



The Corporation of the Township of St. Clair

ENERGY REPORTING AND CONSERVATION AND DEMAND MANAGEMENT PLAN 2019-2023

Overview

The St. Clair Township Energy Conservation Plan provides a brief background and summary of the requirements relating to Ontario Regulation 507/18 Energy Reporting and Conservation and Demand Management Plans. Results from the completion of the Ministry of Energy's 2017 Energy Consumption and Greenhouse Gas Emissions Template is included as an energy consumption benchmark (Appendix A). In addition, the overall summary energy reduction projects from the Township's previous energy plan (2013-2017) can be found in Appendix B, while a list of new energy reduction projects to implement over the next five years (2019-2023) can be found in Appendix C.

Purpose

The Energy Reporting and Conservation and Demand Management Plan aims to provide a basis for the Township of St. Clair to implement improvements to its infrastructure and operations that **reduce energy and water use**, their associated costs, as well as environmental effects of the Township's activities.

Background

Ontario Regulation 507/18 was established to help municipalities better understand their energy usage, develop conservation plans to guide energy savings and demonstrate leadership in conservation.

The St. Clair Township Energy Conservation Plan was developed to meet the requirements of O. Reg 507/18.

The Township of St. Clair has been committed to energy conservation for many years to reduce energy consumption, decrease operating costs and to set an example for the community as to why conservation is important. It is the intention of the municipality to further develop the Energy Conservation Plan and enhance the municipality's commitments as projects develop through Council's approval and as the Township's aging infrastructure requires rehabilitation and/or replacement. Similar to the Township's previous 2014 Energy Conservation and Demand Management Plan, this five year plan is valid from 2019- 2023, at which time a thorough review process will be required for a subsequent five year plan.



The Township of St. Clair has 31 facilities including street lighting that are identified as reportable under O. Reg 507/18. These include community halls, libraries, museums, fire, recreation and administration facilities, wastewater treatment and public works garages, as well as golf course club house, just to name a few. A list of the required facilities that municipalities are to include in their annual energy consumption report can be found in Appendix A. The energy reduction projects found in Appendix C will be included in the annual Council budget discussions over the five-year term of this Plan to reduce the municipality's energy consumption from the 2017 baseline values (Appendix A).

Goals and Objectives

- To improve energy efficiency within Township facilities, reduce greenhouse gas emissions and energy consumption in day-to-day operations and extend the lifecycle of Township assets, where possible;
- To maximize fiscal resources through direct and indirect energy cost avoidance;
- To increase conservation knowledge and mindfulness among staff through education and utilizing best practices;
- To demonstrate leadership and awareness within the Township of St. Clair community by creating a culture of conservation and sustainability;
- To increase the comfort and safety of the staff and citizens while using Township facilities;
- To support Ontario's Conservation First policy, where conservation is the first resource considered before building new facilities, wherever cost effective;
- Annual energy conservation work plans be created by each department and the Directors from each department be responsible for leading and coordinating;

Reduction Target

The Township's energy consumption benchmark, based on 2017 electricity, natural gas and greenhouse gas emission data, can be found in Appendix A. A requirement of O. Reg 507/18 involves municipalities reporting electricity and natural gas consumption to the Ministry of Energy on an annual basis. Municipalities report energy and natural gas usage five years prior to the current year (i.e., the report for 2017 energy consumption was submitted in 2019).



The completion of the energy consumption projects from the Township's 2014 Energy Conservation and Demand Management Plan has built the foundation for successful energy management practices. In the previous five years we completed energy audit on the Sports Complex and incorporated some the recommendations, retrofitted most of the facilities with ceiling LED light and most importantly changed all of our street lights which resulted in significant energy savings.

The implementation of proposed energy conservation measures throughout Township owned infrastructure will continue to promote successful conservation practices. The Township of St. Clair is aiming to reduce its energy consumption within its facilities by 1-5% between 2019 and the end of 2023. The proposed energy conservation measures to support the Township in achieving this target can be found in Appendix C.

Council will review the proposed energy conservation measures during annual budget discussions. These proposed measures may change as technology is improved, or the priorities of Council are altered.

