



Energy Management Plan

Township of Black River-Matheson

From: 2014-01-01 to: 2018-12-31

Commitment

- **Declaration of Commitment:** Council Resolution: It is the commitment of Council for the Township of Black River-Matheson to allocate resources to develop and implement projects that are cost effective and environmentally responsible.
- **Vision:** The Township of Black River-Matheson will continue to reduce energy consumption and mitigate costs through the wise use of energy. This will involve a collaborative effort from department heads to increase education, awareness and understanding of energy management within the corporation. Council and senior administration will demonstrate leadership and commitment to fulfillment the goals of the energy plan.
- **Goals:** To provide quality programs and services that are cost effective, environmentally responsible and innovative.
- **Overall Target:** The Township of Black River-Matheson, in our best efforts, will attempt to reduce the consumption of electricity in all municipal operations by an average of 2% per year.
- **Objectives:** 1. To create a culture of conservation within the township. 2. Demonstrate sound operating and maintenance practices to enhance implemented energy efficiencies 3. To implement energy audits at specific municipal facilities during the next five years 4. Explore new ideas and trends related to energy management.

Organizational Understanding

- **Summary of Current Energy Consumption, Cost and GHGs:** The total annual energy consumption in municipal operation is 3,328,592.41 eMWh, at a cost of \$ 258,520.98 per year and GHG emission of 433,425.00 tonnes/year eCo2
- **Renewable Energy Utilized or Planned:** The municipality of Black River-Matheson aspires to show leadership in the promotion of renewable energy systems that are compatible with our asset management plan. We will investigate energy efficient systems to incorporate in the rehabilitation and replacement of our facilities.

Resources Planning

- **Energy Leader:** We will demonstrate leadership and overall responsibility for corporate energy management.
- **Energy Team:** We will appoint employees to act as departmental energy efficiency team members.
- **Key Individuals:** We will identify departmental staff members who will carry out significant responsibility for energy performances or who can make essential input to energy management processes.

Procurement Planning

- **Consideration of energy efficiency of acquired equipment:** We will aspire to modify our purchasing procedures to incorporate energy efficiency into the criteria for selection of materials and equipment.

Projects Execution

- **Municipal Level:** We will carry out the required development of procedures and programs and implement them within the resources constraints that apply.
- **Asset Level:** We will use department energy team representatives to facilitate the implementation of facility level procedures and communication initiatives, including energy performance reporting.



Review

- **Energy Plan Review:** We will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis within our planning process.

Evaluation Progress

- **Energy Consumption:** Our energy consumption in 2012 increased to 7,605.00 GJ from our 2011 levels of 7,185.00 GJ.



Energy Consumption and GHG Emissions

From: 2014-01-01 to: 2018-12-31

Facility Name	Address	Total Area (m2)	Hours/Day	Fuel Types	Consumption	Emission Factor	Energy (ekWh/yr)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/m2)	Energy Intensity
Facility Primary Type: Library										
Matheson Public Library	352 2nd	180		NG	2720 m3	1.890627	28907.55	5142.51	28.57	160.60 (ekWh/m2)
				Elect.	4400 kWh	0.098040	4400.00	431.38	2.40	24.44 (ekWh/m2)
Facility Type Total							33307.55	5573.88	30.97	185.04
Facility Primary Type: Museum										
Museum	374 Hough	365		NG	4559 m3	1.890627	48452.04	8619.37	23.61	132.75 (ekWh/m2)
				Elect.	1769 kWh	0.098040	1769.00	173.43	0.48	4.85 (ekWh/m2)
Facility Type Total							50221.04	8792.80	24.09	137.59
Facility Primary Type: Fire										
Val Gagne Fire Hall	6 Con Lot 9	96		NG	3640 m3	1.890627	38685.11	6881.88	71.69	402.97 (ekWh/m2)
				Elect.	2191 kWh	0.098040	2191.00	214.81	2.24	22.82 (ekWh/m2)
Fire Storage Building	1115 Vimy Ridge Rd	1600		NG	2422 m3	1.890627	25740.48	4579.10	2.86	16.09 (ekWh/m2)
				Elect.	4911 kWh	0.098040	4911.00	481.47	0.30	3.07 (ekWh/m2)
Matheson Fire Hall	422 6th Ave	551		NG	8723 m3	1.890627	92706.10	16491.94	29.93	168.25 (ekWh/m2)
				Elect.	4120 kWh	0.098040	4120.00	403.92	0.73	7.48 (ekWh/m2)
Holtyre Fire Hall	1 Con Lot 310	116		Elect.	6000 kWh	0.098040	6000.00	588.24	5.07	51.72 (ekWh/m2)
Ramore Fire Hall	375 Ferguson	251		NG	7565 m3	1.890627	80399.13	14302.59	56.98	320.32 (ekWh/m2)
				Elect.	3640 kWh	0.098040	3640.00	356.87	1.42	14.50 (ekWh/m2)
Facility Type Total							258392.82	44300.82	171.23	1007.22



