



To: **Committee of the Whole**

Agenda Section: Performance Management
Division: Corporate Performance
Department: Procurement, Fleet & Property

Item Number: **CCW - 2023-148**

Meeting Date: June 13, 2023

Subject: **Sustainable Operations Program – Summer 2023 Update**

Recommendation

That Item CCW 2023-148, dated June 13, 2023, regarding Sustainable Operations Program Summer 2023 Update, be received; and

That the 2021 Energy Consumption and Greenhouse Gas Emissions Report, substantively in the form attached as Schedule 2 to Item CCW 2023-148, be approved; and

That the Energy Consumption and Greenhouse Gas Emissions Report be posted to the County's website in compliance with Electricity Act requirements, specifically Ontario Regulation 25/23.

Executive Summary

There are two parts to this report and the purposes are as follows:

- To provide an update on the progress of the County's Sustainable Operations Program and the corresponding activities undertaken by staff (Schedule 1).
- To acquire Council's approval of the 2021 Energy Consumption and Greenhouse Gas Emissions Report that will be posted on the County's website effective July 1, 2023 in compliance with Electricity Act requirements, Ontario Regulation 25/23 (Schedule 2)

Background/Analysis/Options

Since 2013, the County of Simcoe has submitted data to the Province of Ontario in compliance with the Electricity Act, 1998.

In 2023, Ontario Reg. 507/18 under the Electricity Act, 1998, titled Broader Public Sector (BPS): Energy Reporting and Conservation and Demand Management Plans, was revoked and replaced with the new reporting regulation O. Reg. 25/23 for BPS organizations in Ontario effective February 23, 2023. This new regulation aims to streamline reporting, simplify language, and eliminate duplicative and unclear reporting requirements.

O. Reg. 25/23 retains many of the provisions in the former regulation and does not change the policy intent of the former BPS energy reporting regulation. Key changes in the new regulation include the following:

1. Streamlines reporting and tracking of energy use by moving reporting from a custom-made platform that has reached the end of its life, to the widely used ENERGY STAR Portfolio Manager electronic reporting system.
2. Changes the energy consumption and greenhouse gas (GHG) emissions reporting period from two calendar years in the past to one calendar year in the past. The phase-in reporting to the previous calendar year is as follows:
 - Requires reporting for one year (2021 energy data) in 2023 with no change to the current reporting requirements.
 - Requires reporting for two years (2022 and 2023 energy data) in 2024 as a transitional year.
 - Starting in 2025, requires reporting for one year (2024 energy data in 2025).

Reporting Requirements of the Electricity Act - Energy Reporting

Regulation 25/23 under the Electricity Act, Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans, requires that:

1. Each year, every public agency shall submit to the Ministry, through the use of ENERGY STAR Portfolio Manager the:
 - a. summary of annual energy consumption; and
 - b. summary of annual greenhouse gas emissions.

2. The summaries for a year ending December 31 shall be submitted on or before July 1 of the following year.
3. Every public agency that is not a ministry of the Government of Ontario shall prepare an energy conservation and demand management plan.
4. The energy conservation and demand management plan shall be approved by the senior management of the public agency to whom the plan applies before the public agency publishes the plan on the public agency's website and makes the plan available to the public in printed form at the public agency's head office.
5. On or before July 1, 2024 and on or before July 1 in every fifth year thereafter, every public agency shall publish on its website, and make available to the public in printed form at its head office, the public agency's energy conservation and demand management plan.

This regulation impacts broader public services including municipalities, municipal service boards, post-secondary educational institutions, public hospitals, and school boards.

Under the Energy Reporting requirement, municipal facilities that must be reported are as follows and, currently do not include social housing units, long-term care, or waste diversion facilities.

Although the regulation does not require reporting for long-term care, the County has historically reported on its long-term care facilities and will continue to do so on a voluntary basis.

Table 1: From O. Reg. 25/23: List of Municipal Operation Types to Report (Mandatory)

1.	Administrative offices and related facilities, including municipal council chambers.
2.	Public libraries.
3.	Cultural facilities, indoor recreational facilities and community centres, including art galleries, performing arts facilities, auditoriums, indoor sports arenas, indoor ice rinks, indoor swimming pools, gyms/indoor courts for playing tennis, basketball or other sports.
4.	Ambulance stations and associated offices and facilities.
5.	Fire stations and associated offices and facilities.
6.	Police stations and associated offices and facilities.
7.	Storage facilities where equipment or vehicles are maintained, repaired or stored.
8.	Buildings or facilities related to the treatment of water or sewage.
9.	Parking garages.

