



Village of Point Edward

Energy Conservation and Demand Management Plan

July 1, 2014

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Preface

The Energy Conservation and Demand Management Plan (hereinafter referred to as the “Energy Management Plan”) was the result of internal reviews by municipal staff with the Village of Point Edward, led by Jim Burns and Paul Churchill. Their analysis was facilitated by Bluewater Power. The resulting Energy Management Plan represents a considered and careful plan to understand and manage the energy needs of the municipality for the period 2014 to 2018. This plan is not a general plan for the community, but a tool for the municipal corporation to manage its energy consumption in order to reduce its carbon footprint and to control its energy costs for heated and cooled facilities.

This Energy Management Plan was considered by Council during its meeting on May 27, 2014 and further updated following the meeting in consultation with municipal staff.

1.0 Executive Summary

This report outlines the Energy Management Plan for the Village of Point Edward (“Point Edward”) located in the Southwestern area of Ontario.

The Energy Management Plan will comply with the requirements of the *Green Energy and Green Economy Act*, O.Reg 397/11 (“GEA Regulation” or “GEA”). The first requirement was met on July 1, 2013 with Point Edward’s submission to the Ontario Ministry of Energy its baseline energy consumption (electricity and natural gas) for the “heated or cooled” municipal facilities. This exercise involved the tracking and reporting of energy usage for the year 2011.

This report, and the data analysis that took place in compiling this report, represent the second requirement under the GEA Regulation, and is due by July 1, 2014. This report contains a summary of the 2012 energy consumption data which must be filed with the Ministry of the Energy, as well as a five year Energy Management Plan outlining planned activities for the period from 2014 to 2018. In accordance with Subsection 4(2)(2) the plan shall include *“a description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency’s operations and for managing the public agency’s demand for energy, including a forecast of the expected results of current and proposed measures”*.

The exercise has spawned an interest in a more structured approach to energy management involving the tracking of consumption and spending, utility rates and projecting the results for better planning. Although Point Edward has been proactive in the past regarding energy efficiency, this initiative provides a context for the on-going activities.

1.1 Plan Development

As part of the initial task in 2013, Point Edward worked closely with its utility, Bluewater Power. An energy plan blueprint was developed focusing on the largest energy consumers amongst the municipally-owned facilities. This provided a starting point and those efforts have been expanded upon over the course of the past year.

In-depth staff interviews and group meetings were conducted. Input has been provided by all staff, from finance to operators to the management team. All of those efforts led to the presentation before the municipal council in order to engage the leadership of the organization in formal energy management. As a result, the Energy Management Plan has been brought together as a comprehensive plan that is both practical and achievable.

1.2 The Result

Together with our partners, Point Edward staff has been able to identify goals, actions and measures that will ensure the Village maintains the services that are needed, while using energy in the most responsible manner. Our success over the next five years will be measured against a target energy savings of 2.0% per year (10% reduction by 2018). In order to achieve that target, this Energy Management Plan identifies opportunities in the form of potential projects (on page 10) that demonstrate a 2.0% annual reduction is attainable for Point Edward. Each project will be assessed by Council as part of the normal budget processes, so the inclusion of specific projects in specific years in this plan is for illustrative purposes to provide comfort that the target is achievable.

This Energy Management Plan also addresses two models for using reserve funds to finance energy savings. Each financing tool assumes an annual contribution to the reserve to be determined by Council, with financial savings from energy reductions either reinvested entirely in the reserve fund (“fast out” model) or shared between the reserve and current operating costs to deliver immediate tax reductions (“shared savings” model). This plan does not recommend one model over the other, but provides Council with the freedom to choose on a project-by-project basis. What this Energy Management Plan does demonstrate is that by utilizing either funding model, the cost of achieving a 2% annual reduction requires new capital in the range of \$80,769 to \$97,827 in total over five years, where energy savings are used to finance new capital. The cumulative result of energy savings at the end of the five-year period is forecast to be approximately \$35,507, which Point Edward can choose to use in the year 2019 to reduce taxes or reinvest in further energy saving projects.

