Town of LaSalle

Energy Management Plan

Updated May 13, 2014

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EXECUTIVE SUMMARY

The Town of LaSalle`s approach to energy management is four dimensional. It begins with:

1) The understanding and increased awareness of the energy we currently use and how that energy is used (staff behaviors that influence energy consumption)
2) Reducing and elimination of energy waste
3) Maximizing efficiencies
4) Optimizing energy supply

All actions should fall under one of three headings:

- Process (energy plan, energy procurement, hedging, budgeting)
- Programs (energy audits, energy awareness, LAS benchmarking)
- Projects (Vollmer lighting, LED streetlights, VFD installation, etc.)

The energy management plan incorporates the following areas of focus:

1) Energy Data Management – Evaluate all elements within an organization with regard to energy usage data. This includes evaluating monthly bills, establishing key performance indicators, load profiles, interval data, benchmarking and sub metering.
2) Energy Supply Management – Investigate exposure to the energy market and suppliers; monitor changes and account management with utility companies; look at choices regarding the supplier, green energy alternatives, reliability and risk management.
3) Energy Use in Facilities – Evaluate facilities through diagnostic/comprehensive audits, operating procedures, monitoring efficiency of equipment and systems
4) Equipment Efficiency – Reduce the consumption of energy without sacrificing the services provided. This includes preventative maintenance, fuel switching and the investigation of new systems and technologies
5) Organizational Integration – Include staff throughout the organization in the planning and implementation of the energy management plan. This involves spreading awareness regarding roles in various elements of the plan.

Selection process for energy actions:

1) Evaluation of energy baseline data and key point indicators
2) Alignment with vision, goals and objectives
3) Pursuit of SMART principles (Specific, Measureable, Accountable, Realistic, Time Bound).
4) Analysis of payback period for costly initiatives

INTRODUCTION

Consistent with the Town of LaSalle's Corporate Mission "The Town of LaSalle is committed to providing its residents, businesses and visitors with high quality programs and services in a proactive, open, environmentally and fiscally responsible manner", the Town has created this Energy Management Plan.

From both an environmental and a financial perspective it is mandatory that an energy management plan be put into place and energy savings initiatives be implemented. From an environmental perspective, implementing the goals and objectives established by the energy management plan will help reduce greenhouse gas emissions and maintain the Town's healthy and vibrant community. From a financial perspective, given past and forecasted trends, the cost of energy has increase significantly and is forecasted to increase (hydro by 50%) over the next five years. That being said, if the total cost of the Town's hydro is currently $1,100,000 (based on 2012 figures), the total cost of energy in five years will be $1,650,000, which in itself is a 2.4% tax rate increase. Hydro rates are not controllable, but a large portion of usage is controllable, which can mitigate the future increase in hydro costs.

Energy awareness has to become part of the corporate culture of the Town of LaSalle operationally in addition to capital purchases of energy efficient products used to run the Town.

This energy management plan covers the Town of LaSalle's Town Hall / Council Chambers, Environmental Services building, Police Department building, Fire Department building, Vollmer Recreation Center, and pump stations. In addition to these mandatory items, this energy management plan will also include streetlight analysis, as this is one of the highest energy usages in the Town of LaSalle.

This plan will also include the following mandatory information:

- Information on the Town's annual energy consumption during the last year for which complete information is available for a full year,
- The Town's goals and objectives for and objectives for conserving and otherwise reducing energy consumption and managing its demand for energy,
- The Town's proposed measures under its energy conservation and demand management plan,
- Cost and saving estimates for any proposed measures,
- A description of any renewable energy generation facility operated by the Town and the amount of energy produced on an annual basis by the facility,

- A description of,
    - The ground source energy harnessed, if any, by ground source heat pump technology operated by the Town,
    - The solar energy harnessed, if any, by thermal air technology or thermal water technology operated by the Town, and
    - The proposed plan, if any, to operate heat pump technology, thermal air technology or thermal water technology in the future,
- The estimated length of time the public agency's energy conservation and demand management measures will be in place, and
- Confirmation that the energy conservation and demand management plan has been approved by the Town's senior management.

Declaration of Commitment

See Appendix B for a copy of the council resolution declaring Council's support for the Energy Management Plan.

Vision

The vision of the Town of LaSalle`s Energy Management Plan is to reduce total energy consumption and greenhouse gas emissions through the efficient use of energy and resources, while maintaining a consistent level of service to the general public.

All Town employees will have a key role in accomplishing this vision. Through education and conservation awareness, Town staff will have a significant impact on the amount of energy consumption. In addition to staff awareness, various capital initiatives which have been identified in past energy audits or will be identified in future energy audits will also reduce the energy consumption rates as they are implemented.