Incentive Funding

To ensure that the Township of St. Clair will take advantage of all funding and grant opportunities related to energy efficient projects, the Township will liaise with representatives from local utility providers. Township staff and utility representatives are in a unique position to review current and future process improvements, program implementations and projects that can meet future funding requirements. As funding opportunities arise that are suitable for specific energy conservation projects, Township Staff will report to Council and clearly outline the cost savings associated with a successful application.

Asset Management

Asset Management planning takes into consideration the potential impacts of climate change and any actions that may be required to address vulnerabilities that may be caused by climate change to the Township's infrastructure assets. This involves any adaptation opportunities that could arise from climate-driven vulnerabilities, as well as mitigation opportunities such as greenhouse gas emission reduction targets. In addition, mitigation approaches, such as reduced energy consumption, can be a significant decision driver when replacing new assets or rehabilitating existing assets.



The St. Clair Township contribution to climate change through greenhouse gas emissions will be mitigated in accordance with local reduction targets, financial capacity, and stakeholder support. In addition, climate change will be considered as part of the Township’s risk analysis within its asset management plan. Awareness of infrastructure risks will enable the municipality to balance the potential cost of climate change vulnerabilities with the cost of proactively reducing or eliminating these vulnerabilities before they occur.

Summary

The St. Clair Township Energy Conservation and Demand Management Plan will assist the Township in meeting energy related goals. These goals will need to be established annually through Council’s approval of the municipality’s budget. The Township of St. Clair is a large energy user and has significant energy expenditures. This Energy Conservation Plan can help reduce energy usage and costs by implementing effective energy reduction strategies, managing energy retrofits, monitoring and tracking the Township’s energy usage and introducing energy awareness programs to staff.

Appendix A

Energy Consumption and Greenhouse Gas Emissions Reporting - for 2017

Confirm consecutive 12-mth period (mth-yr to mth-yr)	Jan/2017 - Dec/2017
Sector	Municipality
Agency Sub-sector	Municipal
Organization Name	Township of St. Clair

