

2019 – 2024

**Energy Conservation and Demand
Management Plan**



Introduction

Green Energy Act, 2009

The Provincial government repealed The Green Energy Act in 2018 under Bill 34 and amended The Electricity Act, 1998, The Environmental Protection Act, The Planning Act and various other statutes.

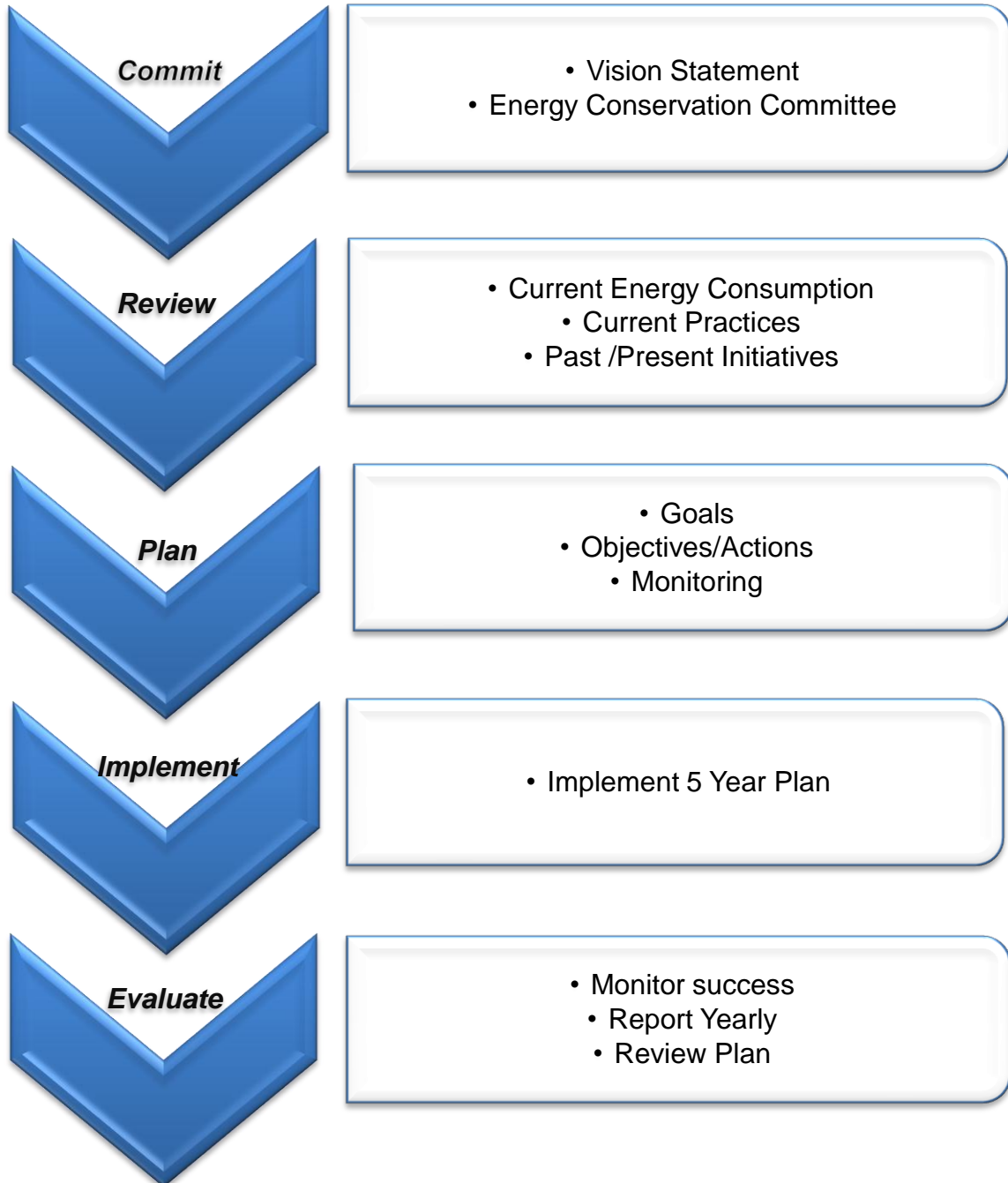
Under the original Green Energy Act, The Township of Wainfleet was required to submit an Energy Conservation and Demand Management Plan in 2014. The new revised Electricity Act requires the Township to submit a revised plan by July 1, 2019.