GOALS

The Town of LaSalle's Energy Management Plan was developed to achieve the following goals:

1) To reduce the financial burden of increasing energy costs
2) To create a financial plan to fund various energy savings initiatives
3) To reduce the environmental impact of the Town's operations
4) To improve the reliability of Town equipment and reduce maintenance
5) To create a corporate culture of energy awareness

The main goal of this plan is to reduce the Town of LaSalle's energy consumption. By implementing all of the goals mentioned above, this will ultimately lead to less energy consumption by the Town of LaSalle. The Town of LaSalle is in the process of completing several new facilities including a new Town Hall, new Fire Station, new Police Station, and new Public Works Facility. Given that these facilities are new, the main focus over the next five years will be focused on the Vollmer recreation centre, which is the largest consumer of energy in the Town.

Various measurements of success will be discussed in detail throughout the plan to ensure that these goals are accomplished.

ENERGY REDUCTION TARGETS

The Town of LaSalle is in a unique situation as the oldest facility in the Town (excluding pump stations) is the Vollmer Culture and Recreation Centre. The Vollmer Recreation Center was completed in 2008 and is only six years old. The other Town buildings were either completed in 2013 (Fire Station, Police Station, Public Works Building), or scheduled to be completed in 2014 (Town Hall and Council Chambers). This being said, for this 5 year plan, the energy reduction targets that result from new capital purchases will relate to the Vollmer Recreation Centre and pump stations (larger reduction targets). The energy reduction targets that result from corporate staff awareness will relate to all Civic facilities including the Vollmer Recreation Centre (smaller reduction targets).

It is important to note that the actual energy usage measurements will have to take into account variable factors to normalize the energy consumption each year. These variable factors include weather conditions for all buildings that require heat and air conditioning each year and flow rates for pump stations each year. This will ensure appropriate comparisons year over year.

The following chart outlines energy targets for the various buildings and pump stations throughout the municipality:

Building	Target	Comparison Year
Vollmer Recreation Centre	5% decrease over 5 years	2012
Police Station	1% decrease over 4 years	2014
Fire Station	1% decrease over 4 years	2014
Public Works Building	1% decrease over 4 years	2014
New Town Hall	No goal as building not yet complete	N/A
Pump Stations	1% decrease over 5 years	2012

OBJECTIVES

In order to achieve the performance targets mentioned in the plan and ultimately accomplish the goals of the plan, there are several objectives that have to be accomplished.

The following are the strategic objectives:

1) Create a financial plan to fund the various energy savings initiatives
2) Have and energy audit performed at all Town buildings and pump stations
3) Each year, roll out at least one energy savings initiative identified in the Vollmer Recreation Center energy audit
4) Create an energy awareness program for Town staff
5) Create a pamphlet annually that explains energy savings initiatives implemented by the Town to educate the public.

Additional Objective not required by reg. 397/11:

- Investigate various options and roll out streetlight conversion to LED technology.

SUMMARY OF CURRENT ENERGY CONSUMPTION, COST AND GHGS

Regulation 397/11 requires that energy consumption be documented on the following Town facilities:

1. Administrative Offices and related facilities, including municipal council chambers
2. Public Libraries
3. Cultural Facilities, indoor recreation facilities and community centres, including art galleries, performing art facilities, auditoriums, indoor sports arenas, indoor ice rinks, indoor swimming pools, gyms and indoor courts for playing tennis, basketball or other sports
4. Ambulance stations and associated offices and facilities
5. Fire stations and associated offices or 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 or pumping of water or sewage
9. Parking garages

The following chart summarizes the 2012 energy cost and consumption data for Town facilities required to be included in the Town's energy consumption reporting:

Energy Source	Total Usage	Unit of Measurement	Total Cost per year	Total GHG emissions (Kg)
Hydro	5,805,355	kWh	$601,399.38	464,428
Natural Gas	288,984	m^3	$86,614.64	546,180
Total			$688,014.02	1,010,608

See appendix A for a detailed breakdown by Town facility.

In addition to Town facilities, the total streetlight energy consumption for 2013 is detailed in the following chart:

Energy Source	Total Usage	Unit of Measurement	Total Cost per year	Total GHG emissions (Kg)
Streetlight-Hydro	2,779,446	kWh	$389,937.32	222,356

RENEWABLE ENERGY

Renewable Energy Currently Utilized:

Currently there are 1,782 solar panels installed on the roof of the Vollmer Recreation Centre. The solar panels have a DC Power Capacity of 403 kW and an AC Power Capacity of 250 kW.

