

# Memorandum

Date: May 17, 2022

To: Members of Council

From: Katelyn Tozer, Manager, Energy and Environment, Corporate Strategy and Innovation

Subject: Update on the Town's Energy Conservation Efforts and Annual Energy Reporting

The purpose of this memorandum is to provide an update to Council on the Town's annual building energy and greenhouse gas emissions reporting to the Ministry of Energy, Northern Development and Mines (the Province), and progress on the Town's energy conservation measures outlined in the Corporate Greenhouse Gas Reduction Framework.

## Background

The *Electricity Act, 1998, Ontario Regulation 507/18* requires that all public agencies must:

1. Provide a summary of the public agency's annual energy consumption and GHG emissions for its facilities that have a heating and cooling load and are responsible for payment of the utility bills for the 2020 reporting year to the Province; and,
2. Implement a five-year energy conservation and demand management plan that must be approved by Senior Leadership.

The Town's Energy Conservation and Demand Management Plan was approved through the Corporate Greenhouse Gas (GHG) Reduction Framework (2019-2024) in 2019 to align with the *Electricity Act* requirements. The Town's target is to reduce the corporate GHG emissions by 24% or 853 tCO<sub>2e</sub> and energy usage by 15% or 2,306,555 ekWh of facility energy usage below 2017 levels by 2024. According to the Town's 2017 corporate GHG emissions inventory, energy consumption in Town facilities is responsible for the largest source of corporate emissions (54%).

## Facility Energy Consumption and GHG Emissions Reporting (2020)

A summary of the Town's 2017-2020 reporting of facility energy consumption and associated GHG emissions are provided in Table 1 below. The Town's 2020 report (Schedule A) will be submitted to the Province, by July 1, 2022.

**Table 1: Summary of the Town of Caledon's Annual Provincial Energy Reporting**

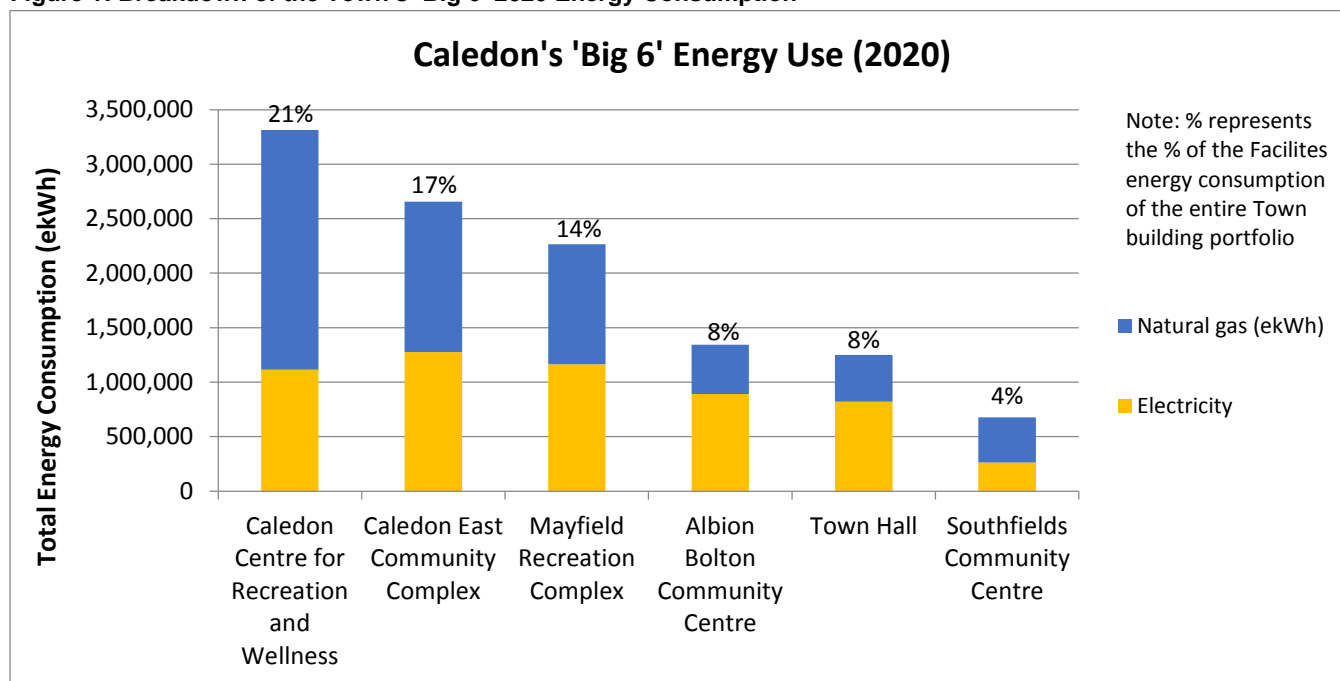
Year	Electricity (kWh)	Natural Gas (m <sup>3</sup> )	Fuel Oil (L)	Propane (L)	Total equivalent kWh (ekWh)	O. Reg 507/18 GHG Emissions tCO <sub>2</sub> e*	Absolute Energy % Change from the Reporting Year
2017	8,507,939	933,002		2,570	18,441,741	1,915	Baseline Year
2018	8,735,167	904,406		2,146	18,362,081	1,971	-0.43%
2019	8,118,831	901,302		1,526	17,708,398	1,953	-4.14%
<b>2020</b>	<b>7,346,438</b>	<b>818,549</b>		<b>1,333</b>	<b>16,055,163</b>	<b>1,843</b>	<b>-12.94%</b>

