



## Town of Saugeen Shores

### Broader Public Sector Energy Conservation and Demand Management Plan

Based on O.Reg.507/18



## 1. Introduction

### *Our Municipal Energy Needs:*

The Town of Saugeen Shores (the Town) needs low-cost, sustainable energy sources delivering energy to our facilities to enable us to continue to provide reliable, cost effective services to our ratepayers. Reducing our energy consumption can help to reduce our impact on the environment and will also set a good example for our community. With continually increasing energy costs, reducing our energy consumption should also enable us to better manage our municipal budgets.

### *How We Manage Energy Today:*

The management of energy consumption and the energy performance of our facilities and equipment is the responsibility of Finance (cost management), the Infrastructure and Development Department (operations & facilities), the Community Services Department (operations & facilities), and Protective Services (emergency response and facilities). Finance is the primarily responsible for tracking energy consumption and overseeing the success of the energy conservation plan, relying heavily on the support and cooperation of all Department Managers who will introduce energy conservation measures. Every staff member of the Town has their own role to fulfil in order to ensure its success, whether it be adhering to new guidelines, or making small changes to their work stations.

### *Ontario Regulation 507/18 of the Electricity Act:*

As part of this commitment across Ontario, Regulation 507/18 of the Electricity Act requires all municipalities to develop and publish a Corporate Energy Conservation and Demand Management Plan (ECDMP) every five years. The plan, which helps support energy conservation efforts at the Town, is accompanied by a regulated annual report which publishes the total annual energy consumed for each of the buildings and facilities at the Town.

### *Overview of this Report:*

The Town has developed the ECDMP (this plan) to support, focus, communicate and celebrate our energy conservation efforts.

The plan includes the following key elements:

- A clear corporate vision and policy that includes objectives, targets and strategic priorities
- A summary of past conservation improvements and successes
- Detailed energy metrics summarizing energy consumed and progress towards targets
- Specific and actionable inventory of energy conservation projects planned for the next five (5) years.

The Town intends on revisiting and updating this Plan every five years as required under O.Reg. 507/18.

## 2. Our Commitment to Energy Conservation

### *Declaration of Commitment:*

The Town has implemented a number of measures to reduce energy consumption over the long term. We continue to allocate resources within operating and capital budgets to develop and implement strategic energy management initiatives that should continue to reduce our energy consumption and its related environmental impact.

We are committed to making reasonable effort to minimize impacts to the environment.

### *Vision:*

We will seek to continually reduce energy waste and protect our environment through the implementation of energy conservation measures. Energy savings will be achieved through actions by everyone in the Corporation, while maintaining efficient and effective levels of service for our ratepayers, seasonal visitors and program users. Energy conservation in Saugeen Shores is a team effort.

### *Objectives:*

The main goal of the Town is to provide quality programs and services that are cost effective, environmentally responsible, innovative, and respectful of our heritage. The Town's focus is on sustainable planning, healthy community design and environmental stewardship. Managers will work to maximize fiscal resources through direct and indirect energy savings and reducing the environmental impact of the Town's operations.

### *Overall Target:*

The key to a successful long term energy conservation and demand management vision is a strong Energy Policy, with measurable and achievable targets. Our Energy Policy calls for a conservative targeted reduction in energy usage or intensity of Town owned facilities.

The target for this plan is a 5% (177.4 eMWh) reduction in energy use over a 5 year period from the base year of 2017.

### *Stakeholder Needs:*

Internal stakeholders (Council, committees of council, CAO, staff) need:

- a. an up-to-date and relevant energy management plan with clear vision, goals, and targets in order to clearly communicate the corporate commitment to energy efficiency;
- b. timely, regular reports and information to maintain awareness of energy use and;
- c. training and staffing support to develop the skills and knowledge required to implement energy management practices and measures.

### 3. Our Energy Conservation Successes

Town staff have been continuously delivering upgrades and changes to facilities and processes which contribute to lower energy consumption and costs. The following section outlines a few of the improvements made.

By far the largest project has been the project of replacing street lighting with high efficiency LED lighting.

Other improvements include the following:

- Upgraded the older high intensity discharge lights in the Community Complex to high efficiency T-5 fluorescent fixtures;
- Replaced the oil hot water heater to a natural gas heater at the Coliseum;
- Upgraded the facility and parking outdoor lighting to LED;
- Upgraded interior lighting to T-8 or T-5 fluorescent fixtures;
- Replaced older windows in the Southampton Town Hall;
- Upgraded lighting in the Port Elgin Library;
- Reinsulated walls and installed new doors in Southampton Fire Station;
- Replaced older HVAC units with higher efficiency models at the Southampton Town Hall.