The following table summarizes the financial investment

Green Shares Purchased	$300,196.00
Annual Dividend Yield	$21,013.72
Annual Lease Revenue (Yr. 1 to 10)	$7,052.50
Annual Lease Revenue (Yr. 11 to 20)	$10,075.00

Renewable Energy Planned:

Currently there are no additional renewable energy projects planned in the near future. The Town is always looking for any investment opportunity that will result in an attractive return on investment.

ENERGY LEADER

The Town of LaSalle will clearly designate overall leadership and responsibility for corporate energy management. There are 2 leaders who have jointly created the energy management plan, these leaders are Scott Holland, Manager of Fleet & Facilities and Dale Langlois, Manager of Finance / Deputy Treasurer. The responsibilities of these energy management leaders are outlined below:

Scott Holland	• Responsible for the actual installation and implementation of capital related energy savings initiatives • Monitor energy Usage on an annual basis • Review energy audits from an operational perspective • Co-champion of the creation of the annual energy savings initiatives pamphlet for the public • Co-champion of the creation of a staff awareness program to roll out over the next 5 years • Co-champion of the creation of the energy management plan every five years
Dale Langlois	• Create a financial plan to fund the various energy savings initiatives • Report annually on the Town of LaSalle's energy usage per Reg. 397/11 • Monitor energy Usage on an annual basis • Review energy audits from a financial perspective and recommend the prioritization projects • Co-champion of the creation of the annual energy savings initiatives pamphlet for the public • Co-champion of the creation of a staff awareness program to roll out over the next 5 years • Co-champion of the creation of the energy management plan every five years

PROJECT EXECUTION

Project Execution at the Municipal Level:

The administration and implementation of this plan will be the responsibility of the Manager of Fleet and Facilities and the Deputy Treasurer / Manager of Finance. Since all Town staff use energy in our daily activities, it will be the responsibility of all staff to be aware of energy use and work towards a culture of conservation. Through staff awareness/training newsletters and energy use statistical updates, staff will be able to contribute to the energy savings initiatives and see the results of their efforts.

Project Execution at the Asset Level:

From an asset level perspective, the first step in identifying areas of potential energy savings is to have an energy audit performed on all Town facilities. Energy audits involve a walkthrough of each facility and identify various initiatives that can be implemented in order to save energy and correspondingly reduce costs. Each initiative identified in an audit provides a cost to implement the initiative, resulting savings in energy / cost and provides an estimated payback period to cover cost of implantation. Each initiative also identifies any potential savings from grants that are available at the time of the audit.

As at the date of this energy management plan, an energy audit has been performed on the Vollmer Recreation Centre (Refer to Appendix C for a copy of the Vollmer Recreation Centre Energy Management Report). Over the course of this five year plan, an energy audit will be performed on all Town facilities and pump stations. All initiatives identified in the energy audits will be ranked by payback period. Initiative with the fastest payback period will be top priority and implemented first.

In addition to energy savings initiatives at municipal facilities and pump stations (minimum requirement of reg. 397/11), the Town intends to replace all streetlights with LED streetlights during this five year plan. This will result in significant energy and cost savings to the Town.

ENERGY PLAN REVIEW

Regulation 397/11 states that on or before July 1, 2019 and on or before every fifth anniversary thereafter, every public agency shall publish on its website and intranet site, if it has either or both, and make available to the public in printed form at its head office all of the information that is required to be published and made available under subsection (1), the Energy Consumption and Greenhouse Gas Emission Template that is required to be submitted and published on or before July 1 of that year and the following information:

1) A description of current and proposed measures for conserving and otherwise reducing energy consumption and managing demand for energy.
2) A revised forecast of the expected results of the current and proposed measures.
3) A report of the actual results achieved.
4) A description of any proposed changes to be made to assist the public agency in reaching any targets it has established or forecasts it has made. O. Reg. 397/11, s. 6 (3).

Although this information is required every five years, the Town will review the energy management plan on an annual basis. It is important that actual energy usage is monitored and tracked on a regular basis to ensure that energy reduction targets will be met. The energy management team will also present any updates to the plan and results year over year to the environmental committee of the Town of LaSalle.

In addition to monitoring results annually, specific measures will be taken for capital initiatives. For every capital initiative that relates to energy reduction, the Town will measure the energy usage prior to and after the installation of any new capital to ensure that energy savings is occurring as the result of the capital initiative and the projected payback period from dollars saved is reasonable.

ENERGY CONSUMPTION

Refer to Appendix A for 2012 Energy consumption of facilities required to be included in the energy management plan under Reg. 397/11.