Annual Energy Consumption and Greenhouse Gas Emissions

For the 2021 reporting period, over 140 corporate utility accounts generated more than 1500 invoices that were reviewed and entered into the energy management software EnergyCAP to help analyze and understand our energy management opportunities. Additional energy and resource usage data – while not required for Provincial reporting was collected, including water and wastewater in an effort to understand the County's total utility usage and environmental impacts and corresponding greenhouse gas emissions.

A summary of reported information is shown below in Table 2, including previous years' submissions for comparison.

Table 2: Total Energy Consumption and Greenhouse Gas Emissions for County of Simcoe – 2021

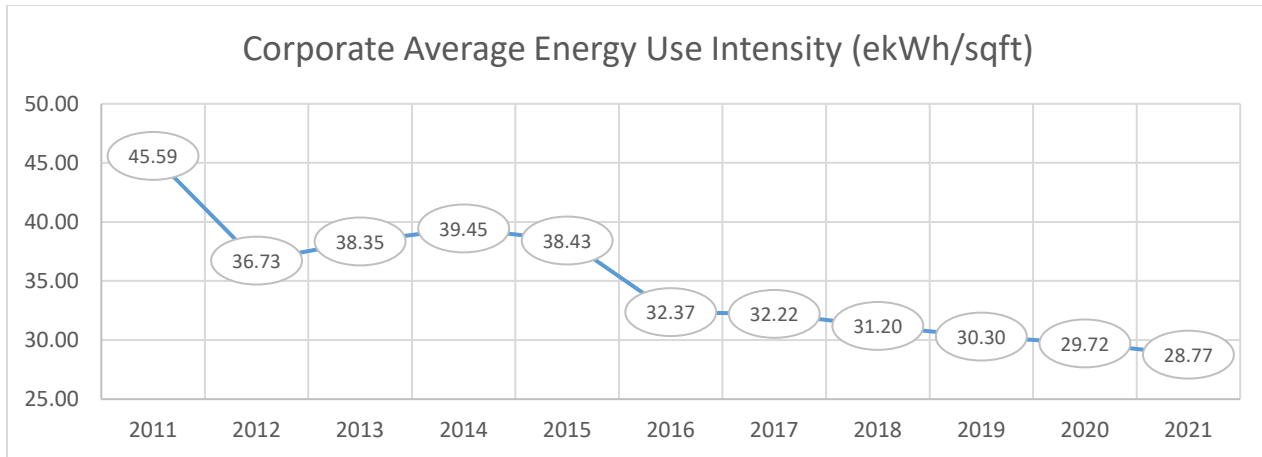
Year	Electricity (kWh)	Natural Gas (m3)	Greenhouse Gas Emissions (kg)	Total Applicable Square Footage	Average Energy Intensity (ekWh/sq ft)
2021	14,538,354	2,114,223	4,528,541	1,120,489	28.77
2020	13,868,102	1,991,033	4,261,605	1,109,073	29.72
2019	13,256,544	2,293,383	4,907,942	1,112,170	30.30
2018	14,258,022	2,461,488	5,264,072	1,105,179	31.20
2017	14,242,330	2,148,955	4,649,305	1,088,591	32.22
2016	14,594,439	2,148,904	4,739,212	1,074,131	32.37
2015	15,013,937	2,249,952	4,787,361	1,021,207	38.43

Energy Use Intensity Year-Over-Year

Energy use intensity (EUI) is a useful measure to understand a facility's energy use based on the square feet of 'applicable' floor space. For example, a storage garage that is not heated or cooled would not be considered 'applicable' floor space. Since 2011, the County has reduced its average annual Energy Use Intensity by 37%, as shown in Figure 1 below.

In addition to the COVID-19 pandemic contributing to a lower than usual commodity usage, the 2021 reporting period has been our most energy efficient year since the inception of the program for various reasons. Energy management strategies and sustainability initiatives continue to play a key role in our success.

Figure 1 – Corporate Average Energy Usage Intensity (ekWh/Sq ft) – 2011 to 2021



*EUI values – as prescribed by Provincial legislation – are not normalized for weather and, therefore, abnormally warmer and cooler years can reflect a higher EUI value


**Increasing trends in EUI from 2013-15 were largely driven by cooler winters measured by heating degree days (HDDs). Overall decreasing trends in EUI were driven by: temperate winters; older, less efficient facilities being decommissioned (e.g. Creemore Roads Garage), and the success of energy efficiency projects.