### 4. Our Energy Consumption

The Town of Saugeen Shores, like most Ontario municipalities, is challenged with significant budgetary pressures due to reduced levels of funding and increasing costs. It is unknown how quickly energy prices will rise over the next several years and to what degree. Given the way energy markets tend to perform, the bigger challenge is managing for volatility of pricing.

The reality is that energy prices are now globally-driven rather than locally-driven. Ontario alone will need to invest billions of dollars over the next decade in utility infrastructure and new electricity generation to replace the aging supply base that exists today. Meeting our target energy consumption reductions will result in lower Greenhouse Gas Emissions.

#### *Facilities Included in the Plan:*

The requirements of Regulation 507/18 of the Electricity Act specify that the plan is to cover only the built environment (facilities that are heated), whose facilities are currently owned and operated by the Town. The full list of the Town's facilities included in the plan can be found in Table 1 below.

**TABLE 1:** Town of Saugeen Shores Facilities and Infrastructure within the Boundaries of this Plan

Name	Address	Use	Area (m <sup>2</sup> )
<b>FACILITIES</b>			
Dr. Earl Health Centre	786 Goderich Street	Community centre	966
Parks Garage	741 Market Street	Equipment or vehicle maintenance	718
Port Elgin Fire Hall	612 Emma Street	Fire station	687
Public Works Garage	339 Conc 6	Equipment or vehicle maintenance	669
Public Works Garage	429 Peel Street	Equipment or vehicle maintenance	604
Saugeen Shores Medical Building	36 Grey Street N	Community centre	930
Southampton Town Hall/Art Gallery	201 High Street	Offices / Art gallery	697
Community Complex	600 Tomlinson Drive	Indoor ice rink	3,945
Community Complex	600 Tomlinson Drive	Police stations and associated offices	600
Port Elgin Library	708 Goderich Street	Public library	390
Public Works Electrical Shop	433 Peel Street	Equipment or vehicle maintenance	321
Public Works Garage	339 Conc 6	Administrative Offices	200
Southampton Coliseum	26 Albert Street	Indoor ice rink	3,800
Southampton Fire Hall	50 Victoria Street	Fire station	484
Southampton Public Library	215 High Street	Public library	200

In future years the Water and Wastewater facilities operated by OCWA will be included in this list.

#### 4.1. Energy Consumption at the Town

In order to track progress, an energy baseline was established from which annual energy consumption was compared. The resulting dataset represents the Town's baseline (2013) compared to the most current reported energy performance (2017). Table 2 below presents the Town's 2017 energy data by fuel type expressed in equivalent kilowatt hours (ekWh), compared to the baseline year of 2013. The energy consumption data shown below does not include some of the Town's smaller accounts like outdoor park lighting and facilities that are not heated (see Table 1 for a full list of included facilities). Additionally, the data has not been corrected for yearly weather variations.

**TABLE 2:** Saugeen Shores Energy Consumption (2017) Compared to Baseline

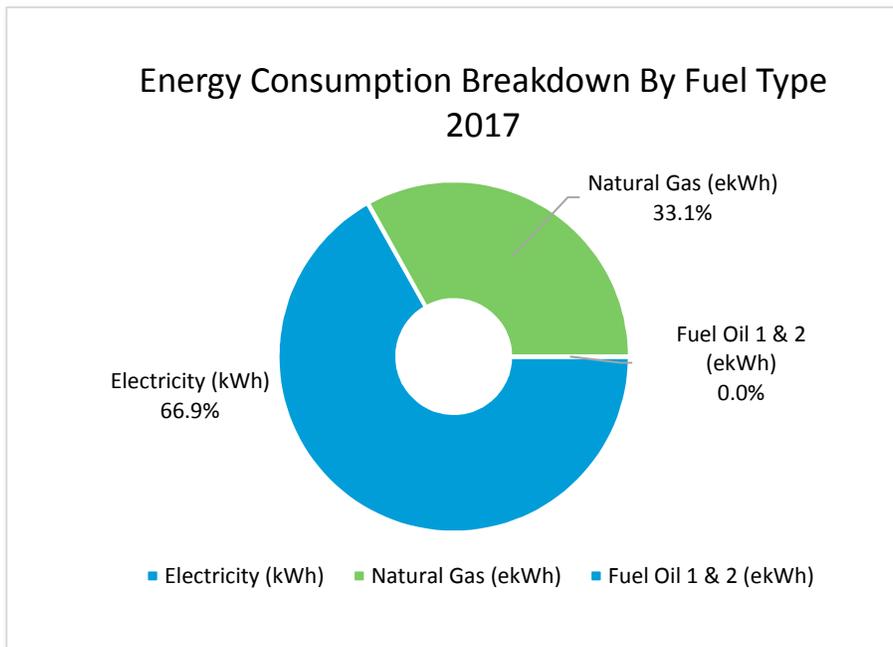
Account Centre	Electricity (kWh)	Natural Gas (m <sup>3</sup> )	Natural Gas (ekWh) <sup>1</sup>	2017 Total Energy (ekWh)	2013 Baseline (ekWh)	% Change
Facilities	2,373,394	110,587	1,175,291	3,548,685	3,960,787	-11.6 ↓
<b>Total Greenhouse Gas Emissions (tonnes)</b>				<b>249</b>	<b>432</b>	<b>-42.3 ↓</b>