Initiated in 2013, the Act requires the “MUSH” sectors (municipalities, universities, schools and hospitals) to calculate and report on their energy consumption and greenhouse gas emissions annually. It also requires the development and implementation of a five year Energy Conservation and Demand Management Plan, to be endorsed by Township Council and posted to the Township’s website.

The Plan has been developed to guide the Township of Wainfleet in establishing energy management practices, promoting energy conservation, and integrating these measures into all aspects of the organization. Doing so will reduce energy consumption, increase energy efficiency, and ultimately reduce the environmental, social, and economic impacts of energy consumption. Outlined in the Plan is the Township’s commitment to energy conservation, previous and current energy practices, and the goals and objectives to which the City shall aim.

Energy Conservation and Demand Management Plan Framework

Energy Conservation and Demand Management Plan



TOWNSHIP OF WAINFLEET MISSION STATEMENT

Grounded in agriculture, family and rural traditions, with pride in its outstanding waterfront and natural recreational resources, the Township of Wainfleet will strive for fiscal responsibility and balanced, responsible planning in order to maintain the unique characteristics and charm of the community.

The Energy Conservation and Demand Management Plan has been developed to reflect the values and strategic directions of the Township of Wainfleet.

Township of Wainfleet Commitment

1. Promotion of responsible energy management throughout the Township, implementing economically viable energy conservation projects and renewable energy initiatives where possible during future projects.
2. Compliance with legislated environmental requirements and standards
3. Continual improvement of the Plan and its projects and initiatives

Energy Management and Leadership

The development and implementation of the plan will be administered by the Energy Conservation Committee.

The ECC (Energy Conservation Committee) will be comprised of Staff from various sectors of the organization. Members will strive to continually improve the Township's energy conservation efforts, while ensuring fiscal responsibility within the township. The committee will meet regularly to discuss energy related issues, economic considerations and in initiatives, regulatory

requirements, and create operational standards to be implemented across the township facilities. The Committee will also review and consider recommendations submitted in the Energy Audits performed in 2015

The committee will also research technical and economic renewable energy systems that may be incorporated in future upgrades of facilities. Appendix C Provides the outline of the Energy Conservation Committee

Current Energy Usage

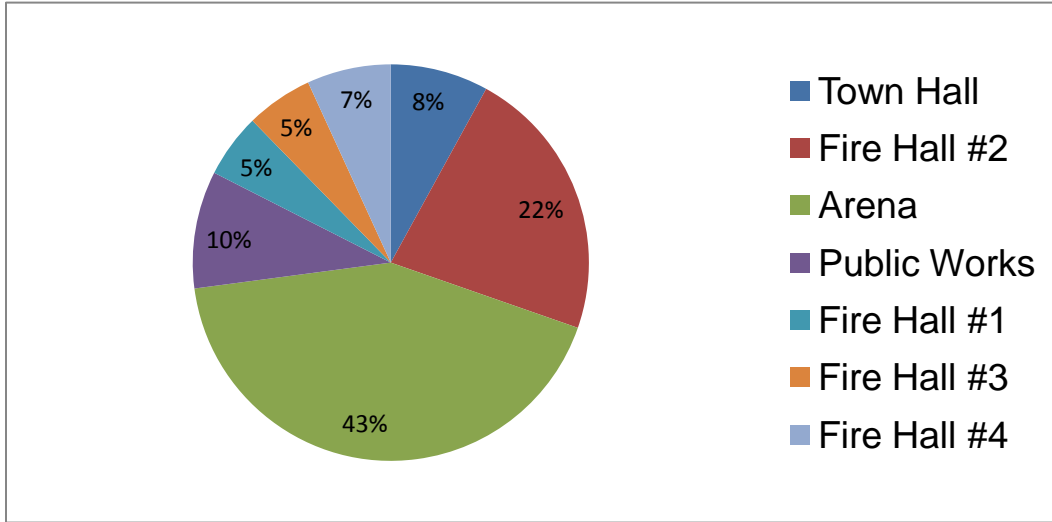
Energy Consumption reports have been submitted yearly and will set the baseline for goals to achieve potential reductions. The following analysis demonstrates past energy consumption and is not necessarily representative of future consumption trends. Continuous tracking and reporting will provide a more accurate picture of patterns over the years. Many factors will be considered in evaluating potential reductions. These include climate changes and weather events, facility usage, Budgetary constraints, and operational standards.

