consumption Summary

Overall electricity consumption across all municipal buildings reported on was ***reduced by 25% by 2018*** compared to the 2014 baseline while heating oil consumption across all municipal buildings reported a ***decrease of 46%.***

The greatest reductions were:



In addition to the municipality benefitting from reducing its energy use, residents and local businesses also benefit from more efficient use of tax payer dollars and better maintained/operated public buildings and facilities.

Please see Schedule 1 for a detailed analysis of the Township's energy consumption from 2011 to 2018.

Tracking Energy Consumption and Savings

Annual energy consumption reporting is a requirement under the regulation and allows our Township to understand how energy is used in our buildings, identify potential energy conservation opportunities and track progress on energy conservation efforts. In addition to including the municipality's 2017 annual energy report as required under the regulation, we have also included and considered our 2018 annual energy consumption information, which helped us to report on our achievements and inform the development of new measures (see Schedule 1). Our previous years' annual energy reports, along with the 2014 energy conservation and demand management plan can be found on our website.

2014-2019 Energy Reduction Targets

The Corporation of the Township of Hornepayne has taken significant steps in reducing the amount of energy consumption throughout municipal facilities and equipment. Our staff by

teamwork, communication and commitment will be able to find more efficient and effective ways to reduce consumption of energy during the delivery of municipal services to the citizens of Hornepayne.

The Township of Hornepayne has taken several measures to ensure that energy conservation remains a priority. The Township monitors on a quarterly and yearly basis the hydro usage of each municipally-owned building. The hydro usage data is analyzed and used for targeting possible cost/energy efficiency measures. Similarly, the Township has contracted its water and wastewater treatment facilities' operating authority (OCWA) to conduct quarterly assessments of the Township's water and wastewater facilities' electricity consumption to monitor trends and identify efficiency measures in the facilities.

As shown in the table below, the Township has engaged OCWA to develop and carry out energy efficiency activities in the water and wastewater systems. The OCWA energy team did an energy walkthrough for both facilities in 2014 and completed the energy monitoring in 2016. Based on these reports, multiple energy efficiency projects were carried out.

The following table provides a summary of initiatives and changes that have occurred in the Township's facilities in order to reduce energy costs and or usage.

Efficiency Measure	Description	Status
Municipal Office and Fire Hall	LED Office lighting, LED Exit Lights	Completed prior to 2014
Repair Arena Roof	Increase R Value	Completed 2014
Repair to Curling Club Roof	Increase R Value	Completed 2014
LED Street Lights	Project under way to convert existing street lights to LED	Completed 2015
Retrofit/Upgrade of Waste Water Facility	Upgrading pumps and motors to more energy efficient ones – $4,000,000 • 6 sewage pumps replaced with premium efficiency motors • 3 VFDs installed • Electrical upgrades	Completed 2016/2017
180 Front Street	Replaced rooftop unit – changed from electrical to propane heat	Completed 2017
Replaced Hot Water Heaters	Hot water tanks at arena replaced with newer models = less energy consumption as more energy efficient	Completed 2018

Upgrades/Rehab of Water Tower	Upgrading pumps and motors that are more efficient and consume less energy • 3 booster pumps replaced, including control panels • Electrical upgrades	Completed 2018
Installation of Log meters for Curling Club and Arena Ice Plants	Collection of hours of use for curling club and arena ice plant	Completed 2018
Arena and Curling Club Buildings	LED lighting for arena ice surface, LED exit lights for arena, LED lighting for curling club ice surface, new insulated exterior doors, replaced fuel oil furnace with propane furnace	Completed 2018
Upgrade of Waste Water Facility	VFDs for high lifts	Completed 2019
Energy Conscious Procurement	Training of all Staff to seek cost savings and energy efficiency during purchasing process	Ongoing
Upgrade of Fleet Vehicles	When looking to replace old model of fleet vehicles purchase vehicles with smaller engines which use less fuel	Ongoing

Energy Projects and Studies Completed

Energy Audit completed by Ontario Clean Water Agency at Water Treatment Facility

- ✓ October 2014

Energy Audit completed by Ontario Clean Water Agency at Wastewater Treatment Facility

- ✓ October 2014

Energy Retrofit at following locations with Save on Energy Program: Municipal Office and Fire Hall, Public Works Garage, Wastewater Treatment Facility and Garage, Municipal Airport Terminal and Garage

- ✓ 2012-2014

Energy walk-through and monitoring at Wastewater Treatment Facility

- ✓ 2014-2016

Energy Audit completed at the following locations with intention of applying for funding to construct multi-use net zero facility: Municipal Office, Fire Hall, and Library

- ✓ 2018

Lighting Audit completed at Municipal Arena

- ✓ 2018

The Corporation of the Township of Hornepayne will continue to find innovative and cost efficient solutions regarding energy consumption.