**Note 1:** ekWh (equivalent kWh) is a calculated value using Natural Gas’s thermal content to convert consumption in volume units to “equivalent” kWh for comparison.

In 2013, the Town consumed approximately 3,961 eMWh and was responsible for 432.3 tonnes of associated GHG emissions. As indicated in Table 2 above, Saugeen Shores achieved an impressive 11.6% reduction in energy consumption and 42.3% reduction in GHG emissions over the five-year period ending in 2017 (using 2013 as a baseline). The GHG reduction is more significant than the energy reduction due the higher proportion of natural gas conserved and the elimination of fuel oil. Both of which produce more GHGs than electricity.

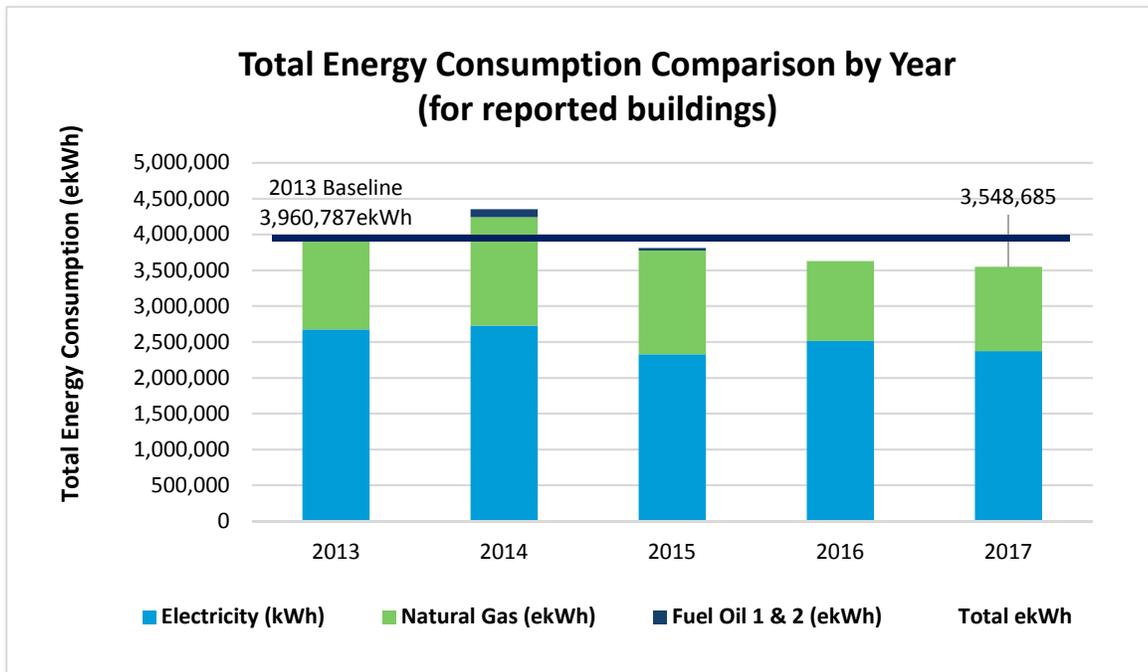
This improvement does not include the additional, and significant, savings from the recent street lighting upgrade.

The following figures illustrate energy use broken down by facility and fuel type. As indicated above, the Town consumes two main fuels, electricity and natural gas. The breakdown is shown in Figure 1 below.



