



Energy Management Plan

July 2014 - July 2019

Table of Contents

1. Introduction.....	2
2. About the Township of Guelph/Eramosa.....	2
3. Commitment.....	2
a. Declaration of Commitment	
b. Vision	
c. Policy	
d. Goals	
e. Objectives	
4. Proposed Target.....	3
5. Corporate Operations Profile.....	3
6. Renewable Energy.....	3
7. Energy Leaders.....	2
8. Energy Plan Review.....	4
9. Overview of past and ongoing Energy Reduction Initiatives.....	4
10. Summary of energy and GHG reduction initiatives to be pursued.....	7
11. Energy Consumption and Green House Gas Emissions.....	8

1. Introduction

This Corporate Energy Management Plan is intended to meet the submission requirements for the Green Energy Act, 2009 (Ontario Regulation 397/11). The Energy Management Plan (EMP) provides a five year roadmap for energy management in the Township of Guelph/Eramosa. It focuses on the use of electricity and natural gas in Township facilities. The EMP also addresses the workplace culture as it relates to energy conservation.

The plan details the Townships plans to reduce energy and GHG emissions across corporate operations including:

1. Buildings
2. Wastewater Facilities
3. Streetlighting
4. Sportsfield Lighting
5. Workforce culture as it relates to energy conservation

The Township of Guelph/Eramosa is committed to follow the direction of this Action Plan, and will take the necessary steps to ensure its implementation and success.

2. About the Township of Guelph/Eramosa

The Township of Guelph/Eramosa is located at the south end of Wellington County, surrounding the City of Guelph and is a rural and small urban municipality with a population of 12,380. We are rich with stunning landscapes, protected natural areas and a growing network of recreational trails and features which create a unique balance for those who live and work in the Township.

3. Commitment

Declaration of Commitment: Guelph Eramosa Township will allocate the necessary resources to develop and implement a strategic energy management plan that will reduce our energy consumption and its related environmental impact.

Vision: The Township of Guelph/Eramosa will exercise stewardship in its use of energy resources to demonstrate leadership, optimize delivery of municipal services and enhance the overall quality of life in the communities that form Guelph/Eramosa Township.

Policy: The Township of Guelph/Eramosa will incorporate energy efficiency into all areas of our activity including our organizational and human resources management procedures, procurement practices, financial management and investment decisions, and facility operations and maintenance.

Goals: The Township will continually strive to improve energy efficiency in our facilities and operating procedures that will result in reduction of our operating costs, our energy consumption and reduced production of greenhouse gas emissions.

Objectives: The primary objective of the Energy Management Plan is to meet the requirements of Ontario Regulation 397/11 under the green energy act (2009), and to improve the energy management and performance of the Township of Guelph/Ermaosa

4. Proposed Target

The Township of Guelph/Eramosa plans to pursue a reduction target of 5% below 2011 baseline levels by 2019. This includes our consumption of fuels and electricity in all municipal operations.

5. Corporate Operations Profile

The Township of Guelph/Eramosa owns and operates 24 facilities and approximately 609 Street lights. These facilities include our administrative office, fire hall, community centres, operation garages and water and waste water facilities.

6. Renewable Energy

The Township of Guelph/Eramosa aspires to show leadership in the promotion and development of renewable energy systems that are compatible with our asset management and land use planning objectives. As a result, we will investigate the potential to develop solar photovoltaic systems on the rooftops of suitable corporate facilities with sound, south-facing roofs.

7. Energy Leaders:

Guelph/Eramosa Township will clearly designate leadership and overall responsibility for corporate energy management. All directors and the CAO will sign off on the EMP to demonstrate commitment to implementing the plan.

Robin Milne, Director of Parks and Recreation will be the “Energy Leader” for Parks, Facilities, Cemeteries and Recreation

The Director of Public Works will be the “Energy Leader” for facilities and operations relating to Public Works, Water and Waste/Water

8. Energy Plan Review

We will review and evaluate our energy plan, revising and updating it as necessary on an annual basis within our corporate planning process. As part of the annual review Department heads will

- Track the activities that have been implemented in their respective departments
- Note any updates to the EMP, based on new audits, organizational or resource changes
- Identify the priority actions for the upcoming year, and secure funding and resources for their implementation

9. Overview of Past and Ongoing Energy Reduction Initiatives

The Township of Guelph/Eramosa has been active in reducing energy consumption throughout its operations, particularly within facilities. Figure 1. presents an overview of completed energy reduction initiatives over the past five years. Understanding what measures the Township has already taken to reduce energy and GHGs across corporate operations is essential to plotting the future direction for the Township.

