

***Huron County Conservation and  
Demand Management Plan  
2014-2018***



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# COMMITMENT



## DECLARATION OF COMMITMENT

The Corporation of the County of Huron will develop and implement a Conservation and Demand Management plan that will reduce the energy consumption and its related environmental impact, wherever it is cost effective to do so.

## VISION

The County will strive to reduce the total energy consumption and mitigate costs through the wise use of energy. This will involve a collaborative effort involving all County Departments to increase the education, awareness and understanding of energy management within the County.

## GOALS

To continuously improve the energy efficiency of the County's buildings and energy management processes in order to reduce the associated operational costs, energy consumption and greenhouse gas emissions. To implement energy audits on all municipal buildings within the next five years. To set an energy conservation target that will see the County reduce its energy consumption by a pre-determined amount over five years. To raise awareness of the importance of energy management and to designate energy management within a staff member's position.



## COMMITMENT



## OVERALL TARGET

The County will strive to reduce the energy consumption within the municipality owned and managed buildings by an average of 0.5% per year between January 1, 2014 and December 31, 2018 (a five year term). The recommendation is that 2013 be used as the first year for measuring the first year results, and each year thereafter will be based on a 0.5% decrease on the previous year's energy consumption. This will provide a decrease of 2.5% over five years.

## OBJECTIVES

The creation of a culture of conservation within the County will serve to reduce greenhouse gas emissions and ensure the wise use of resources. The integration of operational processes, facility based infrastructure improvements and staff awareness is required to move the County towards the goal of reducing energy consumption.





# ORGANIZATIONAL UNDERSTANDING



## STAKEHOLDER NEEDS

Internal stakeholders (Council, senior management, staff) require:

- a) An up-to-date and relevant energy conservation and demand management plan with clear vision, goals, targets and objectives in order to clearly communicate the corporate commitment to energy efficiency
- b) Timely, regular reports and information to maintain awareness of energy use. External stakeholders (the Province, communities, citizens and groups) require the municipality to be accountable for energy performance and to work towards reducing the energy component of the costs of municipal services.

## HOW WE MANAGE ENERGY TODAY

The management of energy consumption and the energy performance of County buildings and equipment are the responsibilities within their respective Departments. The Departments responsible for maintaining their respective buildings include Social and Property Services, Homes for the Aged and Highways.



# ORGANIZATIONAL UNDERSTANDING



## SUMMARY OF CURRENT ENERGY CONSUMPTION, COST AND GHGS

Total annual consumption in municipal operations for 2013:

Electricity consumption of 4,149,846 kWh at a cost of \$624,987.00

Natural Gas consumption of 764,119 m<sup>3</sup> at a cost of \$193,946.00

Propane consumption of 31,384 Litres at a cost of \$17,458.00

The combined greenhouse gas emission (GHG) totaled 1,809 tonnes/year.

## RENEWABLE ENERGY UTILIZED OR PLANNED

Although energy conservation and improving energy efficiency will be the main focus of the energy Conservation and Demand Management plan, the exploration of renewable energy systems is possible.



## RESOURCES PLANNING



### ENERGY LEADER

The County will work towards designating an energy leader. The multiple departments within the County suggest that a team approach will be required. It is necessary to be cognizant of budget restrictions and staff availability for implementing possible energy conservation features, and a coordinated approach to determining the energy leader may be required.



# IMPLEMENTATION PLANNING



## COMMUNICATION PROGRAMS

The County will work towards developing a communications strategy that creates and sustains awareness of energy efficiency and conservation as a corporate endeavour. This strategy will be shared amongst all employees and will convey the County's commitment towards energy conservation, where feasible.





# PROJECT EXECUTION



## MUNICIPAL LEVEL

The administration and implementation of the County's Conservation and Demand Management Plan will require a designated person to assist in developing and sustaining a corporate culture of conservation. This responsibility may be determined in 2014.

## ASSET LEVEL

There are three County Departments responsible for maintaining the physical assets of their respective areas. All Departments have representatives on the County's corporate Asset Management Committee. Energy management programs have been identified within the County's Conservation and Demand Management Plan, including such ideas as energy audits and review of the buildings' mechanical and control systems. This works towards ensuring that all operating practices are current and appropriate to maximize building system efficiencies.



# REVIEW



## ENERGY PLAN REVIEW

The Conservation and Demand Management Plan will be reviewed and updated in accordance with Ontario Regulation 397/11.



# EVALUATION PROGRESS



## ENERGY CONSUMPTION

The implementation of the Conservation and Demand Management Plan will begin in 2014.