This Energy Management Plan is intended to serve as a guide for staff and Council during the capital planning and budgeting process. The results of Point Edward’s efforts will be reflected in energy data required to be filed with the MOE each July 1st. The role of monitoring progress will fall upon an Energy Management Committee of staff to be appointed by Council from time-to-time. That committee will ensure that both the capital projects and behavioural changes outlined in this Energy Management Plan are maintained on a continuing basis because managing energy costs is important to both environmental and financial good stewardship.

2.0 Background

Point Edward is located in Southwestern Ontario opposite Port Huron, Michigan, at the source of the St. Clair River. In the Canada 2011 census, the population of the Village of Point Edward's population was 2,034.

Point Edward was formed in 1878 and occupies a land area of 3.27 km², with a population density of 622.8 / km², and a median age of 50.7. Point Edward is an urban village, and the total number of private dwellings was 1,000 at the time of the 2011 census.

An Energy Management Plan under GEA Regulation focuses on buildings or facilities owned or leased by the municipality that are either heated or cooled, or are related to the treatment or pumping of water or sewage (together defined as “Reportable Facilities”). As such, this plan relates to Point Edward’s six municipal buildings and one wastewater treatment facility. The municipality’s total energy costs (electricity, gas and water) in 2012 were approximately \$297,390. The 2012 energy costs represent 4.3% of the total municipal budget. Eighty-two percent of the energy is consumed by two locations, namely the Point Edward Arena and the wastewater treatment plant.

Municipalities are faced with increasing infrastructure costs for roads, bridges, sewer and water, as well as increasing energy costs affecting all of its facilities. As such, Point Edward must explore all avenues for cost savings, including energy efficiency projects. In that sense, this plan represents an important financial tool for the Village.

3.0 The Process

As part of the preparation of the 2013 submission, the Village began a planning exercise to develop an EMP blueprint. With the assistance of Bluewater Power, a blueprint, including a number of “walk through” energy audits was completed by Metatech and Associates. The blueprint document served as a framework of activities for the past year. The ongoing process included input from staff and allies, targeting the larger energy users and identifying viable energy efficiency projects.

Discussion also began regarding target levels for energy reduction, renewable energy options, and a structured approach to energy tracking as well as the measurement and evaluation of project impacts.

For the past 12 months staff has participated in numerous activities to drill deeper into the topic and determine specific areas to be included in the EMP. These steps included:

- Meetings with neighbouring municipal stakeholders
- Surveys of past and future activities
- Interviews with key staff

This process has contributed to the building of a common vision with respect to energy, has enhanced staff understanding of the costs and impact of energy on the Village’s finances and has identified practical steps to move forward.

4.0 Measuring Energy Consumption

This report contains a summary of the data filed by Point Edward in compliance with the GEA Regulation as Appendix “A”. The data demonstrates that utility and energy related costs are a significant part of overall operating costs:

- Total utility costs in 2011 were approximately \$375,000
- Utility costs for Reportable Facilities in 2012 were approximately \$297,390
- The Municipality’s Energy Use Indices (EUI) was 28.3 ekWh/ft² (*The Municipal Energy Use Indices (EUI) is a measurement standard enabling a client to benchmark their facilities against similar sites. The natural gas commodity is converted to equivalent kWh so as to develop a common energy measuring unit, which is made more uniform by dividing by the square footage of the building. The lower the ekWh/ft², the better the facility is performing from an energy perspective*)

In the year 2012, Point Edward spent in excess of \$297,000 on natural gas and electricity for the Reportable Facilities. Total energy costs spent by the municipality are higher, as the amount presented for reported facilities does not include items such as outdoor lighting or street lights.

It can be difficult to compare energy costs year over year due to the impact of weather on air conditioning and heating load. In addition, it is typical for municipalities to see an increase in energy costs as they expand existing facilities or add new services. Both weather and growth in facilities needs to be considered in the future when evaluating the achievement of targets set under this EMP.