Weather Impacts

As noted above, the EUI values are not normalized for weather. Compiling weather data from various relevant weather stations, we found that there was an overall decrease of heating degree days in the County of Simcoe by an average of 8% while there was an increase in cooling degree days by an average of 10% meaning our heating systems were used less frequently while our cooling systems were used more frequently in comparison to 2020.

EnergyCAP utility data supports these claims as our natural gas (heating) usage only increased 0.7%, while electricity (cooling) usage increased by 4.3%, as seen in Table 3 below. The County continues to pursue energy-saving measures in new construction and operations.

Table 3 – Calendarized Utility Usage – 2021



County of Simcoe - Calendarized Usage - 2021		Report-06 - Year-over-Year Comparison			
		Use, Jan - Dec			
Commodity Name	Commodity Code	Jan 2020 - Dec 2020	Jan 2021 - Dec 2021	UOM	Change over 2020
Electric	ELECTRIC	14,522,603	15,153,622	kWh	631,019 4.3 % ▲
Natural Gas	NATURALGAS	2,116,298	2,130,422	M3	14,124 0.7 % ▲
Propane	PROPANE	51,937	45,159	L	-6,778 -13.0 % ▼
Water	WATER	78,300	113,774	M3	35,474 45.3 % ▲
Total		37,379,339	38,112,812	eKWH	733,473 2.0 % ▲

2022 Sustainable Operations Key Outcomes

Since the 2021 update (included in CCW 2022-129), Sustainable Operations staff, the five Green Teams, and County staff have pursued energy and resource saving actions aligned with the goals and objectives outlined in the Corporate Conservation and Energy Management Plan.

Project highlights (expanded in Schedule 1) involving and supported by Sustainable Operations in 2022 include:

1. Continuation of Progress in the Partners for Climate Protection Program.

Staff have completed Milestone 1 of the “Partners for Climate Protection” (PCP) program and the International Council for Local Environmental Initiatives (ICLEI), and the Federation of Canadian Municipalities (FCM) have formally approved Milestone 1 – Baseline Inventory submission.

Milestone 2 – Setting an Emissions Reduction Target and Milestone 3 – Develop the Climate Action Plan, require significant undertakings requiring many resources. They also require a varied skill set that includes engagement, data collection, modelling, financial analysis, change management and an understanding of best practices in a municipal setting.

Reported in CCW 2022-312, Sustainability Solutions Group (SSG) was engaged in Fall 2022 to assist with Milestone 2, the setting of an emissions reduction target. The 2023 Council approved budget includes funds for SSG to also assist with Milestone 3.

As reported in CCW 2023-093, Sustainable Operations staff are currently in the process of completing Milestone 2 and 3. Staff will continue to report back to Council on progress.

2. Sustainable Travel – Continued Operation of Level 3 Electric Vehicle chargers and installation of Level 2 Electric Vehicle Charging Stations.

County of Simcoe chargers provided 707 unique charging sessions over four sites and generated \$4,348.74 of revenue from January 1st, 2022 - December 31st 2022. The County continues to operate and maintain three Level 3 publicly accessible electric vehicle charging stations. Locations include the County Museum, Stayner Station Park, and the Washago carpool lot. In addition, two Level 2 dual-port chargers (4 charging ports total) are available for public use at the County's Administration Centre.

In 2022, the County was successful in receiving approval for the installation of 10 additional Level 2 charging stations (for a total of 20 charging connectors). A total of six dual port stations are currently being installed at the Administration Centre, two stations at the Victoria Harbour affordable housing and two at the Wasaga Beach affordable housing location.

Following this latest installation, the County will have 27 electric vehicle charging points available for fleet and public use. Electric vehicle charging opportunities continue to be a consideration as funding envelopes become available and during the design of new facilities.

In addition to electric vehicle charging stations, the County has made efforts to green its fleet. Since purchasing its first fully electric vehicle (EV) in September 2020, the County of Simcoe has seen enormous environmental and fiscal success and in 2022 a second electric vehicle was added to the fleet.

With the support of Council and the success of the initial vehicles, the County is hoping to continue purchasing electric vehicles when cars and trucks in the fleet retire and as additional electric vehicles become more readily available and easily attainable.