Total annual consumption in municipal operations for **2012**:

Electricity consumption of 4,074,592 kWh at a cost of \$540,577.00

Natural Gas consumption of 646,571 m<sup>3</sup> at a cost of \$189,448.00

Propane consumption of 30,321 Litres at a cost of \$14,493.00

The combined greenhouse gas emission (GHG) totaled 1,669 tonnes/year.

Total annual consumption in municipal operations for **2013**:

Electricity consumption of 4,149,846 kWh at a cost of \$624,987.00

Natural Gas consumption of 764,119 m<sup>3</sup> at a cost of \$193,946.00

Propane consumption of 31,384 Litres at a cost of \$17,458.00

The combined greenhouse gas emission (GHG) totaled 1,809 tonnes/year.

Each subsequent year of energy usage will be posted to the County's website. This will for the evaluation of the energy to be monitored.



# PROGRAMS

## 1) Program Descriptions

Programs	Description
Energy Awareness	Provide energy savings ideas and tips to staff for energy conservation within the work place. This would be inclusive of all staff in all buildings.
Staff Awareness	To prepare and include a notice to employees regarding energy conservation measures around the patrol yard. This would include turning down the heat, shutting off lights when leaving the area, etc... This would be applicable to all of the County yards, including Wingham, Zurich and Wroxeter.
Usage Profiling	Make use of visual displays to demonstrate the implications of current behaviours. This would include month over month comparisons of energy consumption within the same area. All County buildings could be included in this endeavour.
Case Studies	To prepare and distribute case studies of successful energy initiatives within our organization.
Dedicated Contact	To consider the potential of a summer student to investigate, initiate and develop conservation measures within the County buildings. The student would develop metrics to measure savings, develop programming to work towards a decrease in energy consumption, etc..

## 2) Program Details

Programs	Facility	Contact	Date	Status
Energy Awareness	Municipal Buildings	N/A	10/1/2014	N/A
Staff Awareness	Auburn County Yard	Donald Hastings	9/2/2014	N/A
Usage Profiling	Municipal Buildings	N/A	10/1/2014	N/A
Case Studies	Municipal Buildings	N/A	11/1/2014	N/A
Dedicated Contact	Municipal Buildings	N/A	5/1/2015	N/A



# PROCESSES

## 1) Process Descriptions

Processes	Description
Energy Reporting	Energy reports to be distributed for monitoring purposes.
Preventative Maintenance Software	Implement preventative maintenance software to assist with the maintenance and life cycles of the municipal properties.
Housing Corporation	A new range of processes and programs have been developed to capture the County's Housing Corporation buildings. Tenant engagement is a key component to the energy reduction and the processes will be geared towards encouraging the tenants to participate in energy conservation.

## 2) Process Details

Processes	Facility	Contact	Start	End	Status	Cost	Save (ekWh / yr)	Save (\$)	ROI
Energy Reporting	N/A	N/A	1/1/2015	12/31/2017	Pending [5%]	0	0	0	10
Preventative Maintenance Software	N/A	Darryl McCann	11/1/2014	12/31/2017	Pending [10%]	0	0	0	5
Housing Corporation	N/A	Jayme Sutherland	9/1/2014	9/30/2017	Active [20%]	0	0	0	5





# PROJECTS

## 1) Project Descriptions

Projects	Description
Install Motion Sensors	Install motion sensors in Prisoners Area as lights are on continuously. Replace 8 lights and install occupancy sensors.
Install Timer	Install timer on exhaust fan #1 as fan runs continuously. A timer will be installed on the basement exhaust fan.
Install Timer	Install timer on exhaust fan #2 as fan runs continuously. A timer will be installed on the exhaust fan.
Install Timer	Install timer on exhaust fan #1 as fan runs continuously. A timer will be installed on the south penthouse exhaust fan.
Install Timer	Install timer on exhaust fan #2 as fan runs continuously. A timer will be installed on the north penthouse exhaust fan.
Install Timer	Install timer on exhaust fan #3 as fan runs continuously. A timer will be installed on the east lower roof exhaust fan.
Install Timer	Install timer on exhaust fan #4 as fan runs continuously. A timer will be installed on the west lower roof exhaust fan.
Replace Incandescent Bulbs with LED Bulbs	Replace incandescent bulbs in all Courthouse clocks with LED bulbs.
Replace Electric Heat Coil with Hot Water Coil	Replace existing electric coil in duct heater with a hot water coil.
Replace incandescent light fixtures with LED wall packs	Replace 5 incandescent yard light fixtures with 5 LED wall packs.
Replace Light Switch with Motion Sensor	Replace light switches with motion sensors in three washrooms.
Replace Exhaust Fan Switch with Motion Sensor	Replace exhaust fan switch with motion sensor in three washrooms.
Replace T8 Bulbs with LED Bulbs	Replace existing T8 bulbs with LED bulbs in all offices.
Replace Incandescent Bulbs with Low Wattage Bulbs	Replace 60 watt incandescent bulbs with 14 watt energy-saver bulbs in dining area.
Replace Light Switch with Motion Sensor	Replace light switches with motion sensors in four washrooms.
Replace Exhaust Fan Switch with Motion Sensor	Replace exhaust fan switch with motion sensor in four washrooms.
Replace T8 Bulbs with LED Bulbs	Replace existing T8 bulbs with LED bulbs in all offices.
Replace Incandescent Bulbs with Low Wattage Bulbs	Replace 60 watt incandescent bulbs with 14 watt energy-saver bulbs in dining area.