\*Note: there is a slight difference between the Province's quantification of emissions and the Town's due to a difference in the methodology of the emissions factors used for electricity and natural gas

In comparing the data to the Town's updated 2017 baseline year, outlined in the Corporate Greenhouse Gas Reduction Framework, Town facilities have consumed 12.94% less energy (non-weather normalized). Of significance, is the addition of the Bolton Fire Hall to the Town's building portfolio in August 2019 and Southfields Community Centre in October 2020. Additionally, in March of 2020, the Town issued facility closures due to the world-wide outbreak of the COVID-19 virus. Facility closures contributed to the energy savings in the 2020 year and are anticipated to further reduce energy use in 2021 due to ongoing closures or reduced services due to the pandemic. It is likely that facility emissions will increase in 2022 reporting, with facilities back to full capacity and increased ventilation rates to reduce virus transmission. This highlights the need and importance for continued investment in corporate energy conservation in order to meet our targets.

Staff have identified and prioritized the top energy consuming buildings as the 'Big 6', outlined in Figure 1 below. These facilities are responsible for 72% of the Town's building energy portfolio and have been subject to energy audits and associated retrofits.

**Figure 1: Breakdown of the Town's 'Big 6' 2020 Energy Consumption**



A breakdown of energy consumption by facility type is outlined in Figure 2 below. Recreation, administrative facilities and fire stations make up 87% of the Town’s total corporate energy consumption. Recreation facilities are responsible for the largest proportion of facility energy consumption due to the volume of facility users; energy intensive equipment (i.e. pools, ice rinks, etc.); facility size; and, extended operating hours.