Facility Name	Address	Total Area (m2)	Hours/Day	Fuel Types	Consumption	Emission Factor	Energy (ekWh/yr)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/m2)	Energy Intensity
Facility Primary Type: Recreation Complex										
Vern Miller Memorial Community Center	1 Arena Ave	2164		NG	17862 m3	1.890627	189833.35	33770.38	15.61	87.72 (ekWh/m2)
				Elect.	92800 kWh	0.098040	92800.00	9098.11	4.20	42.88 (ekWh/m2)
Facility Type Total							282633.35	42868.49	19.81	130.61
Facility Primary Type: Public Works										
Public Works Garage	1115 Vimy Ridge Rd	418		NG	27553 m3	1.890627	292827.14	52092.45	124.62	700.54 (ekWh/m2)
				Elect.	41373 kWh	0.098040	41373.00	4056.21	9.70	98.98 (ekWh/m2)
Facility Type Total							334200.14	56148.65	134.33	799.52
Facility Primary Type: Other										
Val Gagne Rink	573 Lessard St	70		NG	1253 m3	1.890627	13316.60	2368.96	33.84	190.24 (ekWh/m2)
				Elect.	5242 kWh	0.098040	5242.00	513.93	7.34	74.89 (ekWh/m2)
Water	5 Con Lot 5	40		Elect.	3379 kWh	0.098040	3379.00	331.28	8.28	84.47 (ekWh/m2)
Ramore Rink	5 Con Lot 5	76		NG	1483 m3	1.890627	15760.99	2803.80	36.89	207.38 (ekWh/m2)
				Elect.	353 kWh	0.098040	353.00	34.61	0.46	4.64 (ekWh/m2)
Holtyre Rink	2 Con Lot 1	48		NG	1706 m3	1.890627	18130.99	3225.41	67.20	377.73 (ekWh/m2)
				Elect.	239 kWh	0.098040	239.00	23.43	0.49	4.98 (ekWh/m2)
Holtyre Water	2 Con Lot 1	20		Elect.	17294 kWh	0.098040	17294.00	1695.50	84.78	864.70 (ekWh/m2)
Holtyre Sewage Lift Station	2 Con Lot 1	10		Elect.	2185 kWh	0.098040	2185.00	214.22	21.42	218.50 (ekWh/m2)
Water	6 Con Lot 9	90		Elect.	40669 kWh	0.098040	40669.00	3987.19	44.30	451.88 (ekWh/m2)



Facility Name	Address	Total Area (m2)	Hours/Day	Fuel Types	Consumption	Emission Factor	Energy (ekWh/yr)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/m2)	Energy Intensity
Sewage Plant	6 Con Lot 8	20								
Sewage Plant	5 Con Lot 4 Ennis St	30		Elect.	20352 kWh	0.098040	20352.00	1995.31	66.51	678.40 (ekWh/m2)
Water	5 con Lot 4	25		Elect.	29305 kWh	0.098040	29305.00	2873.06	114.92	1172.20 (ekWh/m2)
Sewage Plant	54 Quinn Cr	85		Elect.	77793 kWh	0.098040	77793.00	7626.83	89.73	915.21 (ekWh/m2)
Facility Type Total							244019.59	27693.52	576.16	5245.22
Facility Primary Type: Tower										
Communication Tower	6 Con Lot 4	10		Elect.	5611 kWh	0.098040	5611.00	550.10	55.01	561.10 (ekWh/m2)
Facility Type Total							5611.00	550.10	55.01	561.10
Facility Primary Type: Town Hall										
Municipal Office	429 Park Lane	378		NG	4921 m3	1.890627	52299.29	9303.78	24.61	138.36 (ekWh/m2)
				Elect.	11982 kWh	0.098040	11982.00	1174.72	3.11	31.70 (ekWh/m2)
Facility Type Total							64281.29	10478.49	27.72	170.06
Grand Total:							1272666.77	196406.76	1039.31	8236.36

Programs

Description	Facility	Contact	Date	Status
Energy Audit-Arena	Vern Miller Memorial Community Center	Calvin Goerk	2014-03-26	Pending
Details	The arena is one of our highest consuming energy operations. The audit will expose energy conservation opportunities we can capitalize on and implement in our energy plan.			
Energy Audit-Garage	Public Works Garage	Calvin Goerk	2014-03-26	Pending
Details	The public works garage is another one of our highest consuming energy operations. The audit will expose energy conservation opportunities we can capitalize on and implement in our energy plan.			



Description	Facility	Contact	Date	Status
Committee Meeting	Municipal Office	Heather Smith	2014-03-26	Pending
Details	Lines of communication will be open amongst committee members throughout the year, however, the committee will meet on an annual basis. During this time the members can brief the committee on barriers and opportunities that have been identified under their department.			

Processes

Description	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Powers Bars			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Power bars will be used on all pc's in the municipal office, museum and library.								
Turn off printers			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	All printers at the municipal office, library and museum will be turned off at night and on weekends.								
Curtains and blinds			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	All municipal buildings (Municipal, Library, Museum) with curtains and blinds will be closed at night and during warm weather to consume heat and/or coolness.								
Building maintenance		Calvin Goerk	2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Enhance our building maintenance by caulking, weather stripping, insulating to consume heat in the winter and remove to keep cool in the summer. (Municipal, Museum, Library, Arena)								
Plants			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Decorate the offices (Municipal, Museum and Library) with plants in order to improve the air quality.								

Projects

Description	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Motion sensors			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Install motion sensors for lights and heating in all suitable buildings. By installing these sensors it would allow for more control over the use of lights and temperature settings.								
Water-efficient fixtures			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Install water-efficient fixtures in bathrooms where deem necessary.								



Description	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Energy saving lights			2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Install energy saving lights in all municipal buildings that are deemed necessary.								
Electrical Panel	Matheson Public Library		2014-04-01	2014-04-01	Pending [0%]	0.00	0	0.00	0
Details	Having lights re-wired so that lights can be turned on individually instead of the odd grouping of existing lights and switches.								