Operation Name	Operation Type	Address	City	Postal Cod	Total Floor		Avg hrs/wk	Annual Flow (ML)	Electricity Quantity	Electricity Unit	Natural Gas Quantity	Natural Gas Unit	GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)	Energy Intensity (ekWh/Mega)
					Area	Unit									
Becher Fire Hall	Fire stations and associated offices and facilities	442 Kimball Roa	Sombra	NON 2HO	367.00	Square meters	167.54	0.00000	11,238.00	kWh	8,836.00	Cubic Meter	16,899.975	26.617	0.000
Brigden Community Hall	Community centres	3016 Brigden Rd	Brigden	NON 1B0	996.00	Square meters	56	0.00000	23,252.00	kWh	8,613.00	Cubic Meter	16,686.183	10.707	0.000
Brigden Fire Station	Fire stations and associated offices and facilities	1561 1st street	Brigden	NON 1B0	344.00	Square meters	167.98	0.00000	29,347.00	kWh	7,455.00	Cubic Meter	14,602.269	29.323	0.000
Brigden Streetlights	Other	Brigden Str lght	Mooretown	NON 1Mo	1.00	Square meters	84	0.00000	28,500.00	kWh			492.993	2,647.736	0.000
Civic Centre	Administrative offices and related facilities, including r	1155 Emily Street	Mooretown	NON 1Mo	1,374.00	Square meters	39.89	0.00000	160,190.00	kWh	7,240.00	Cubic Meter	16,459.106	16.034	0.000
Corunna Fire Hall	Fire stations and associated offices and facilities	249 Hill Street	Corunna	NON 1G0	210.00	Square meters	167.98	0.00000	34,096.00	kWh	6,709.00	Cubic Meter	13,274.009	46.627	0.000
Corunna Library	Public libraries	417 Lyndoch	Corunna	NON 1G0	121.00	Square meters	50.99	0.00000	15,000.00	kWh	3,383.00	Cubic Meter	6,655.461	39.122	0.000
Corunna Streetlights	Other	Cor Strt lights	Mooretown	NON 1Mo	1.00	Square meters	84	0.000	218,892.00	kWh			3,786.394	20,335.723	0.000
Courtright Community Hall	Community centres	1596 Third Stree	Courtright	NON 1HO	691.00	Square meters	56	0.000	23,695.00	kWh	6,935.00	Cubic Meter	13,521.374	13.095	0.000
Courtright Fire Hall	Fire stations and associated offices and facilities	1550 Eighth St	Courtright	NON 1HO	206.00	Square meters	167.54	0.000	26,768.00	kWh	8,358.00	Cubic Meter	16,264.893	52.132	0.000
Courtright SR Hall & Library	Community centres	1533 Fourth Stre	Courtright	NON 1HO	260.00	Square meters	12.96	0.000	6,709.00	kWh	1,693.00	Cubic Meter	3,316.884	8.826	0.000
Courtright Streetlights	Other	Court str lights	Mooretown	NON 1Mo	1.00	Square meters	84	0.000	63,540.00	kWh			1,099.115	5,903.057	0.000
Courtright Wastewater	Facilities related to the treatment of sewage	1464 St. Clair Pw	Mooretown	NON 1Mo	1.00	Square meters	168	90.151	774,744.00	kWh	14,816.00	Cubic Meter	41,413.051	86,604.654	10,340.486
Emergency Service -OPP Station	Police stations and associated offices and facilities	388 Lyndoch St	Corunna	NON 1G0	650.00	Square meters	167.98	0.000	124,392.00	kWh	13,411.00	Cubic Meter	27,506.932	38.150	0.000
Golf Course	Gyms and indoor courts for playing tennis, basketball	132 Moore Line	Mooretown	NON 1MO	566.00	Square meters	55.98	0.000	115,474.00	kWh	8,971.00	Cubic Meter	18,958.284	34.603	0.000
Moore Museum	Cultural facilities	94 Moore Line	Mooretown	NON 1Mo	746.00	Square meters	39.89	0.000	22,505.00	kWh	4,583.00	Cubic Meter	9,054.035	8.868	0.000
Moore Roads Garage	Storage facilities where equipment or vehicles are mai	359 Moore Line	Mooretown	NON 1MO	725.00	Square meters	168	0.000	44,280.00	kWh	10,304.00	Cubic Meter	20,246.976	19.707	0.000
Port Lambton Community Hall	Community centres	507 Stoddard St	Port Lambton	NON 2B0	360.00	Square meters	56	0.000	15,757.00	kWh	6,469.00	Cubic Meter	12,503.031	21.808	0.000
Port Lambton Fire Hall	Fire stations and associated offices and facilities	362 West Broad	Port Lambton	NON 2B0	325.00	Square meters	167.98	0.000	26,567.00	kWh	8,960.00	Cubic Meter	17,399.574	34.815	0.000
Port Lambton Streetlights	Other	Port Lmb Str lgh	Mooretown	NON 1Mo	1.00	Square meters	84	0.000	47,016.00	kWh			813.283	4,367.927	0.000
Sombra Community Hall	Community centres	152 Smith Street	Sombra	NOP 2HO	251.00	Square meters	56	0.000	8,241.00	kWh	4,076.00	Cubic Meter	7,848.748	19.084	0.000
Sombra Day Care/Library	Indoor recreational facilities	3536 St. Clair Pw	Sombra	NON 2HO	836.00	Square meters	39.99	0.000	42,975.00	kWh	8,774.00	Cubic Meter	17,331.743	15.138	0.000
Sombra Museum-Bury House	Cultural facilities	3476 St. Clair Pk	Sombra	NON 2HO	265.00	Square meters	39.89	0.000	5,619.00	kWh	1,996.00	Cubic Meter	3,870.889	9.407	0.000
Sombra Museum	Cultural facilities	3470 St. Clair Pa	Sombra	NOP 2HO	289.00	Square meters	39.99	0.000	10,278.00	kWh	5,471.00	Cubic Meter	10,521.409	21.995	0.000
Sombra Streetlights	Other	Smbra st lights	Mooretown	NON 1Mo	1.00	Square meters	84	0.000	39,612.00	kWh			685.208	3,680.074	0.000
Sports Complex	Indoor sports arenas	1166 Emily St	Mooretown	NON 1MO	7,747.00	Square meters	98	0.000	1,226,091.00	kWh	215,136.00	Cubic Meter	427,950.852	42.122	0.000
Wilkesport Fire Hall	Fire stations and associated offices and facilities	1343 Main St	Wilkesport	NOP 2R0	204.00	Square meters	167.98	0.000	17,600.00	kWh	6,769.00	Cubic Meter	13,102.099	40.777	0.000
Wilkesport Library	Public libraries	1349 Main St	Wilkesport	NOP 2R0	89.00	Square meters	11.99	0.000	4,649.00	kWh	1,416.00	Cubic Meter	2,757.546	20.562	0.000
Wilkesport Park & Hall	Community centres	1622 Baby Road	Wilkesport	NOP 2R0	836.00	Square meters	56	0.000	27,271.00	kWh	10,906.00	Cubic Meter	21,090.912	15.911	0.000
Wilkesport Streetlights	Other	Wilk Str lghts	Mooretown	NON 1Mo	1.00	Square meters	84	0.000	6,708.00	kWh			116.035	623.193	0.000
Wilksport Public Works Garage	Storage facilities where equipment or vehicles are mai	1245 Wilkesport	Wilkesport	NOP 2R0	465.00	Square meters	168	0.000	46,264.00	kWh	7,850.00	Cubic Meter	15,641.697	25.911	0.000
Total					18,930.00				3,247,270.00		389,130.00		791,870.96	124,773.71	