Overall, the energy intensity of Point Edward and its facilities appears to be within an acceptable range. Historical energy costs for the years 2010 to 2012 are as follows:

Total Energy Costs for Facilities	2010	2011	2012
Heated or Cooled Buildings Only	\$155,963	\$161,497	\$149,995
WWTP	\$112,036	\$128,577	\$147,395
Total Reportable Costs for Reg 397/11	\$267,999	\$290,074	\$297,390
Annual Municipal Budget	\$7,909,811	\$7,492,504	\$6,943,478
Energy Costs as a % of Total Budget	3.4%	3.9%	4.3%

The percentage of the total municipal budget that energy costs represent is consistent year over year. There is a decrease in consumption from 2011 to 2012, but an increase in reportable costs related to rate increases from 2011 to 2012. However the decrease in consumption reflects the Village of Point Edward's focus on reducing energy consumption and controlling energy costs. For that reason, the year 2011 has been selected as the base year in order to capture some of the energy efficiency initiatives already undertaken by the Village.

5.0 Energy Management Planning

The heart of the Point Edward's Energy Management Plan is to promote good stewardship of our environment and community resources. In keeping with our core values of efficiency and financial responsibility, Point Edward's EMP program will reduce operating costs and enable the Municipality to provide improved returns when spending taxpayers' dollars.

5.1 Energy Management Plan Process and Development

The EMP is meant to serve as a basis for energy and utility-related decisions in the coming years. The main goal is to outline the strategies for implementing improvements to facilities and operations that reduce energy costs and affect positive environmental changes.

5.2 Past Energy Management Activities

Point Edward has historically been very active and aware of energy and sustainability initiatives, and has completed a number of energy efficiency projects over the past few years. The GEA O.Reg 397/11 requires the year 2011 or 2012 to be the baseline upon which a municipality is measured for achieving further targeted energy savings. This creates an artificial starting point and can have the effect of downplaying the significance of prior energy efficiency efforts. In order to partially capture some of those efforts, the year 2011 was selected as a base case against which future energy savings will be measured. The energy efficiency projects undertaken in 2011, or prior, include the following:

- Lighting retrofit with occupancy sensors at the Point Edward Arena/Community Hall
- Ice surface lighting retrofit at the Point Edward Arena

In order to complete the picture, a list of projects that have been implemented during 2012 and beyond to specifically lower energy costs include:

- Energy efficient lighting upgrades at three sites using the OPA Small Business Lighting Initiative

- Installation of a new battery operated Olympia ice resurfacer, which is charged during off peak hours
- Installed new pumps at three pump stations as well as the Waste Water Treatment Plant (“WWTP”)
- Lighting retrofit completed at the Municipal Office

The five-year Energy Management Plan represented in this report provides an excellent opportunity to both reflect upon past successes and develop plans for future initiatives.

5.3 Behavioural and Cultural Initiatives

Often lost in a more technical analysis of energy needs are the “soft” initiatives that involve behavioural change. As with the “Culture of Conservation” the Province of Ontario is attempting to achieve in this province, the Village of Point Edward has always been cognizant of the need to conserve energy. A list of the types of actions that have led to tangible, but difficult to quantify savings are as follows:

- Staff routinely turn off lights in unused areas
- Efforts are made to consider energy use in all aspects of day to day operations
- Municipal Council has played a lead role by clearly demonstrating its interest in innovation, energy efficiency and maximizing the use of energy resources.

5.4 Present Energy Initiatives

The GEA O.Reg 397/11 focusses on heated or cooled municipal facilities and, therefore, does not include consideration of measures related to outdoor lighting. Nevertheless, most forward thinking municipalities are tackling the challenge of street lights. This includes the Village of Point Edward, whose current plans for 2014 include a major investment for the replacement of all high intensity discharge street lights with new LED units. While it is understood this initiative is outside of the scope of the present EMP, this initiative alone will reduce the overall electricity costs of the Village by approximately 10%. The projected savings of 284,904 kWh represents a financial savings to the Village of approximately \$54,000 per year including energy at current rates and maintenance costs. The project was also facilitated by one-time capital incentives from the Ontario Power Authority, facilitated by Bluewater Power, of \$14,245.

6.0 Goals for Future Energy Management

Point Edward has set a five-year target of a 10% energy reduction, to be achieved through an annual goal of a 2% energy reduction. The goal is based on a list of potential projects that have been identified below, but also having regard to the fact that implementation of these projects is dependent upon staff to manage the projects and funding, both of which have a finite limit. That is to say that Point Edward has the opportunity to achieve its energy efficiency target, but the achievement of the target will require a focused effort.