Projects	Description
Replace Incandescent Bulbs with Low Wattage Bulbs	Replace 60 watt incandescent bulbs with 14 watt energy-saver bulbs in t.v. lounge area.
Replace Incandescent Bulbs with Low Wattage Bulbs	Replace 60 watt incandescent bulbs with 14 watt energy-saver bulbs in t.v. lounge area.
Replace Humidifiers	Replace existing HVAC humidifiers which run continuously for 6 months.



## 2) Project Details

Projects	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Install Motion Sensors	Court House	Jeff Kerslake	7/1/2014	7/30/2014	Pending [0%]	2500	5781	578	4
Install Timer	Health and Library Complex	Jeff Kerslake	7/1/2014	7/30/2014	Pending [0%]	275	4047	404	0
Install Timer	Health and Library Complex	Jeff Kerslake	7/1/2014	7/30/2014	Pending [0%]	275	3597	359	0
Install Timer	Court House	Darryl McCann	8/1/2014	8/29/2014	Pending [0%]	275	3597	359	0
Install Timer	Court House	Darryl McCann	8/1/2014	8/29/2014	Pending [0%]	275	3497	349	0
Install Timer	Court House	Darryl McCann	8/1/2014	8/29/2014	Pending [0%]	275	2938	294	0
Install Timer	Court House	Darryl McCann	8/1/2014	8/29/2014	Pending [0%]	275	2938	294	0
Replace Incandescent Bulbs with LED Bulbs	Court House	Jeff Kerslake	4/1/2014	4/30/2014	Pending [0%]	625	2102	210	2
Replace Electric Heat Coil with Hot Water Coil	Museum	Carl Hoonaard	10/1/2014	1/1/2015	Pending [0%]	3627	19110	1911	1
Replace incandescent light fixtures with LED wall packs	Auburn County Yard	Donald Hastings	3/31/2014	4/30/2014	Pending [0%]	2200	4336	433.62	5
Replace Light Switch with Motion Sensor	Huronlea Home for the Aged	Steve Wilkinson	7/1/2014	7/31/2014	Pending [0%]	240	1261	126	1
Replace Exhaust Fan Switch with Motion Sensor	Huronlea Home for the Aged	Steve Wilkinson	7/1/2014	7/31/2014	Pending [0%]	135	1793	179	0

Projects	Facility	Contact	Start	End	Status	Cost	Save (ekWh/yr)	Save (\$)	ROI
Replace T8 Bulbs with LED Bulbs	Huronlea Home for the Aged	Steve Wilkinson	6/2/2014	6/30/2015	Pending [0%]	2600	3504	350	7
Replace Incandescent Bulbs with Low Wattage Bulbs	Huronlea Home for the Aged	Steve Wilkinson	6/2/2014	6/16/2014	Pending [0%]	200	4029	403	0
Replace Light Switch with Motion Sensor	Huronview Home for the Aged	Steve Wilkinson	7/1/2014	7/30/2014	Pending [0%]	320	1682	168	1
Replace Exhaust Fan Switch with Motion Sensor	Huronview Home for the Aged	Steve Wilkinson	7/1/2014	7/30/2014	Pending [0%]	180	1537	154	1
Replace T8 Bulbs with LED Bulbs	Huronview Home for the Aged	Steve Wilkinson	6/2/2014	6/30/2014	Pending [0%]	5200	17520	1752	2
Replace Incandescent Bulbs with Low Wattage Bulbs	Huronview Home for the Aged	Steve Wilkinson	6/2/2014	6/16/2014	Pending [0%]	300	6044	604	0
Replace Incandescent Bulbs with Low Wattage Bulbs	Huronlea Home for the Aged	Steve Wilkinson	8/1/2014	8/15/2014	Pending [0%]	150	4533	453.33	0
Replace Incandescent Bulbs with Low Wattage Bulbs	Huronview Home for the Aged	Steve Wilkinson	8/1/2014	8/15/2014	Pending [0%]	250	7555	755	0
Replace Humidifiers	Huronlea Home for the Aged	Steve Wilkinson	10/1/2014	11/28/2014	Pending [0%]	65000	142710	14271	4