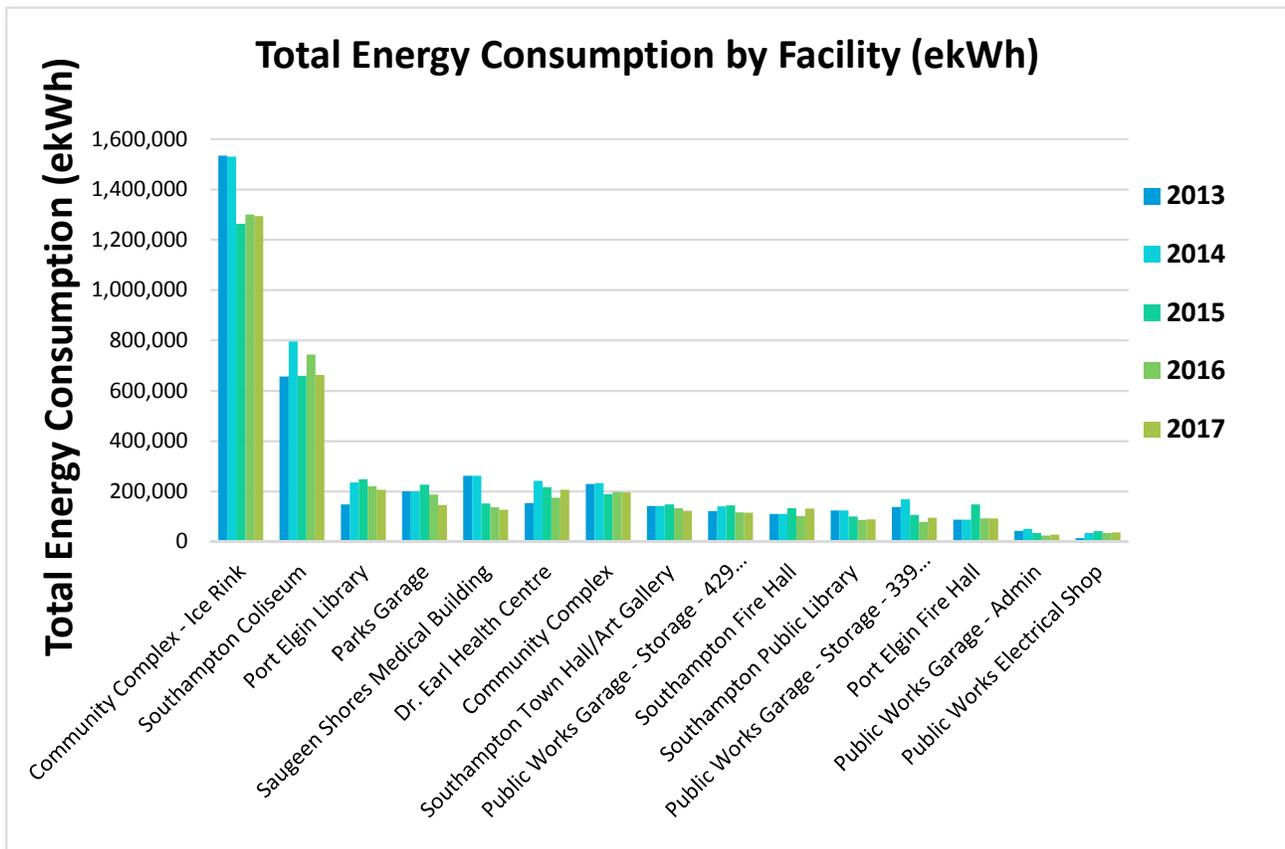
**Figure 1:** Energy Consumption Breakdown by Fuel Type (2017)

As illustrated in the Figure 1 above, approximately 67% of the total energy consumed by the town is provided by electricity with the remainder provided by from Natural Gas. A small amount of Fuel Oil was reported in 2014 and 2015 but is no longer a fuel source



**Figure 2:** Total Annual Energy Consumption (ekWh) for all Reported Town Facilities

Comparing 2017 consumption to the base year of 2013, as shown in Figure 2 above, over 410,000 ekWh less energy was consumed translating to a 183 tonne reduction in Green House Gases (GHGs). This is the equivalent of 38.9 cars removed from the road for one year or over 3,000 trees being planted.



**Figure 3:** Total Energy Consumption by Facility over 5 years

Figure 3 illustrates the energy consumed by facility and by year at the Town. The Community Complex and Southampton Coliseum are the highest consumers in the town and together make up approximately half of the energy use.

## 5. Our Energy Team

### *Energy Leader:*

The Finance Department is the designated leader for energy reporting requirements and holds the overall responsibility for corporate energy management. This department will be responsible for monitoring energy consumption and reporting the results to meet Ministry of Energy reporting requirements. The Infrastructure and Development and Community Services departments are primarily responsible for recommending and implementing energy reducing initiatives for operations and facilities that may impact all of the municipal departments.

### *All Staff at the Town:*

Staff members will be made aware of the Town's energy conservation efforts and their importance, and will be encouraged to make changes in their daily routines that support energy conservation. In addition, staff will be updated on the results of energy saving efforts and be involved in discussions on how to improve their energy consumption at their jobs.