Figure 1. Overview of Past and Ongoing Energy Reduction Initiatives

Facility Name	Project Description	Year of Project
Administration Centre	Replaced wall switches with occupancy sensors	1999
	Construction of Vestibules at entrances	2013
	Lighting retro-fit, T-12 to T-8, incandescent to compact fluorescents.	1999
	Zoned and programmable HVAC	2007
Rockmosa Community Centre	Introduced wall glazing to increase the benefit of natural light into the building.	2013
	Installed on/off wall switches on walk in-cooler and bar fridge	2012
	Lighting retro-fit t-12 to t-8's	1999
	Increased flat roof r-value from r-5 to r-30	2011
	Exit lighting retro-fit to LED	
	Replaced wall switches with occupancy sensors in the bathrooms	2010
	Replaced water heater with a high efficiency water heater	2012
	Replaced roof top HVAC unit with a 98% efficient roof top unit	2010
	Installed programmable thermostats	2007
	Marden Community Centre	Re-insulated the north exterior wall with r-30 spray foam
Lighting retro-fit		2008
Exit lighting retro-fit		2007
Installed programmable thermostat		2007
Installed on/off wall switches on bar fridge		2011
Retrofit parking lot lighting from Metal Halide to LED		2012
Rockwood Fire Hall	Bi-Yearly servicing of HVAC systems	Yearly
	Installed programmable thermostat	2012
	Replaced wall switches with occupancy switches	2012
Rockwood (former) Town Hall	Increased ceiling insulation in entire building to r50	2013
	Lighting retrofit from 500w incandescence to high out T-5	2010
	HVAC replacement to 98% efficient heating	2012
	Exterior door replacement with thermo insulated doors	2012

Figure 1 (Cont'd). Overview of Past and Ongoing Energy Reduction Initiatives

Rockwood Public Library	Lighting retro-fit	2011
Royal Distributing Athletic Performance Centre	<p>New construction of the RDAPC included a number of energy conservation measures during the initial design including:</p> <ul style="list-style-type: none"> • Use of high output T-5 lighting in super structure • Use of T-8, compact fluorescents and LED lighting in remaining of facility • Occupancy sensors in all staff areas • Full cut off dark sky compliant exterior lighting • Use of floor to ceiling glazing in super structure to introduce natural light into the building • r21 sealed cooler panel wall insulation • zero roof penetration with r30 insulation • entrance vestibules • low flow, auto shut-off water fixtures • 98% efficient NG heating • Zoned HVAC system • Zoned lighting system 	2009

10. Summary of energy and GHG reduction initiatives to be pursued by the Township

The Township has identified a number of energy and GHG reduction initiatives to implement across corporate operations to contribute to the Townships reduction target. Each action item is classified as a short, medium or long-term strategy, all action items will be carried out at the discretion of council through the Townships annual budget process. Figure 2. Presents the Townships action plan for 2014 through to 2019.

Figure 2.

No.	Action Item	Short Term Timeline 1-5 years	Medium Term Timeline 5-10 years	Long Term Timelines 10+ years
1	Add energy awareness to department head meetings to provide a platform to discuss topics like the current cost of energy consumption, the future implications of current usage, areas for improvement and ways to reduce consumption.	✓		
2	Complete full and thorough energy audits for the top 4 energy consuming municipal facilities	✓		
3	Investigate LED street lighting program	✓		
4	Develop a plan for communicating energy Reduction initiatives with staff and the community	✓		
5	Develop a process for updating the EMP annually and after the 5 year period to ensure compliance With the Green Energy Act reporting requirements	✓		
6	Monitoring and tracking: continue to track and monitor energy consumption through the LAS EPT program and report on progress towards our 5 year target	✓		
7	Enhance the existing procurement policy and integrate environmental purchasing considerations into the policy	✓		
8	Continue to foster an excellent relationship with LAS and continually monitor and apply for incentives and grants related to energy conservation	✓		
10	Continue lighting retrofits in municipal facilities as budget permits	✓		
11	Create annual workplans for each department related to EMP and Directors of each department are held accountable for implementing the workplans. It should be a consideration to have this presented to council during budget deliberations.	✓		
12	Carry out existing cost effective energy efficiency LAS 2013 Audit report recommendations	✓		
13	Complete full and thorough energy audits of all remaining municipal facilities		✓	
14	The automation of buildings ("smart" buildings) has grown rapidly in previous years and is expected to become standard for facilities in the future. Energy efficiency measures are easily implemented within building automation systems.		✓	
15	Investigate and implement all cost effective energy efficiency projects identified in energy audits of municipal facilities			✓