Appendix B

St. Clair Township

Energy Consumption and Greenhouse Gas Emission Reporting Summary Comparision 2013-2017

Year		Electricity Quantity	Electricity Unit	Natural Gas Quantity	Natural Gas Unit	GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)	Report Year
2013	Total	4,517,447	kwh	433,363	Cubic Metter	1,162,708	229,088	2015
2014	Total	4,890,247	kwh	486,771	Cubic Metter	1,115,966	253,376	2016
2015	Total	4,750,359	kwh	429,223	Cubic Metter	1,004,118	238,586	2017
2016	Total	3,784,827	kwh	407,573	Cubic Metter	905,111	175,115	2018
2017	Total	3,247,270	kwh	389,130	Cubic Metter	791,871	124,774	2019
Decrease 2013-2017		- 1,270,177		- 44,233		- 370,837	- 104,314	
% Decrease 2013-2017		-28.12%		-10.21%		-31.89%	-45.53%	

Appendix C

	A	B
1	St. Clair Township	
2		
3	Proposed Energy Conservation Measures for 2019 to 2023	
4		
5	Measures	Target Date
6		
7	Port Lambton Hall - HVAC	2018
8		
9	Sombra Day Care/Library - HVAC	2019
10		
11	Emergency Building - HVAC	2019
12		
13	Courtright Park Ball Diamond - Light	2020
14		
15	Courtright Fire Hall - HVAC	2019
16		
17	Corunna Fire Hall - HVAC	2019
18		
19	Fire Halls - LED lights	2019-2020
20		
21	Community Halls - LED lights	2021-2022
22		
23	Complex Retrofit - Upgrades	2023
24		
25	Corunna Decorative Street lights	2019
26		
27	Courtright Waste Water Treatment Plant - replace 10 lights	2019
28		
29	WWTP Recycle of Effluent-reduce potable water use eqates 5,130 KWH/yr	2019
30		
31	WWTP Mixing Pumps VFD's	2020
32		
33	Moore Works Centre - LED Lights replace 5 TD10's East Shed	2020
34		
35	Moore Works Centre - LED Lights replace 125 TD8's main shop	2022
36		
37	Wilkesport Works Centre - LED lights Replace 12 lights in East Shed	2020
38		
39	Wilkesport Works Centre - LED lights Replace 14 lights in main Shed	2021