ENERGY CONSUMPTION AND GHG EMISSIONS FROM 2013-01-01 TO 2013-12-31

1) Offices

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Courthouse	1 Courthouse Square, Goderich	3,927	40	348,047	50,680.00	60,742	19,136.00	N/A	N/A	141,296.21	23.51
Assessment Office	57 Napier Street, Goderich	1,432	40	156,813	21,941.00	23,645	4,763.00	N/A	N/A	56,623.55	26.48
Registry Office	38 North Street, Goderich	312	40	38,191	5,331.00	7,187	2,359.00	N/A	N/A	16,490.91	34.12
Health & Library Complex	77722B London Road, RR 5, Clinton	4,051	40	316,008	50,667.00	51,943	16,412.00	N/A	N/A	122,225.24	19.91
Jacob Memorial Building	77722D London Road, RR 5, Clinton	2,354	40	316,008	50,667.00	65,280	19,036.00	N/A	N/A	147,440.53	39.85
Facility Totals	N/A	N/A	N/A	1,175,067	179,286.00	208,797	61,706.00	N/A	N/A	484,076.44	N/A

2) Museums

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Museum	110 North Street, Goderich	3,176	49	376,143	54,531.00	43,074	12,707.00	N/A	N/A	110,028.25	24.39
Huron County Historic Gaol	181 Victoria Street, Goderich	1,115	20	23,205	3,389.00	10,819	2,604.00	N/A	N/A	22,218.55	11.51
Facility Totals	N/A	N/A	N/A	399,348	57,920.00	53,893	15,311.00	N/A	N/A	132,246.80	N/A

3) Emergency Medical Services

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Goderich EMS	170 Cambria Street, Goderich	272	168	45,066	5,974.00	4,142	1,485.00	N/A	N/A	11,256.53	30.43
Exeter EMS	210 Thames Road West, Exeter	272	168	46,076	7,414.00	4,270	1,525.00	N/A	N/A	11,575.31	31.24
Tuckersmith EMS	79997 Kinburn Line, Clinton	282	168	47,354	7,595.00	5,723	1,931.00	N/A	N/A	14,419.53	35.64
Wingham EMS	62 North Street, Wingham	321	168	28,693	3,662.00	4,435	1,244.00	N/A	N/A	10,565.94	21.95
Facility Totals	N/A	N/A	N/A	167,189	24,645.00	18,570	6,185.00	N/A	N/A	47,817.31	N/A

4) Long-Term Care

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Huronview Home for the Aged	77722A London Road, RR 5, Clinton	7,535	168	1,259,084	183,609.00	269,450	54,702.00	N/A	N/A	605,134.94	50.83
Huronlea Home for the Aged	820 Turnberry Street, Brussels	5,188	168	748,753	111,954.00	179,797	48,356.00	N/A	N/A	396,843.28	47.63
Facility Totals	N/A	N/A	N/A	2,007,837	295,563.00	449,247	103,058.00	N/A	N/A	1,001,978.21	N/A



5) Public Works

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Auburn County Patrol Yard	83091 Donnybrook Line, Auburn	1,334	120	151,662	26,478.00	N/A	N/A	20,565	11,214.00	43,218.47	20.63
Wingham County Patrol Yard	86287 London Road, Wingham	452	120	40,540	6,858.00	11,276	2,668.00	N/A	N/A	24,400.24	32.96
Wroxeter County Patrol Yard	43166 Harriston Road, Wroxeter	970	120	82,470	13,359.00	N/A	N/A	10,819	6,244.00	22,940.62	15.18
Zurich County Patrol Yard	72881 Blind Line, Zurich	353	120	76,037	11,707.00	22,336	5,018.00	N/A	N/A	48,008.77	82.49
Facility Totals	N/A	N/A	N/A	350,709	58,402.00	33,612	7,686.00	31,384	17,458.00	138,568.09	N/A

6) Other Facilities

Facility Name	Address	Total Area (m²)	Average Hours/Week	Electricity Quantity (kWh)	Electricity Cost (\$)	Natural Gas Quantity (m³)	Natural Gas Cost (\$)	Propane Quantity (L)	Propane Cost (\$)	GHG Emissions (kg)	Energy Intensity (ekWh/sqft)
Fire Pump House	77722F London Road, RR 5, Clinton	71	7	44,729	7,974.00	N/A	N/A	N/A	N/A	3,399.94	58.53
Airport Storage Facility	33889 Airport Road, RR 5, Clinton	650	7	4,967	1,197.00	N/A	N/A	N/A	N/A	377.55	0.71
Facility Totals	N/A	N/A	N/A	49,696.00	9,171.00	N/A	N/A	N/A	N/A	3,777.49	N/A