Municipality of Central Manitoulin

Conservation and Demand Management Plan 2019 - 2024

Energy conservation plans capture information such as annual energy consumption and greenhouse gas emissions, combine it with goals and strategies, renewable energy projects in operation or under consideration to successfully reduce overall energy consumption and costs.

Updated June 2019

MUNICIPALITY OF CENTRAL MANITOULIN

CONSERVATION AND DEMAND MANAGEMENT PLAN 2019 – 2024

INTRODUCTION

This conservation & demand management (CDM) plan is a strategic plan that provides the basis for the Municipality of Central Manitoulin to move forward on implementing improvements to its facilities and operations that reduce energy use, their associated costs, as well as reduce the negative environmental impact of the Municipality's activities. The five-year plan considers long term goals and objectives of the Municipality's economic, environmental and social well-being. It also assists the Municipality in complying with O. Reg 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans), under the Electricity Act (1998).

COMPONENTS OF THE PLAN

- **Current Consumption Data -** *2011, 2012, 2013, 2014, 2015, 2016, & 2017 Energy Consumption and Greenhouse Gas Emissions Reports*.
- **Goals & Objectives –** The Municipality's goals and objectives for conserving and reducing energy consumption and ways to better manage its demand for energy.
- **Actions –** The Municipality's proposed measures to support the goals.
- **Targets –** Specific quantitative objectives related to a particular action.
- **Measures –** Regulations (plans, policies) and other mechanisms that encourage actions.
- **Confirmation –** Acknowledgement and acceptance of the Conservation Demand Management Plan by Council.

CURRENT ENERGY CONSUMPTION

Municipality of Central Manitoulin's **2011, 2012, 2013, 2014, 2015, 2016, & 2017** Energy Consumption and Greenhouse Gas Emission Reports – *see appendix I*

The examination of the Energy Consumption & Greenhouse Gas Emission Reports helps to identify where Municipal facilities are within average operating standards and where the energy consumption is above the median.

Some of the Municipality's strengths and weakness in dealing with its energy consumption are identified below.

Strengths	Weaknesses
Creative/supportive staff and Council eager to increase energy efficiency	Minimal energy efficiency projects to date
Successful implementation of energy efficiency projects to assist in decreasing energy consumption *(changing of T10 fluorescent lights to T8's, upgrade of windows at Mindemoya Community Hall)*	No formal energy efficiency project evaluation, measurement and verification protocol
Replacement of high lift pump controls at Mindemoya Water Treatment Plant to increase efficiency and reduce energy consumption	No incentives/rewards to encourage staff or departments to pursue energy efficiency
Planning, design and construction of the new Municipality of Central Manitoulin Fire Hall #2 was completed in the fall of 2017. Implemented are energy efficiency and reduced energy consumption elements.	Minimal energy awareness, commitment and communication among most staff and Council
A Municipal Energy Plan and Community Energy Plan is currently in development	Older Municipal facilities that do not deliver the best energy efficiency outcomes

Opportunities and threats the Municipality may face in the challenge of dealing with energy consumption have also been identified.

Opportunities	Threats
The identification of energy efficiency improvement projects	Lack of defined roles and responsibilities resulting in poor coordination within the municipal structure
Develop programs based on previously successful sustainable energy efficiency projects & other organizations successful models	Increasing budget constraints that increase hesitance to devote money to energy projects
Explore existing channels / tools that can be leveraged for energy related projects	
Municipal energy consumption & GHG emissions – planning, target-setting and reporting are requirements of the Electricity Act	
Encourage energy efficiency and reduced energy consumption for all new Municipal construction projects	

GOALS AND OBJECTIVES

The following goals and objectives that are recommended in this CDM plan will be achieved through two major types of actions*;* **management and organizational & technological**. These actions will assist the Municipality in moving from its present state of energy use to an improved state. Each of these actions have been ranked as high, medium and low priority and assigned the following dates to be achieved as follows:

- High Priority Actions - to be achieved 2019-2021
- Medium Priority Actions - to be achieved 2020-2022
- Low Priority Actions - to be achieved 2022-2024

Management actions are rated based on their importance and relative ease of implementation. Technological actions are ranked based on the ratio of estimated savings of fuel/energy costs to capital investment.

The CDM plan should be flexible to enable the Municipality to continue to strategically develop and make improvements while encouraging any changes that would improve the state of energy conservation and reduction.