FINANCIAL PLAN

As part of the 2014 budget process, the Town included $50,000 in the fleet and facilities capital budget for energy savings related capital projects at the Vollmer Centre. Going forward, it is proposed that 50% of the energy savings resulting from capital projects (excluding the LED streetlight initiative) be used to increase the capital budget for energy savings initiatives and 50% of the savings be used to reduce the operating costs of the Town of LaSalle. This will result in a higher number of energy savings projects implemented year-over-year, which will ultimately result in lower energy usage year-over-year and reduced operating costs to the Town of LaSalle.

In order to accurately determine the dollar value of energy savings each year, it is important that the energy usage for each initiative is measured prior to any capital project implementation and after the implementation.

APPENDIX A

Operation Name	Total Floor Area	Unit	Avg hrs/wk	Annual Flow (Mega Litres)	Energy Type / Amount Consumed in Natural Units				Total (calculated in webform)		
					Electricity		Natural Gas		GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)	Energy Intensity (ekWh/Mega Litre)
					Quantity	Unit	Quantity	Unit			
Environmental Services Building	16,400	Sq. Ft.	40		100,613	kWh	11,003	Cubic Meter	28,845	13	
Fire Station	6,000	Sq. Ft.	168		59,224	kWh	8,161	Cubic Meter	20,162	24	
Front Road Park Washrooms	225	Sq. Ft.	40		7,312	kWh			585	32	
LaSalle Youth Centre	1,200	Sq. Ft.	40		29,299	kWh			2,344	24	
Parks Building	7,500	Sq. Ft.	168		44,858	kWh	7,969	Cubic Meter	18,650	17	
Outdoor Pool	5,500	Sq. Ft.	40		50,221	kWh	6,233	Cubic Meter	15,798	21	
Police Station	10,000	Sq. Ft.	168		251,302	kWh	13,602	Cubic Meter	45,812	40	
Pump Station 4	500	Sq. Ft.	168	59.15	10,526	kWh			842		178
Pump Station 1	2,000	Sq. Ft.	168	2,808.78	345,812	kWh			27,665		123
Pump Station 11		Sq. Ft.	168	105.09	6,288	kWh			503		60
Pump Station 13		Sq. Ft.	168	78.76	4,581	kWh			366		58
Pump Station 14		Sq. Ft.	168	139.16	6,558	kWh			525		47
Pump Station 16		Sq. Ft.	168	75.30	4,859	kWh			389		65
Pump Station 19	500	Sq. Ft.	168	5.05	11,057	kWh			885		2,189
Pump Station 2	500	Sq. Ft.	168	1,032.57	24,030	kWh			1,922		23
Pump Station 3		Sq. Ft.	168	122.90	14,345	kWh			1,148		117
Pump Station 6		Sq. Ft.	168	97.49	4,366	kWh			349		45
Pump Station 7	600	Sq. Ft.	168	1,389.12	41,019	kWh			3,282		30

APPENDIX A Continued

Operation Name	Total Floor Area	Unit	Avg hrs/wk	Annual Flow (Mega Litres)	Energy Type / Amount Consumed in Natural Units				Total (calculated in webform)		
					Electricity		Natural Gas		GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)	Energy Intensity (ekWh/Mega Litre)
					Quantity	Unit	Quantity	Unit			
Pump Station 8		Sq. Ft.	168	56.53	2,363	kWh			189		42
Pump Station 10	500	Sq. Ft.	168	263.75	27,188	kWh			2,175		103
Pump Station 17		Sq. Ft.	168	13.52	1,235	kWh			99		91
Pump Station 12		Sq. Ft.	168	57.49	3,512	kWh			281		61
Pump Station 15		Sq. Ft.	168	34.11	2,076	kWh			166		61
Pump Station- Laurier Storm		Sq. Ft.	168	181.36	9,332	kwh			747		51
Vollmer Centre	115,000	Sq. Ft.	126		4,100,666	kWh	225,404	Cubic Meter	754,067	56	
Vollmer Concession Building	400	Sq. Ft.	40		272,267	kWh			21,781	681	
Pump Station- Disputed Storm		Sq. Ft.	168	43.15	1,381	kWh			110		32
Pump Station 18		Sq. Ft.	168	12.99	11,057	kWh			885		852
Temporary Public Works	7,000	Sq. Ft.	40		51,967	kWh	7,194	Cubic Meter	17,754	18	
Temporary Town Hall	11,285	Sq. Ft.	40		193,712	kWh			15,497	17	
								Total	**1,010,608**		

APPENDIX B

Space reserved for Council Commitment Documentation once approved

APPENDIX C

***Space reserved for Vollmer Recreation Centre Energy Audit Report ***