



# **The Corporation of the United Township of Head Clara and Maria Energy Conservation and Demand Management (CDM) Plan**

## **Introduction**

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. It assists municipalities to better understand their energy use, create conservation plans to encourage energy savings and demonstrate leadership in conservation.

This CDM plan was developed in compliance with the regulation and covers the period from 2020 to 2024. The plan will be submitted to council on August 15, 2019 for approval.

The plan describes our municipality's new energy conservation goals and objectives and current and proposed energy conservation measures.

## **Purpose**

The Energy Conservation and Demand Management Plan's goal is to provide a basis for the municipality to implement improvements to its operations and infrastructure that reduce energy and water consumption, their associated costs as well as environmental effects of the municipality's activities.

## **Goals and Objectives for Conserving Energy**

The municipality's goal is to:

Improve energy efficiency within municipal facilities, reduce greenhouse gas emissions and energy consumption in everyday operations;

Maximize financial resources through decreased energy consumption resulting in cost savings;

Extend the lifecycle of municipal assets;

Increase conservation knowledge and awareness among the public using the community centre and library through education;

Increase conservation knowledge and awareness among staff through education and best practises; and

Demonstrate leadership in energy management and conservation within the community.

## **Reduction Target**

The municipality's consumption benchmark is based on 2017 electricity, propane and greenhouse gas emission data which can be found in Appendix A.

The municipality's goal is to reduce overall energy consumption within its facilities by 5% between 2019 and the end of 2023 and integrating the energy conservation plan with the capital plan/policy. The proposed energy consumption measures to support this achievement can also be found in Appendix A.

## **Tracking Energy Consumption and Savings**

Annual energy reporting is required under the regulation and allows our municipality 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, to help report on our achievements and inform the development of new measures (See Appendix A).

Overall energy consumption across all municipal buildings reported on was reduced by 1.76% in 2018.

## **Current and Proposed Energy Conservation Measures**

Current Measures Include:

The municipality has applied for funding to have the lighting in the community centre and library replaced with LED lighting which can provide energy consumption and cost savings of up to 70%. We have also applied for funding to have windows replaced in the library and kitchen of the community centre and add additional insulation in the library attic to bring it up to a value of R-60. These improvements will increase efficiency and reduce electric and heating consumption and costs.

## Appendix A:

### Energy Consumption Benchmark (2017)

Facility	Total Area (sq ft)	Electricity (kWh)	Propane (L)	GHG Emissions (kg)	Energy Intensity (ekWh/sq ft)
Municipal Office/ Community Centre/ Library	3439	30058.09	3629.30	6112.638	79.84782
Municipal Garage	2000	5886.85	3608.30	5662.163	15.62760

### Energy Consumption Benchmark (2018)

Facility	Total Area (sq ft)	Electricity (kWh)	Propane (L)	GHG Emissions (kg)	Energy Intensity (ekWh/sq ft)
Municipal Office/ Community Centre/ Library	3439	23914.78	5276.5	6112.638	79.84782
Municipal Garage	2000	4108.02	3544.20	5662.163	15.62760

### Consumption Difference 2017-2018

Between 2017 and 2018, the average reduction in consumption was 1.76%. The municipal office complex including community centre and library reduced its electricity consumption by 6143.31 kWh (20.43%) but increased its propane consumption by 1647.20 L (45.39%). The municipal garage decreased its electricity consumption by 1778.83 kWh (30.22%) and its propane consumption by 64.10 L (1.77%).

\*fluctuations will occur based on weather and facility usage.

### Proposed Energy Conservation Measures for 2019-2023

Facility	Measure	Estimated Cost	Estimated Energy Savings (kWh)	Target Date
Library	Increase insulation	\$ 4,453	2100	2019/2020
Library	Replace windows	\$ 1,200	200	2019/2020
Community Centre	Replace windows	\$ 2,400	200	2019/2020
Community Centre	Upgrade lighting to LED	\$ 8,200	500	2019/2020