Summary of the Township Facility Consumption

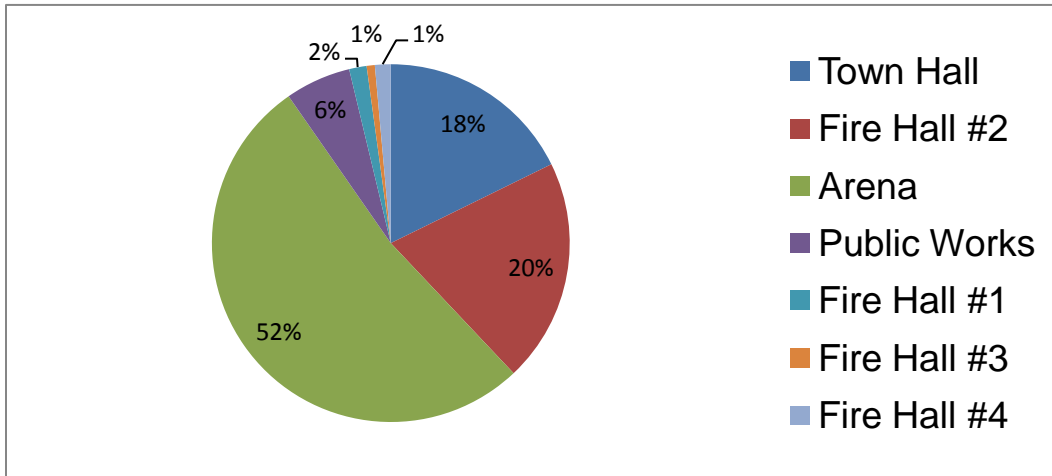
Year	Electricity (KWH)	Natural Gas (m3)	Greenhouse Gas Emissions (Mt CO ₂ e/yr)
2013	1,641,458.79	66,697.60	4,835.00
2014	713,258.04	72,508.00	4,498.00
2015	890,597.22	77,022.50	4,873.00
2016	643,826.09	60,192.00	3,771.00
2017	742,729.56	64,997.00	4,106.00

Below is an analysis of facilities by category and the percentage of consumption. Appendix B provides a complete list of Facilities for which energy is consumed.