The list of projects set out in the table that follows represents a list of potential projects considered during the development of the Energy Management Plan. The costs, incentives, and energy savings (both ekWhs and financial savings) are estimates based on consideration of the facilities and their current usage, but without the benefit of detailed engineering. Whether a particular project is pursued by Point Edward will be decided by Council as part of its normal budgeting processes. That in mind, the table that follows places a marker in the form of an “X” under the year where each project might be considered. In general, the projects identified are considered high priority and have, therefore, been proposed for the first four years of the five year plan. No projects have been proposed for the last year, but Point Edward intends to monitor progress with technology and continuously evaluate opportunities.

Project	Cost	Incentives	ekWhs saved	Cost Savings	2014	2015	2016	2017	2018
Point Edward Arena-Compressor Replacement	\$115,000	\$8,000	80,000	\$12,000	X				
Direct Install Lighting	\$2,500	\$1,500	7,000	\$1,000	X				
Direct Install Lighting	\$2,000	\$1,500	5,000	\$700	X				
WWTP-pump VFDs audit	\$20,000	\$10,000	0	\$0		x			
Off Peak Zamboni charging	\$1,000	\$0	0	\$600	X				
River water heat pump study	\$28,000	\$10,000	0	\$0		X			
vfd on blowers	\$80,000	\$25,000	200,000	\$28,000			x		
Heat recovery on compressors	\$70,000	\$30,000	100,000	\$13,000				x	
lighting motion sensors	\$10,000	\$4,000	45,000	\$4,000				X	

The projects noted above are considered “proposed” and each is subject to Council approval through the normal capital budget approval process of the municipality.

7.0 Energy Management Committee

Point Edward will implement an Energy Management Committee to create and maintain a methodical focus on energy costs. This Committee will provide a vehicle for key staff from critical departments to track energy budgets, update energy related projects and develop accountability for achieving energy reduction targets. The committee will have the lead responsibility and accountability for monitoring and achieving energy reduction targets.

The proposed committee shall be established by Council upon finalization of this Energy Management Plan to be made-up of the management committee and having regard to the following principles:

- major energy consuming departments (Public Works, Community Services, and Facilities) need participation
- Financial expertise shall be required at the table
- The CAO, who has overall responsibility, shall be required

The specific mandate for the proposed committee shall be established by the Committee, in consultation with Council upon creation, based generally on the following:

- Track energy spending annually, with summary results and analysis available prior to recommending a capital budget to Council
- Analyze and prioritize projects for consideration by Council on an annual basis
- Identify further potential projects beyond this plan as technology changes
- Consider a corporate strategy for back-up generators
- Creation of an energy awareness strategy for staff
- Reporting and tracking all utility incentives

Participation and education will be solicited from utility partners, both electrical and gas suppliers, to ensure up to date information on incentive programs, energy rates and other available assistance. Active participation from these partners will make the Energy Management Committee that much more effective.

8.0 Capital Funding

In this current age of low interest rates and low yields on bonds and investments, a 20% or higher return on investment is an attractive proposition. Reviewing the above table the majority of the proposed projects represent a very attractive simple return on investment in the range of approximately 20% annually.

Bluewater Power, through the OPA's "saveONenergy" conservation programs provides capital incentives for undertaking capital projects that reduce electrical consumption. Similarly, Union Gas has certain programs to manage demand for natural gas. The capital projects proposed in the above table could attract in excess of \$80,000 in capital incentive rebates from the OPA alone.

It is also important to remember that energy-efficiency upgrades can often be complementary to normal needs driven by assets failing or reaching end of life. The boiler, rooftop HVAC units, and police building chiller projects in the table above represent this type of efficiency project. The capital plan and condition assessment call for the replacement of the equipment, however, by upgrading the new equipment to an energy efficient model, it becomes an energy efficient project. Only the incremental capital required to upgrade to an efficient model over the base case model needs to be attributed to the energy project payback. Due diligence in the procurement stage is necessary though, to ensure that only proposals for an efficient replacement are considered in awarding the project to a successful bidder.