Updates on 2014 CDM Plan

While the Township surpassed its conservation objectives from the 2014 plan, we recognize other measures could take place to ensure savings continue and that new conservation measures are identified and acted upon. Our key changes to ensure the success of our updated plan include creating a formal Energy Management Committee from the existing Energy Plan Task Force and ensuring staff are trained on energy conservation and building operations.

The CDM plan will be reviewed by our Energy Management Committee on an annual basis to review the results of the proposed measures and determine if adjustments to the plan are required. Initiatives may be added to the plan as new opportunities arise. Updates to the plan will be posted on the municipality's website.

Looking forward: 2020-2024

Concerns over ever-increasing energy prices and the negative impact of fossil fuels on the environment have raised interest in energy conservation, sustainability, and predictable energy rates.

It is recognized that the ability to meet the target relies on the allocation of resources to implement energy reducing initiatives.

The Township of Hornepayne will strive to ***reduce our energy consumption by an additional 10% in municipal operations by 2025 compared to the 2014 baseline***. This Energy Reduction Target will apply to all departments and facilities owned by the Municipality.

Proposed Energy Conservation Measures

Energy conservation projects can be categorized as technical (switching street lighting from high pressure sodium to LED), organizational (establishing a green team), or behavioral (running a daylight harvesting campaign, where lights are turned off on sunny days).

Potential energy conservation projects were identified by comparing building-level energy benchmarks to the median energy benchmark for that building type.

A summary of recommended measures and timelines for proposed energy conservation measures for the Township of Hornepayne follows:

Technical Measures

Efficiency Measure	Timeline
Lighting audits of all municipal facilities	To be completed Spring 2019
Electrical upgrades (ESA), spare PLC processor and HMI screen for filter trains at WWTP	To be completed 2019
Filter train replacement assessment and long term replacement and maintenance plan at WWTP and WTP	To be completed 2019
Electrical assessment of entire WTP & WWTP systems	To be completed 2019
Feasibility study for DE chlorination at WTP & project execution	To be completed 2019/2020
Replace exterior cladding and insulation at the Water Tower	To be completed 2020
Change windows in the Municipal Office to reduce heat loss in winter	To be completed 2021
Replace old motors, pumps, and air handling units with high efficiency ones with variable speed drives (VSDs) on motors	To be investigated 2021
Replace old boilers/HVAC systems/hot water tanks with new high efficiency ones of proper size	To be investigated 2021
Reduce AC operating hours, turn off reheats and stop controlling humidity levels during the cooling season	To be investigated 2021
Replace outdated baseboard heaters at all municipal facilities	To be completed 2022
Lighting audit and LED retrofit at all municipal facilities	To be completed 2023
Convert all lighting in all facilities to LED	To be completed 2023
Quarterly Hydro Bill Analysis at WTP & WWTP and identification of ECMs	To be completed quarterly

Organizational Measures

Efficiency Measure	Timeline
Creation of an Energy Management Committee	To be completed in Fall 2019
Develop a Municipal Energy Plan	To be completed in Fall 2020

Behavioural Measures

Efficiency Measure	Timeline
Place poster near kitchen/bathroom sinks reminding users to limit water usage where appropriate	To be completed 2020
Place poster/sticker near light switch in rooms reminding users to turn off lights when no one is in the room	To be completed 2020
Continue to ensure the temperature of facilities meets the needs of the users	To be completed 2020
Harvest day light where possible by opening blinds instead of using electric lighting	To be completed 2020
Close windows when air conditioning is in operation	To be completed 2020
Use open windows and passive cooling when mechanical air conditioning is not needed	Ongoing

Renewable Energy Projects

Efficiency Measure	Timeline
Investigate options for solar lighting at various municipal facilities	To be investigated 2021
Smart Grid and Sustainable low cost renewable generation for local consumption	To be investigated 2023

Plan Implementation

Ontario Regulation 507/18 requires increased municipal energy management and engagement. Development of an energy conservation strategy as part of an overall sustainability plan is a complex process. The main driver for a local municipality to change the way energy is used, relates to fiscal benefits and financial incentives. Energy is a manageable input to the business process, much like any other resource cost. The Township of Hornepayne is maintaining and developing current and planned services that continue to be affordable to taxpayers.