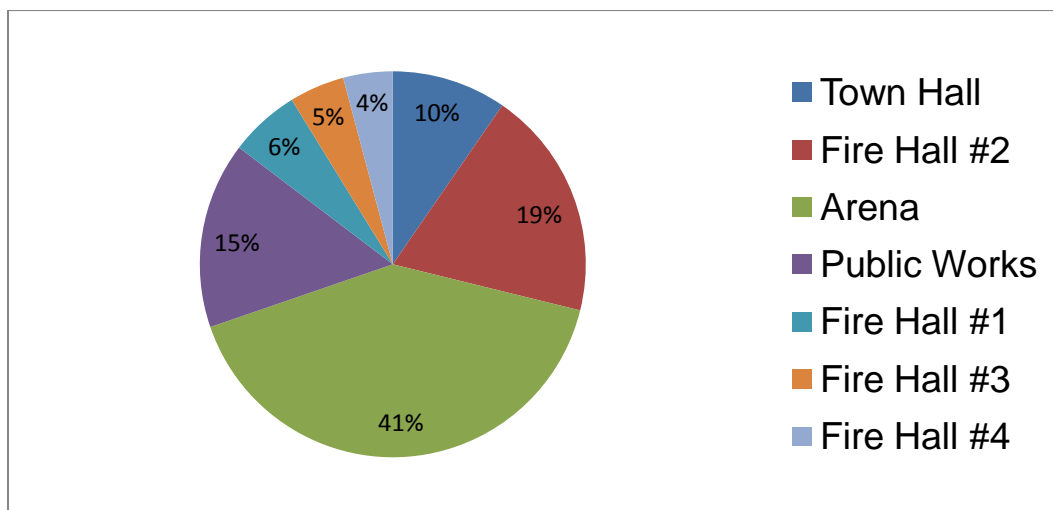
2013 Gas Consumption



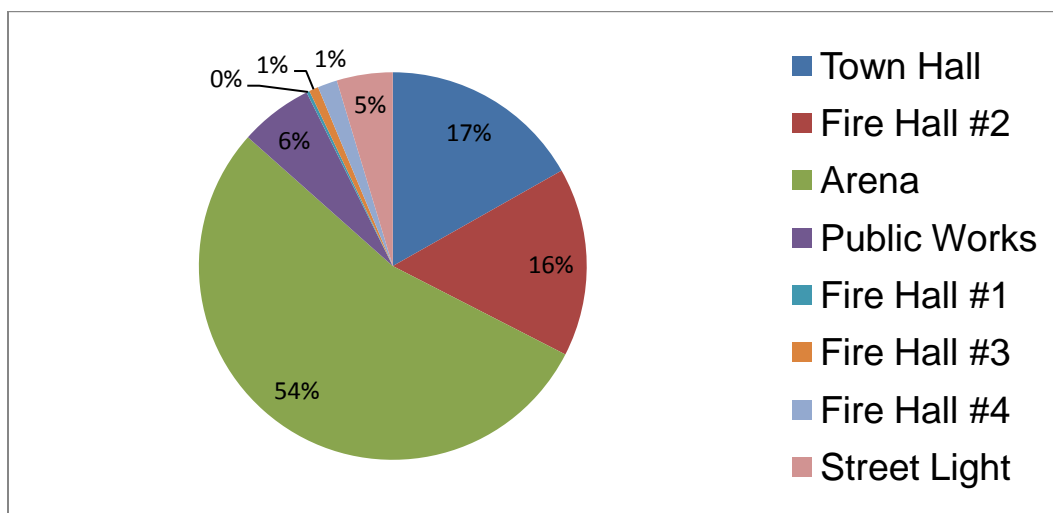
2013 Hydro Consumption



2017 Gas Consumption



2017 Hydro Consumption



Although the Arena is the largest consumer of Gas and Hydro, consideration should be given to the size and the purpose and function of the facility to operate.

How Energy is currently Supplied and Managed

Management of The Township's energy consumption is divided into three categories: Energy Supply, Energy Data Collection and Reporting and Energy Use Management.

Energy Supply

Supplier	Energy Type	Rate	Agreement
Hydro One	Electricity	Standard Rate	None
Enbridge	Natural Gas	Standard Rate	None

Energy Data Collection

Energy Data is currently managed through the finance department. Invoices are received, paid and filed by the Accounts Payable and coded to the various facilities incurring the expense. The finance department carries out the function of tracking and reporting yearly.

Energy Use Management

The management of energy consumption and the energy performance of City facilities and equipment are the responsibilities of Finance (cost tracking), Recreation Department (maintenance), and Operations Manager (operations).

Energy Saving Initiatives

The Township has actively sought ways of lowering the consumption of Gas and Electricity. Below you will find a list of recent projects that have been implemented. Initial savings may not be realized in the data due to the project start dates and billing cycles. Future energy reports will reflect the savings of the various conservation projects and their impact on the overall consumption.

Project	Facility	Energy	Year
Street Light Upgrade to LED	Town Wide	Hydro	2015
Lighting Upgrades	Arena	Hydro	2016-2017
Refrigeration	Arena	Hydro	2016-2017
Insulation	Arena	Gas	2017
Shower Valves	Arena	Water	2017
Electrical System	Arena	Hydro	2017
HVAC	Arena	Hydro/Gas	2017
Outdoor Facility Lighting	Arena/Public Works/Fire Hall #2	Hydro	2016-2018
Building Automation	Arena	Hydro/Gas	2017
Air Conditioning	Town Hall	Hydro	2017-2018
Fuel Monitoring	Public Works	Fuel	2017-2018
Lighting Upgrade	Public Works	Hydro	2018
Boiler Upgrade	Community	Gas/Water	2018
Window Replacement	Town Hall	Gas	2018

Energy Conservation Plan

Goals

The Township is planning long term goals to incorporate energy conservation strategies within future projects. They will provide direction for energy conservation objectives for consideration within all departments and capital projects.

1. Promote a culture of energy conservation throughout the township facilities.
2. Reduce energy consumption and green house gas emissions through energy conservation and management.
3. Continuous improvement of energy efficiency throughout the Township Facilities and processes.
4. Review consumption to seek potential energy savings.
5. Seek opportunities to utilize renewable energy sources and energy efficient components where feasible and financially viable.