Energy Consumption and GHG Emissions

From: 2011-01-01 To: 2011-12-31

Facility Name	Address	Total Area (m2)	Fuel Types	Consumption	Energy (ekWh/yr)	GHG Emissions (kg CO2e/yr)
Facility Primary Type: Library						
Rockwood Public Library	85 Christie Street	478	NG	8231.00 m3	87,477.23	15,561.75
			Elect.	48000.00 kWh	48,000.00	4,609.92
Facility Type Total					135,477.23	20,171.67

Facility Primary Type: Emergency Medical Services						
Rockwood Fire Hall	5141 Wellington Road 27	37	NG	674.00 m3	7,163.12	1,274.28
			Elect.	3019.00 kWh	3,019.00	289.94
Facility Type Total					10,182.12	1,564.23

Facility Primary Type: Fire						
Rockwood Fire Hall	5141 Wellington Road 27	938	NG	17071.00 m3	181,426.78	32,274.89
			Elect.	76428.00 kWh	76,428.00	7,340.15
Facility Type Total					257,854.78	39,615.04

Facility Name	Address	Total Area (m2)	Fuel Types	Consumption	Energy (ekWh/yr)	GHG Emissions (kg CO2e/yr)
Facility Primary Type: Community Centre						
Royal Distributing Athletic Performance Centre	7384 Wellington Road 30	5202	NG	57575.00 m3	611,894.26	108,852.85
			Elect.	267862.00 kWh	267,862.00	25,725.47
Marden Community Centre	7368 Wellington Road 30	408	NG	10282.00 m3	109,274.80	19,439.43
			Elect.	27588.00 kWh	27,588.00	2,649.55
Rockmosa	74 Christie Street	591	NG	19385.00 m3	206,019.46	36,649.80
			Elect.	65520.00 kWh	65,520.00	6,292.54
Facility Type Total					1,288,158.52	199,609.64

Facility Name	Address	Total Area (m2)	Fuel Types	Consumption	Energy (ekWh/yr)	GHG Emissions (kg CO2e/yr)
Facility Primary Type: Public Works						
Public Works Shed - Marden	7368 Wellington Road 30	464	NG	11684.00 m3	124,174.95	22,090.09
			Elect.	63505.00 kWh	63,505.00	6,099.02
Station Street Water PS	114 Station Street	53	Elect.	217709.00 kWh	217,709.00	20,908.77
Bernardi Water PS	51 Parkinson Drive	47	Elect.	123099.00 kWh	123,099.00	11,822.43
Huntington PS	5486 Wellington Road 38	61	Elect.	42824.00 kWh	42,824.00	4,112.82
Cross Creek PS	86 Cross Creek Boulevard	44	Elect.	36265.00 kWh	36,265.00	3,482.89
Rockwood Booster Station	96 Hampson Crescent	137	Elect.	87007.00 kWh	87,007.00	8,356.15
Brucedale Public Works Shed	8348 Wellington Road 124	602	NG	18061.00 m3	191,948.28	34,146.61
			Elect.	61675.00 kWh	61,675.00	5,923.27
Alma Stn (Hwy 7)	330 Highway 7 East	91	Elect.	18354.00 kWh	18,354.00	1,762.72
Valley Road Pump	197 Valley Road	18	Elect.	87768.00 kWh	87,768.00	8,429.24
Maclennan Sewage PS	136 Maclennan Street	28	Elect.	21306.00 kWh	21,306.00	2,046.23
Lou's Boulevard Pump	157 Lou's Boulevard	10	Elect.	10442.00 kWh	10,442.00	1,002.85
Mill Sewage (Ridge Road)	110 Ridge Road	19	Elect.	12249.00 kWh	12,249.00	1,176.39
Facility Type Total					1,098,326.23	131,359.48

Facility Name	Address	Total Area (m2)	Fuel Types	Consumption	Energy (ekWh/yr)	GHG Emissions (kg CO2e/yr)
Facility Primary Type: Town Hall						
Municipal Office	8348 Wellington Road 124	371	NG	4446.00 m3	47,251.10	8,405.73
			Elect.	38042.00 kWh	38,042.00	3,653.55
Facility Type Total					85,293.10	12,059.28

Facility Primary Type: Storage Facility						
Lloyd Dyer Garage	175 Balaclava Street	129	Elect.	1642.00 kWh	1,642.00	157.70
Marden Park Shop	7376 Wellington Road 30	297	NG	4165.00 m3	44,264.69	7,874.46
			Elect.	6906.00 kWh	6,906.00	663.25
Facility Type Total					52,812.69	8,695.41

Grand Total

2,928,104.67 413,074.75