Current practices must be enhanced and new approaches must be developed. To meet these needs, the Township of Hornepayne will consider designing a comprehensive program for collecting and analyzing quarterly energy billing information, and ensuring that staff is informed about energy consumption. The resulting energy costs and consumption database will be used to monitor excessive variations, targeting facility follow-up assessments, and determining areas that could be candidates for improved conservation. These monitoring enhancements will improve the Township's understanding of the bottom line impact of energy management.

In order to establish a baseline for managing energy costs, the Township has captured information critical to energy management planning. This formalizes the process involved in

understanding the relative magnitude of energy costs, the possible ways to reduce energy use, energy targets that are likely to be achievable, and other associated activities that need to occur. This CDM Plan provides the "big picture" view as an ongoing framework for optimizing overall energy use and achieving success.

CDM Planning is intended to be a process of "continuous improvement." The Township of Hornepayne follows *ISO 50001*'s four step plan–do–check–act management methodology, used in business for the control and continuous improvement of processes.

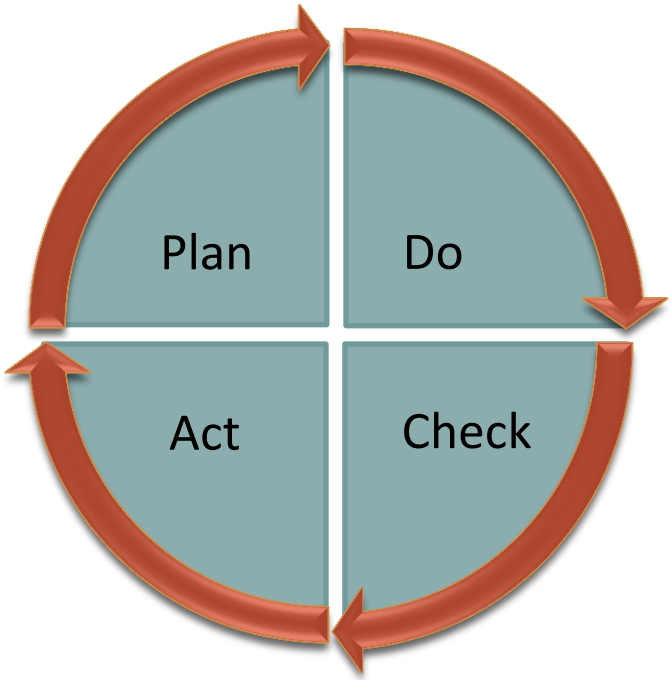


Figure 3: ISO 50001 Plan-Do-Check-Act Project Planning Cycle

PLAN

Establish the energy conservation objectives and processes necessary to deliver results in accordance with the expected outputs: the energy conservation targets or goals. Start on a small scale to test possible effects and financial feasibility. Develop an Energy Conservation Demand Management Plan prioritizing budgets, resources, and timelines.

DO

Implement the plan and collect data for analysis in the following "CHECK" and "ACT" steps. Develop projects' design and execution, prepare status reports, and implement the communication strategy.