Management and Organizational Goals and Actions

GOAL	ACTION	PRIORITY
Awareness and commitment	Review CDM with Council and staff to help facilitate a better understanding of energy efficiency	High
Improved energy efficiency and performance	Ensure energy efficiency is established at all municipal facilities and works	High (over the duration of the plan)
Integrated & coordinated system	Create a sustainable energy management structure	High – Medium
Optimize processes to encourage innovation	Take advantage of available resources & funding, improve identification of energy efficiency and performance	High (over the duration of the plan)
Awareness and commitment	Communicate energy efficiency projects and success	Medium
Improved energy efficiency and performance	Encourage energy efficiency actions in all municipal facilities and with all Municipal staff	Medium
Optimize processes to encourage innovation	Re-invest the money obtained through energy savings into new energy projects	Medium – Low

Behavioural measures of management and staff could result in reduced energy consumption and savings. Behavioural measures can include informing staff of the savings associated with shutting off lights, shutting down computers at night, not adjusting the temperature in rooms, and using shades to take advantage of daylight harvesting, solar heat gain in the winter and cooling in the summer. Maintaining nominal temperatures in unoccupied buildings and in rarely used facilities.

Technological Goals and Actions

Along with technological goals and actions, targets have been established to help track progress and provide motivation for meeting final objectives.

GOAL	ACTION	PRIORTIY	TARGET
Identify & develop energy efficiency solutions for facilities with the highest energy intensity ratings to reduce consumption	Assessments/audits *of facilities then retrofit of mechanical and structural systems to improve efficiency and reduce cost	High	To reduce the energy consumption and lower the energy intensity.
Ensure capital projects are aligned with improved energy efficiency design	Develop *Policy and Procedure* that require capital improvements follow energy efficiency guidelines	Medium	To ensure that all capital investment is committed to energy efficient design.

*Audited reports should include estimated energy/cost savings of the proposed retrofit. When outside services are retained to conduct energy audits they should also be required to perform a lifecycle analysis and provide the internal rate of return for each measure evaluated in the energy audit. Subsequent follow-up tracking of the energy consumption after the capital investment and retrofit will establish the actual energy savings and reduced environmental impact gained from the facility improvements.

The focus of audits should be on those buildings that indicated the highest energy intensity rating from the previous Energy Consumption and GHG Emission Reports and those that are going to provide the greatest opportunity (most or greatest energy savings measures).

Other technical measures that can be implemented in our facilities can be obtained and studied from some of the following sources:

- The Ontario Power Authority's (OPA) 2011 Prescriptive Measures and Assumptions list and 2011 Quasi-Prescriptive Measures and Assumptions list1
- The Ontario Energy Board's Measures and Assumptions for Demand Side Management (DSM) Planning2
- Natural Resources Canada (NRCan) maintains a list of products that are ENERGY STAR® qualified and/or regulated in Canada under Energy Efficiency Regulations3

These documents provide lists of possible energy saving measures that can be employed in a project or program that can be developed over the course of the 5-year plan.

Technical measures are not just limited to replacing one piece of equipment with a more efficient model.

Some other examples of technical measures include re-commissioning and demand response:

- Re-commissioning is a systematic, documented process that identifies low-cost operational and maintenance improvements in existing buildings and equipment that brings the buildings and equipment up to the design intentions of its current usage. It focuses on optimizing existing system performance, rather than relying on major equipment replacement. The results of the audit and assessment stage of each project that will assist in determining which measure will be best suited to a specific facility.

- Demand response is a program that involves shifting energy usage from times of peak demand to off-peak times through adjustments to operation schedules, shutting down unnecessary equipment or shifting to an alternate energy source. Demand response can save the Municipality money by avoiding the cost of peak time-of-use energy or by simply shutting down equipment, lighting, and adjusting the heating and cooling when a building is not in use or occupied.

RENEWABLE ENERGY

The Municipal Complex which houses the municipal office, Council's chamber, and public library and washrooms has its heating and cooling system supported with in ground heat pump technology. The system has been operating since 1992 and is not metered. The system was replaced in the Spring of 2018.

Municipal staff will continue to investigate avenues of cooperation or partnerships to achieve the goals of energy reduction & GHG emission reduction through renewable energy investment. The availability of municipal land, and/or buildings for solar, wind or biogas renewable projects are some opportunities that may be considered.

Monitoring and Evaluation

O. Reg 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans), under the Electricity Act (1998) requires that public agencies report on the results of their plan at the end of each 5 year poeriod and are required to provide the following:

- Annual Greenhouse Gas and Emissions reports.
- A description of current and proposed measures for conserving and otherwise reducing energy comsumption and managing its demand for energy.
- A revised forecast of the expected results of the current and proposed measures.
- Reporting of the actural resuts achieved.
- A description of any proposed changes to be made to assist the public angency in reaching energy reduction and efficiency goals.

The CDM Plan has been reviewed and approved by the Council of the Municipality of Central Manitoulin and by doing so they affirm their commitment to implementing the plan.

The Municipality of Central Manitoulin

Head of Council – Mayor Richard Stephens

CAO / Clerk – Ruth Frawley

Dated: June 27, 2019

APPENDIX I

Municipality of Central Manitoulin – **2011, 2012, 2013, 2014, 2015, 2016, & 2017** energy consumption and GHG emission reports

Attached.