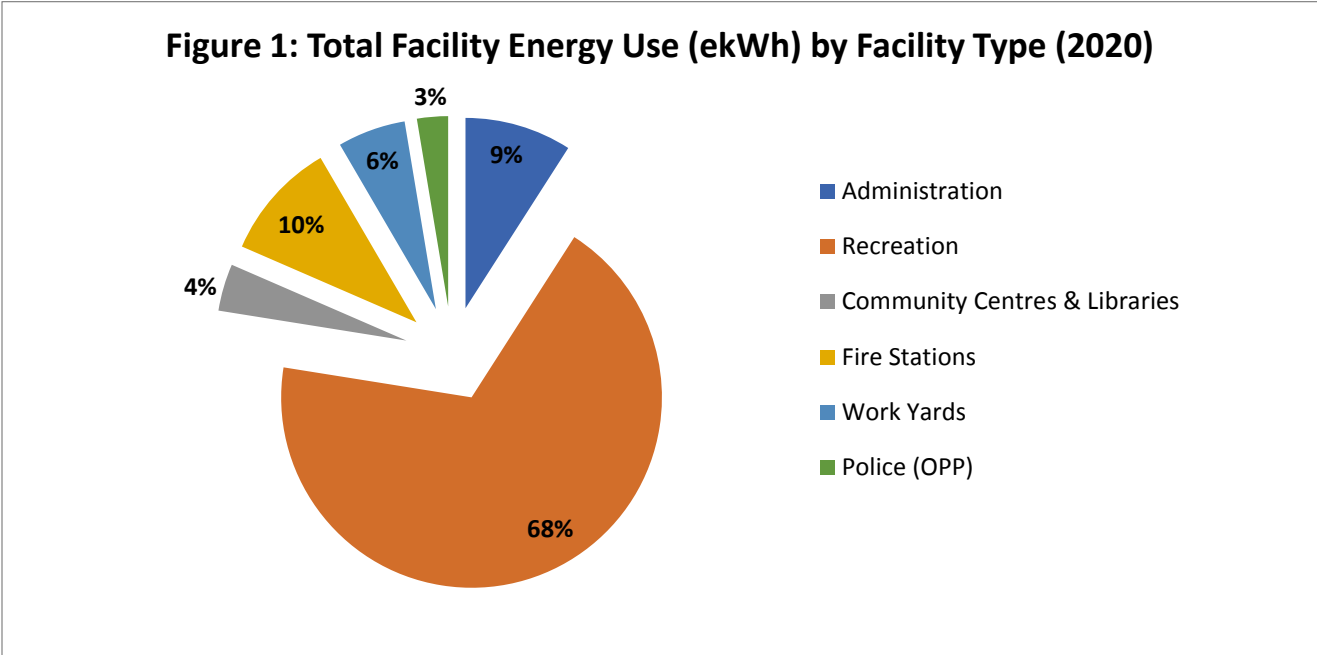


Figure 2: Total Facility Energy Use (ekWh) by Facility Type (2020)

**2021 Corporate Energy Management Accomplishments**

- Energy Incentives: The Town received \$48,905 from Hydro One and Enbridge gas for completing various energy retrofit projects
- Corporate Green Building Standard: Council approved an outcomes-based standard for corporate facilities that prioritizes energy and emissions performance. The updated standard requires all new eligible buildings to have solar panels installed and aligns with net zero ready performance by 2030.
- Building Automation System (BAS) training: Staff participated in BAS training to improve internal knowledge and skillset on the use of this software to improve building performance, and occupant comfort.
- Waste Heat Recovery at CECC: Council approved additional funds for the CECC renovation to upgrade the facility ice rink system to supply the pool area with waste heat captured from the refrigeration process reducing emissions and utility costs.

**2022 Corporate Energy Management Program Priorities**

To build on the Town’s energy management progress and successes, staff have determined the following priorities for 2022:

- Net Zero Pathway Study and Building Condition Assessments (BCA) (2022-2023): Town staff are developing a scope of work to undertake BCA's with a net zero lens, to outline opportunities to reduce Town facility emissions through equipment replacement and identify renewable energy opportunities.
- 2022 Revolving Fund Projects: Through the corporate energy reserve, staff have proposed to disburse over \$104,000 to support LED lighting retrofit CECC and install drain water heat recovery systems at the Mayfield and CCRW pools. The projects are estimated to save 206,269 ekWh of energy, \$23,064 in utility costs, and result in 26.97 tonnes of avoided carbon dioxide equivalent (CO2e) per year.

## Attachments

Schedule A: Corporate Energy and Greenhouse Gas Emissions Reporting (2020)

Schedule B: Ministry of Energy, Northern Development and Mines Submission (2020)