CHECK

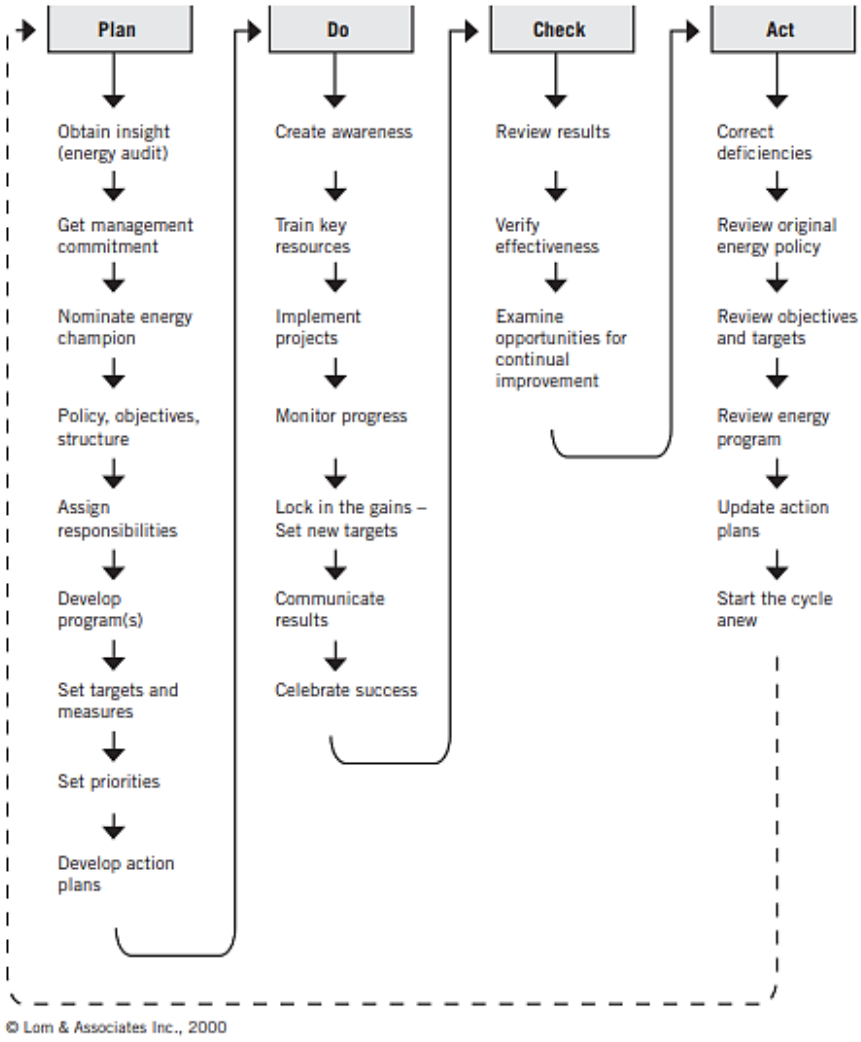
Study the actual results (measured and collected in "DO" above) and compare against the expected results (targets or goals from the "PLAN") to ascertain any differences. Evaluate any deviations in implementation from the plan and also evaluate the appropriateness and completeness of the plan to enable the execution, i.e., "Do".

ACT

Recommend improvements and adjustments to the initial plan; determine the course of corrections and modifications to the plan.

The detailed energy conservation project planning process is visually illustrated below.

Energy Conservation Project Planning Process[5]