## 6. Renewable Energy

The Town uses renewable geothermal energy to help heat and cool the Community Complex. In addition, the waste heat from the ice plant compressors is captured and used for in-floor heating both in the arena and the Police Station.

The town does not have any short-term plan to install additional renewable energy generation technologies in the next few years.

## 7. Programs and Systems

### ***Procurement Planning: Consideration of energy efficiency of acquired equipment:***

Our purchasing procedures will be modified to include energy consumption and efficiency ratings into the criteria for the selection of materials and equipment where possible. Wherever possible, Energy Star rated or other high efficiency criteria will be selected. Effort will be made to purchase equipment and materials that are energy efficient and decisions will not be based solely on their short-term economic feasibility but through life cycle costing.

Through the asset management planning process, an examination will be done of current materials and equipment to assess the feasibility of replacing less efficient items at the Town before their end of life.

## 8. Update and Review Process

### ***Energy Plan Review:***

As part of any energy management strategy, continuous monitoring, verification, and reporting is an essential tool to track consumption and dollar savings and/or avoidance as the result of implemented initiatives. The Finance Department will monitor and track energy consumption for all facilities reported to the through O.Reg. 507/18 and will provide a semi-annual up-date of energy consumption to department heads to ensure that all departments are aware of the success of our energy reduction initiatives.

### ***Energy Consumption Monitoring and Tracking:***

Annual energy consumption data will be measured against the previous year's energy consumption on a facility and overall basis with the purpose of confirming that overall the Town has achieved its goal of an average of 1% reduction in energy consumption per year. It is recognized that the ability to meet this target relies on the allocation of resources to implement energy reducing initiatives and the assumption that the number of facilities being monitored and the facility usage remains constant year over year. The success of the program will be measured over the five year term of the plan with less emphasis placed on year-over-year reductions. It is expected that the town will have achieved an overall energy reduction of 5% over the five year term of the plan.

## 9. Energy Conservation Action Plan

The Town has developed a key project list which will help ensure the Town meets its energy reduction goals.

The plan includes projects that will support several pillars of a strong energy management plan:

- Detailed list of specific actions needed to achieve the desired goals and objectives
- Monitoring and tracking mechanisms
- Enhanced communication and organizational development

### *Projects:*

The detailed list of projects included in the plan, which covers a period from July 2019 to June 2024, can be found in Appendix A.

The projects fall under the following broad categories:

- organizational improvements
- lighting
- HVAC
- building envelope
- domestic hot water (DHW)
- general equipment improvements

## Appendix A: Energy Conservation Action Plan

Table A1: Energy Conservation and Demand Management Action Plan

No.	Facility	Project Type	Description
1	All	Monitoring & Tracking	Development of a semi-annual management report that illustrates facility energy consumption and cost for facility operators.
2	All	Lighting	Continue to upgrade any remaining older lighting to LED by the end of the plan term.
3	Water and Wastewater Facilities	Monitoring & Tracking	Including water & wastewater treatment and pumping plants in our annual reporting.
4	Water and Wastewater Facilities	All	Work with OCWA to conserve energy where possible for the water and wastewater facilities.
5	Works Garage: Con. 6	Controls	Replace older thermostats with digital programmable models. Program temperature setback for unoccupied periods.
6	Works Garage: Con. 6	HVAC	Evaluate business case to replace older Natural Gas HVAC unit for shop (20yrs old) with a new high efficiency unit.
7	Works Garage: Con. 6	Building Envelope	Replace 3 older windows with triple pane low-e thermal windows.
8	Works Garage: Peel St.	Controls	Replace older thermostats with digital programmable models. Program temperature setback for unoccupied periods.
9	Works Garage: Peel St.	Building Envelope	Replace older windows with triple pane low-e thermal windows.
10	Coliseum	Ice Plant	Replace compressors with high efficiency equipment.
11	Southampton Town Hall	Building Envelope	Replace older windows with triple pane low-e thermal windows.
12	Southampton Town Hall	Controls	Optimize motion sensors in various areas including photocopy room and change rooms.
13	Port Elgin Fire Station	Domestic Hot Water	Upgrade older electric water heater to an instantaneous model.
14	Port Elgin Fire Station	Heating	Upgrade heating to forced air natural gas.
15	Southampton Fire Station	Heating	Upgrade heating to forced air natural gas.
16	Port Elgin Tourist Camp	Study	Complete a study of electrical opportunities at the Port Elgin Tourist Camp, which may include metering.
17	Port Elgin Harbour	Study	Review Harbour Dock Replacement Study for electrical energy efficiency opportunities.