3. Continuation of Cross-Corporate Energy Efficiency Initiatives.

A variety of energy efficiency projects were pursued across the corporation, including but not limited to the tracking of present day power generation systems (solar), LED lighting upgrades; heating, cooling and ventilation projects, and building envelope upgrades. Properties include Long Term Care facilities, Archives, Transportation Maintenance facilities, the Simcoe County Museum, Affordable Housing, and the Administration Centre.

The new Simcoe Village Campus is targeting a LEED certification that will aim to reduce energy usage, operational GHGs and other negative impacts on the environment overall. Paramedic Facility construction design continues to take "LEED like" design features into account.

In 2022, the County received \$1,560 for the replacement of 13 – 400W metal halide fixtures with 200W LED high-bay fixtures at the Stewart's Lane roads garage. Staff continue to work with County departments to submit applications to the Save on Energy Retrofit Program and Enbridge Natural Gas Incentive programs for eligible equipment upgrades.

EnergyCap software continues to be updated with all corporate utility accounts which will include affordable housing multi-residential buildings in 2023. The inclusion of the affordable housing units puts us one step closer to maintaining a complete source of operational utility usage and greenhouse gas emissions.

4. Continuation of Support for Future Renewable Energy Opportunities at the County.

Solar PV systems continue to provide emissions free electricity at the Forestry Interpretive Centre, the Administration Centre, multiple Social Housing sites, and the Archives. Furthermore, the Creemore Transportation Maintenance Garage was constructed with a solar ready roof. Renewable energy opportunities continue to be a consideration as funding envelopes become available and during the design of new facilities.

In 2022, the Administration Centre generated 21,109 kWh of electricity from its solar panels, while the Archives generated 46,033 kWh of electricity. The generation of electricity from these two sites represents over \$10,180 in avoided energy costs.

5. Continuation of Efforts to Create a Culture of Sustainability at the County.

Communication efforts continued to promote sustainable behaviours through events including Earth Day, Earth Hour, and World Environment Day. In 2022, Earth Hour, Earth Day, and World Environment Day promotions included advocacy of sustainable practices and awareness of behaviours that can promote the health of our planet. All events and information were posted via the Intranet, Facebook, Twitter, and Instagram.

6. Sustainable Operations Outreach and Networking.

Staff continue to develop and strengthen relationships with area municipalities and peer networks. Staff is pleased to announce that quarterly conference calls with contacts at area municipalities throughout the County of Simcoe resumed in 2022 over virtual platforms. Our collective efforts strengthen our energy conservation strategies and sustainable ambitions which foster vibrant, healthy, and sustainable communities.

7. Environmental Education with Staff.

Continued participation of educated, informed and passionate staff that understand their work environments the best have helped to generate many successful environmental campaigns to streamline processes and save resources through the County's five Green Teams.

Financial and Resource Implications

There are no direct financial or resource implications associated with this Item.

In 2022, staff was successful in attaining a total of \$16,088 in savings, cost avoidance, and incentives, shown as follows:

- Avoided energy costs from solar power generation - \$10,180
- Electric vehicle charging revenue - \$4,348
- Save on Energy Retrofit Program - \$1,560

Since the initiation of the Sustainable Operations program in 2012, the cumulative program benefits are \$2,206,378.

Relationship to Corporate Strategic Plan

This Item is directly related to Strategic Direction D:

Environmental Sustainability: To preserve, conserve, and safeguard our environment and natural resources, while recognizing opportunity, innovation, and the needs of our community.

Reference Documents

- CCW 2020-068 – PCP Report – Update on PCP Program and Planning for Climate Action
- CCW 2020-102 Sustainable Operations Program – Summer 2020 Update
- CCW 2021-178 Sustainable Operations Program – Summer 2021 Update
- CCW 2021-271 Sustainable Operations Program – Fall 2021 Update
- CCW 2022-129 Sustainable Operations Program – Summer 2022 Update
- CCW 2022-312 Sustainable Operations Program – Fall Update
- CCW 2023-093 Sustainable Operations Energy Reporting and Climate Action Planning

Attachments

- Schedule 1 – Sustainable Operations Program Update
- Schedule 2 – Energy Consumption and Greenhouse Gas Emissions 2021
- Schedule 3 – County of Simcoe Green Team Members

Prepared By Angela Leitch, Sustainable Operations Program Supervisor

Approvals

	Date
Catherine Payne, Manager, Procurement & Sustainable Operations	May 30, 2023
Dawn Hipwell, Director, Procurement, Fleet and Property	May 30, 2023
Lealand Sibbick, Treasurer, Corporate Performance	June 5, 2023
Mark Aitken, Chief Administrative Officer	June 6, 2023