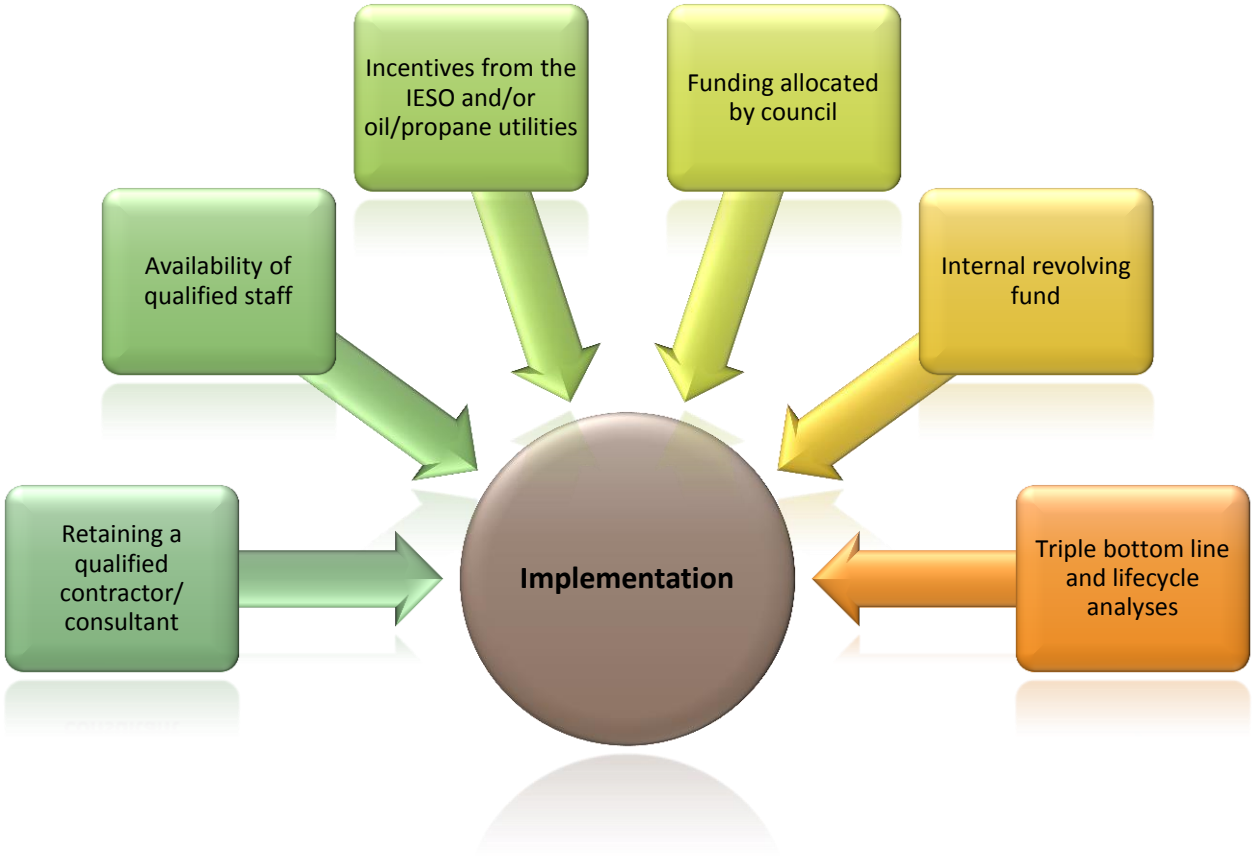


[5] Energy Efficiency Planning and Management Guide, CIPEC, 2002

Evaluation Metric Development

Energy conservation projects will be evaluated using an internal rate of return (the rate of interest the project could generate), along with simple payback (the number of years it would take to pay off the project from the savings). Hydro cost savings and life cycle analysis will be used to derive these parameters. In addition, more costly conservation projects will be bundled with more cost-effective ones to ensure their successful implementation.

Implementation of the proposed projects depends on:



Progress on projects will be monitored using the annual energy reports prepared under the regulation. A separate summary for each project will be prepared and archived.

Timelines

Timelines are assigned based on measures/facility prioritization. These timelines allow for flexibility during implementation, and will be dependent upon the costs/incentives and business decisions driven by the Township of Hornepayne. Upon completion of the additional energy audits and energy assessments, the measures and timelines will be revised.

Responsibilities

The Township of Hornepayne will implement an Energy Management Committee to create and maintain a methodical focus on energy costs. This Committee will provide a vehicle for key staff from critical departments to track energy budgets, update energy related projects and develop accountability for achieving energy reduction targets. The committee will have the lead responsibility and accountability for monitoring and achieving energy reduction targets.

The proposed committee shall be established by Municipal Council upon finalization of this CDM Plan update having regard to the following structure:

- One key staff person from each major energy consuming departments, listed below, shall be required to participate:
  - ✓ Public Works, Recreation, Library and Administration
- One key staff person from Financial Services shall be required to participate
- One key staff person from all other departments shall be required to participate from time-to-time as determined by the Committee
- Up to two members of Council

The role of monitoring progress will fall upon an Energy Management Committee to be appointed by Council. The committee will ensure that both the capital projects and behavioural changes outlined in this Plan are maintained on a continuing basis seeing as ***managing energy consumption is important to both environmental and financial good stewardship.***

The specific mandate for the proposed committee shall be established by Council and the Terms of Reference created by the Committee (and approved by Council) upon creation and shall be based generally on the following:

- Track energy spending by department
- Analyze and prioritize projects for consideration by Council on an annual basis
- Identify potential projects to consider in the future
- Consider a corporate strategy for back-up generators
- Create an energy awareness strategy for Township staff
- Reporting and tracking all utility incentives

Participation and education will be solicited from utility partners, both electrical and gas supplier (if applicable), to ensure up to date information on incentive programs, energy rates and other available assistance. Active participation from these partners will make the Energy Management Committee that much more effective.