Areas of Development

- Building an energy conscious atmosphere
- Improved Facility management
- Data management
- Energy Supply
- Procurement strategies

Objectives

The objectives are designed to provide direction on how to achieve energy conservation. Consideration will be given to develop the necessary resources and internal capabilities being mindful of budget restraints to implement the plan. The township will review these objectives and they will evolve as energy practices and capital works projects are considered.

Appendix A contains an outline for implementation of objectives, resources and timelines. The categories include Programs, Processes and projects that will be considered to organize the initiatives.

Category	Definition	Example
Program	Long term Objectives with Broad applications	Awareness training
Process	Short Term objectives with more specific applications	Energy Consumption Tracking
Project	Actions to improve efficiencies (capital works and maintenance)	Retrofits and upgrades to building envelope and mechanical systems

In addition to these categories, cost and savings estimates, along with timeline estimates, have been provided to help guide decision making and planning of energy conservation and demand management objectives. These estimates have been categorized into Low (\$0-5,000), Medium (\$5,001-10,000), and High (\$10,001 +) levels.

Evaluation Process

1. Monitoring Progress

The implementation of the Energy Conservation and Demand Management Plan will allow for more strategic and centralized monitoring of energy consumption. As part of the plan, a monitoring system will be developed to provide continuous information to key staff members. Continual monitoring will contribute to informed decision making and the development of stronger objectives in future Plans.

2. Reporting

The development of reports based on progress monitoring will deliver key information to various stakeholders:

- Yearly Reports have been incorporated into the Energy Conservation and Demand Management Plan
- Reports regarding progress of the Energy Conservation and Demand Management Plan, including conservation measures, and changes in the processes and implementation of programs, will be developed by the and delivered to the Senior Management Team.

3. Plan Review

The plan is designed as a living document to be reviewed and revised as is necessary. Goals and Objectives will be evaluated and prioritized regularly as new objectives evolve. This review will provide critical information that will contribute to long term planning and capital works to improve the energy conservation throughout the Township of Wainfleet facilities.

Summary and Recommendations

This Energy conservation and Demand Management Plan establishes a framework to ensure the wise use of energy and provides goals to the environmental sustainability. It provides a coordinated approach and an opportunity to reduce energy consumption and long term financial savings. The Energy conservation and Demand Management Plan has been developed to serve as guidance to identify specific energy efficiencies, to manage data and to help monitor effectiveness of energy conservation planning and initiatives.

Appendix A

Program/Process	Description	Objective	Timeline
Renewal of committee and reaffirmation of plan	Establishes targets for the Township	Establish a corporate commitment to energy management	2019 – Q1
Re-alignment of energy conservation committee	Due to staffing changes	Committee will review and monitor the plan	2019-2024
Energy Monitoring and Reporting	Review framework for management and staff	Improve culture within the organization to enhance energy conservation	2019-Q3
Operational Procedures	Establish operational procedures	To improve staff involvement in energy conservation	2019-Q2
Staff Energy Conservation Training	Establish training program for energy conservation		2019- Q3
Energy provider partnerships	Investigate potential partnerships and bulk purchasing	Reduce cost of supply of energy and incentives	2019-Q4 2024

Establish a energy conservation audit inspection program	Establish an internal audit program and checklist	Document maintenance, inspections, and update current and proposed energy conservation measures	2019-Q4 2024
Long Term Planning	Review potential upgrades or replacements of infrastructure	Long term sustainability and prudent purchasing	2019-2024
Communications	Develop an energy communication strategy to sustain long term awareness	Development of a energy conscious work force	2019-2024
Procurement	Establish an energy efficiency protocol to ensure new energy efficient equipment	Long term savings and sustainability	2019-2024
Research	Research potential renewable energy options	Long term sustainability	2019-2024

Appendix B

Facility List

Included below is the facilities that are heated/ cooled or which the Township pays utility bills.

Town Hall/Council Chambers

Firehall #1

Firehall #2

Firehall #3

Firehall #4

Public Works Facility

Arena/Seniors Drop In Center

Sports Complex

Oakwood Cemetery

Street Lighting

Shafley Drain Pump

Appendix C