Monitoring and Evaluation

Annual Energy and GHG Emissions Reporting and Five-Year Plan Update

In addition to developing annual key performance indicators (KPIs) for each facility to allow benchmarking and tracking of energy consumption, *Ontario Regulation 507/18* requires that the Township of Hornepayne report on the results of the CDM Plan at the end of the five-year planning period. As in this update, in the next update due in 2024, the Township of Hornepayne will provide an update to include any revisions to the 2020-2024 CDM Plan. The Township of Hornepayne has submitted and published most of its annual Energy and Greenhouse Emission Reports and will continue to do so annually until July 1, 2024. At that time, the revised Plan will provide:

- A description of current and proposed measures for conserving and otherwise reducing energy consumption and managing its demand for energy
- A revised forecast of the expected results of the current and proposed measures.
- A report of the actual results achieved.
- A description of any proposed changes to be made to assist the public agency in reaching any targets it has established or forecasts it has made.
- Any additional Council initiatives geared at achieving or establishing new targets.

Incentive Funding

To ensure that the Township of Hornepayne will take advantage of all funding and grant opportunities related to energy efficient projects, the Township will liaise with representatives from local utility providers. Township staff and utility representatives are in a unique position to review current and future process improvements, program implementations and projects that can meet future funding requirements. As funding opportunities arise that are suitable for specific energy conservation projects, Township Staff will report to Council and clearly outline the cost savings associated with a successful application.

Education and Capacity Building

Training is an essential element in ensuring safe and environmentally friendly operations, compliance with Township's Strategic directives and legal requirements. Training covers the areas of environmental awareness, energy conservation practices, compliance issues and energy efficient management. Training may be related to specific equipment, processes and

monitoring of energy conservation initiatives. There is a consistent effort for identification of training needs, drawing up a training plan and creating awareness.

The Township of Hornepayne ensures the development of technical competencies so that any person performing tasks will have the potential to cause a significant energy conservation impact. The Township will implement a dynamic process for the submission and processing of staff suggestions for energy efficiency improvements.

Conclusions and Recommendations

Conclusions

- ✓ The Township of Hornepayne is well on its way to the implementation of a structured energy Conservation Program
- ✓ The Township of Hornepayne plans to further investigate investment decisions in technologies to reduce electricity expenditures
- ✓ The Township of Hornepayne
- ✓ A structured implementation framework has been set to secure the success of the CDM initiative

Recommendations

- Council adoption of Updated Energy Conservation and Demand Management Plan
- Establish an official Energy Management Committee
- Revise the Plan as required based on analysis, energy assessments and energy consumption trends
- Implement energy efficiency measures
- Revisit the energy assessments toward the end of the 4th year period to facilitate the planning process in the next stages

Schedule 1:
Actual 2011-2018 Energy Consumption

A lot of changes have occurred to the Township's facilities over the last five years, many of which resulted in energy efficiencies and consumption reductions. That said, even though a facility may have experienced an increase in electricity and/or oil consumption from 2014 to 2018, the increase in facility floorplan and/or services offered must also be taken into account when evaluating energy consumption.

Table S-1: Change in Electricity Consumption (2011-2018)

Total Annual Electricity Consumption (kWh)				
Facility	**2011**	**2014**	**2018**	**2014-2018 Electricity Consumption Variance**
Airport Terminal/ Garage	74,155.00	84,848.00	72,463.39	**-15%**
Arena Building	264,595.00	287,651.00	224,576.59	**-22%**
Curling Club	158,390.75	211,277.30	255,461.60	**21%**
Landfill Garage	15,984.20	7,189.80	6,789.15	**-6%**
Moon Light Lake	36,347.30	85,844.07	76,200.00	**-11%**
Municipal Office/ Fire Hall	440,677.94	483,965.60	266,276.07	**-45%**
Public Works Buildings	172,907.17	206,097.71	187,633.44	**-9%**
Waste Water Treatment	440,677.94	483,965.60	266,276.07	**-45%**
Water Treatment Plant	172,907.17	206,097.71	187,633.44	**-9%**
Streetlights	163,580.80	172,424.43	58,914.71	**-66%**
Water Tower	36,594.87	46,087.27	101,847.43	**121%**
TOWN TOTAL	**1,976,818.14**	**2,275,448.49**	**1,704,071.89**	**-25%**

Table S-2: Change in Oil Consumption (2011-2018)

Total Annual Oil Consumption (L)				
Facility	**2011**	**2014**	**2018**	**2014-2018 Oil Consumption Variance**
Arena Building	15,654.00	12,460.90	7,387.60	**-41%**
Public Works Buildings	10,570.00	11,884.20	5,760.40	**-52%**
Waste Water Treatment	7,596.00	9,213.30	5,218.20	**-43%**
Water Treatment Plant	10,046.00	22,479.90	11,910.90	**-47%**
TOWN TOTAL	**43,866.00**	**56,038.30**	**30,277.10**	**-46%**

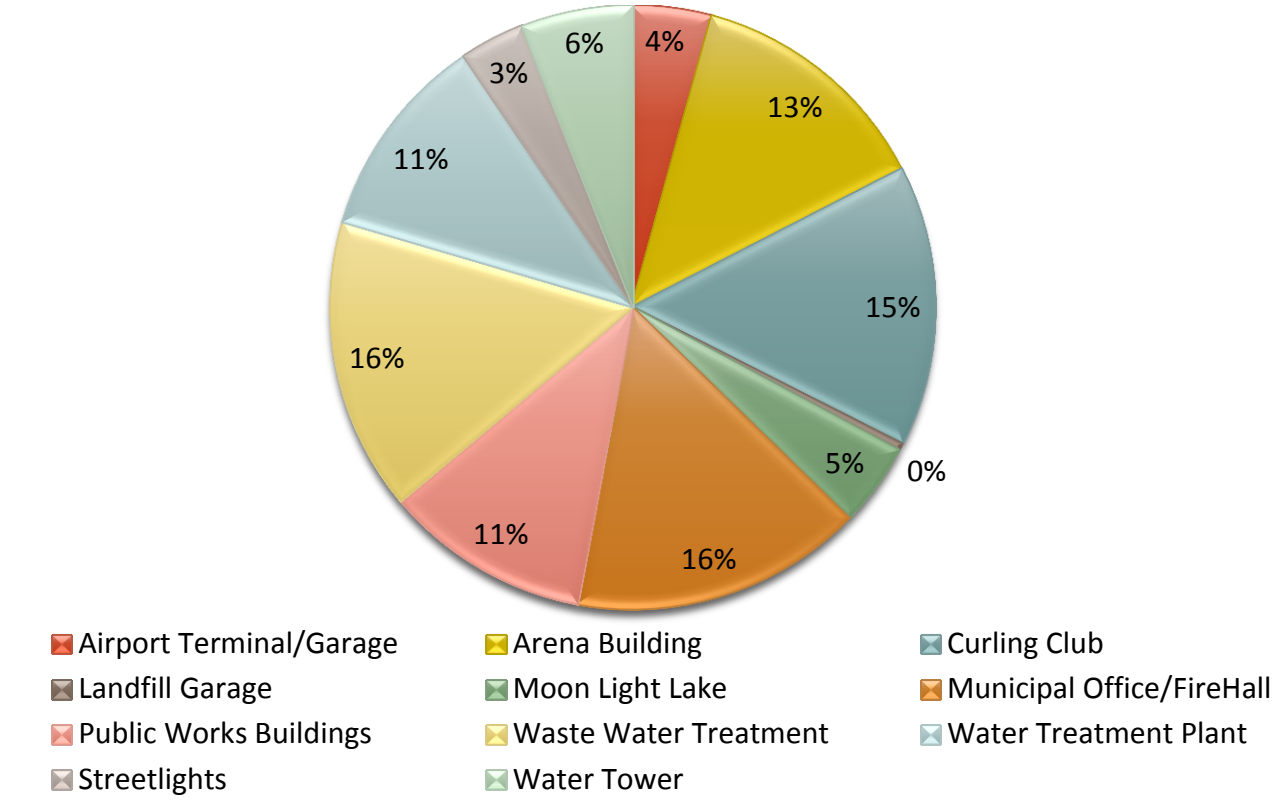


Figure S-1: 2018 Township Electricity Consumption Profile

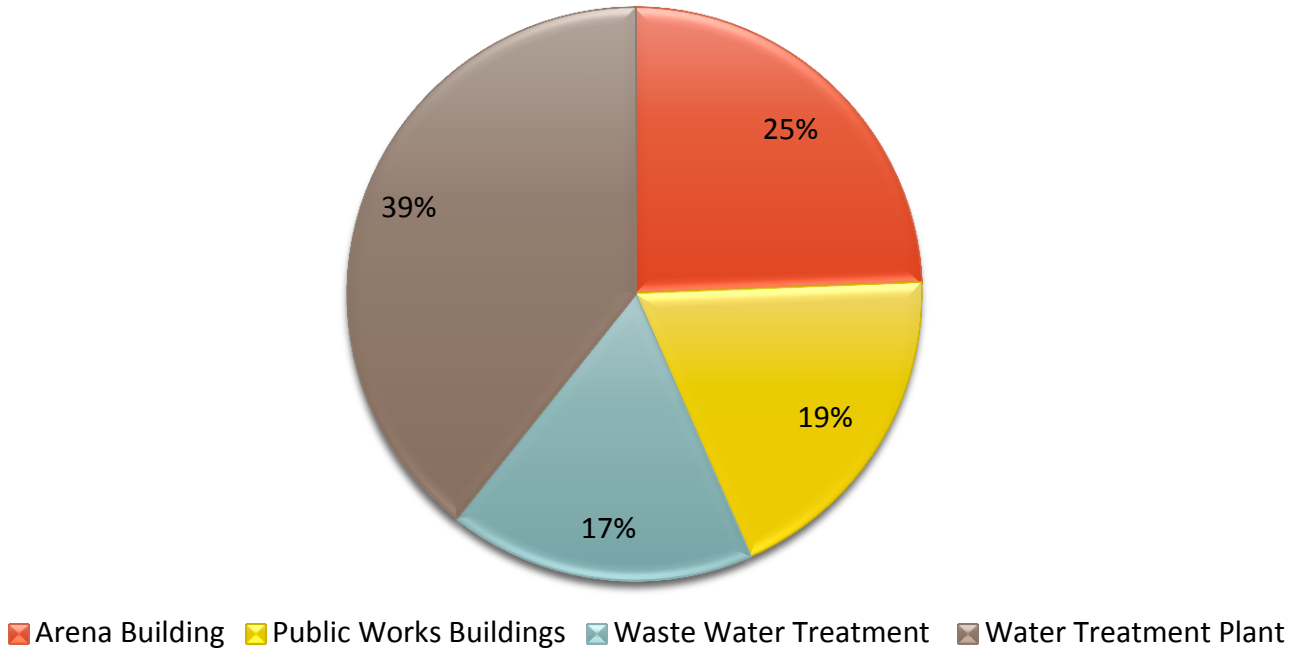


Figure S-2: 2018 Town Oil Consumption Profile

Schedule 2:
Council Resolution Adopting 2019 CDM Plan Update

The Corporation of the Township of Hornepayne
68 Front Street, PO Box 370
Hornepayne, Ontario
P0M 1Z0

COUNCIL RESOLUTION

MOVED BY: _____ NO. 2019-340
signature

SECONDED BY: Belinda Kistemaker DATE: JUN 19 2019
signature

Be it resolved that By-Law No. 1740 being a By-Law to adopt a Conservation and Demand Management Plan for the years 2020 – 2024 for the Corporation of the Township of Hornepayne be hereby read a first and second time and be considered read a third time and finally passed.

✓ __Carried __Defeated __Deferred

_____
signature of presiding officer

RECORDED VOTE:	**YES**	**NO**	**ABSTAINED**
Councillor Belinda Kistemaker	___	___	___
Councillor Peter Kistemaker	___	___	___
Councillor Jon Peroff	___	___	___
Councillor Drago Stefanic	___	___	___
Mayor Cheryl Fort	___	___	___

Disclosure of pecuniary interest and the general nature thereof.

(Name)_____(Name)_____

Disclosed the pecuniary interest and the general nature thereof and abstained from the discussion, vote and influence.

_____
(Clerk)

THE CORPORATION OF THE TOWNSHIP OF HORNEPAYNE

BY-LAW NO. 1740

Being a By-Law to adopt a Conservation and Demand Management Plan for the Township of Hornepayne

WHEREAS O.Reg 507/18 governs Broader Public Sector Energy Reporting and Conservation and Demand Management Plans for municipalities; and,

WHEREAS under O.Reg 507/18 Ontario municipalities are required to have an updated Conservation and Demand Management Plan in place by July 1, 2019;

NOW THEREFORE the Council of Corporation of the Township of Hornepayne hereby enacts as follows:

1. That the Conservation and Demand Management Plan 2020-2024 attached hereto and referenced as Schedule "A" forms an integral part of this By-Law;

2. The Mayor and CAO/Clerk are hereby authorized to sign and affix the corporate seal for and on behalf of the Corporation to give force and effect to this By-Law;

3. This By-Law shall come into force and take effect upon passage.

Read a first and second time this 19th day of June, 2019.

Read a third time and finally passed this this 19th day of June, 2019.

Mayor

Clerk