For the remaining capital needs, some municipalities have capital reserve fund accounts that can be utilized to effectively "borrow" capital funds to pay for energy efficiency projects. Point Edward does have funds available in the Point Edward electrical reserve fund, which is currently funding the LED street lighting retrofit. Point Edward has also indicated that energy efficiency investments that are small in size, or normal in nature, would be paid directly out of the capital budget without consideration of using reserve funds.

For large projects, Point Edward could consider utilizing reserve fund accounts to finance capital projects to effectively self-finance energy efficiency projects with "capital loans" from reserves. It is important for these "capital loans" to be paid back to the reserve fund utilizing the cost savings or avoided energy costs that result from the energy efficiency upgrades. The question remains whether those funds are to be returned to the reserve entirely so that they can finance future capital investments ("fast out" basis) or shared between the reserve fund and current budget so that savings partially finance future capital and partially reduce taxes ("shared savings" basis).

8.1 “Fast out” basis: All savings are paid back into the reserve in order to replenish the reserve for future capital projects and ensure the pay-back period is minimized. The tables below illustrate how the “fast out” option could materialize and achieve the 2.0% annual reduction target using numbers representative of the types of projects that will be considered spread evenly over the five year period.

Fast Out option						
	2014	2015	2016	2017	2018	5 Year Total
Total Project Spend	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000
Incentives	\$0	\$6,500	\$6,500	\$6,500	\$6,500	\$26,000
Operating Savings	\$0	\$6,556	\$13,373	\$20,464	\$27,838	\$68,231
Net New Capital	\$35,000	\$21,944	\$15,127	\$8,036	\$662	\$80,769
Incentives	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$32,500
Incremental Annual Energy Savings	\$6,556	\$6,818	\$7,090	\$7,374	\$7,669	\$35,507
Cumulative Annual Energy Savings	\$6,556	\$13,373	\$20,464	\$27,838	\$35,507	\$35,507
Energy Reduction (ekwhs)	60,696	60,696	60,696	60,696	60,696	303,478
% Reduction	2%	2%	2%	2%	2%	10%

By transferring the annual utility savings and the capital incentives back into the energy reserve account to use for future capital expenditures, the amount of new capital necessary over five years to achieve \$175,000 of capital energy project spending is only \$80,769. The result of directing \$80,769 in reserve fund capital to energy reduction projects would reduce total energy consumption by approximately 2% per year, resulting in estimated financial savings of approximately \$35,507 per year by 2019 that could be used either use to reduce taxes or reinvest in further energy saving projects.

8.2 “Shared savings” basis: Financial energy savings are shared between the current year to reduce O&M with the effect of reducing the current tax levy, with the remainder being returned to the reserve for future capital projects. The percentage of savings can vary based on the desire to balance current taxes and future capital needs. The tables below illustrate how the “shared savings” option could work using a 75/25 sharing between reserve/ratepayer and numbers representative of the types of projects that will be considered spread evenly over the five year period.

Shared savings option						
	2014	2015	2016	2017	2018	5 Year Total
Total Project Spend	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000
Incentives to reserve	\$0	\$6,500	\$6,500	\$6,500	\$6,500	\$26,000
Operating Savings from Reserve	\$0	\$4,917	\$10,030	\$15,348	\$20,878	\$51,173
Net New Capital	\$35,000	\$23,583	\$18,470	\$13,152	\$7,622	\$97,827
Incentives	\$6,500	\$6,500	\$6,500	\$6,500	\$6,500	\$32,500
Incremental Annual Energy Savings	\$6,556	\$6,818	\$7,090	\$7,374	\$7,669	\$35,507
Cumulative Savings to Reserve	\$4,917	\$10,030	\$15,348	\$20,878	\$26,630	\$26,630
Savings Shared with Ratepayers	\$1,639	\$3,343	\$5,116	\$6,959	\$8,877	\$8,877
Energy Reduction (ekwhs)	60,696	60,696	60,696	60,696	60,696	303,478
% Reduction	2%	2%	2%	2%	2%	10%

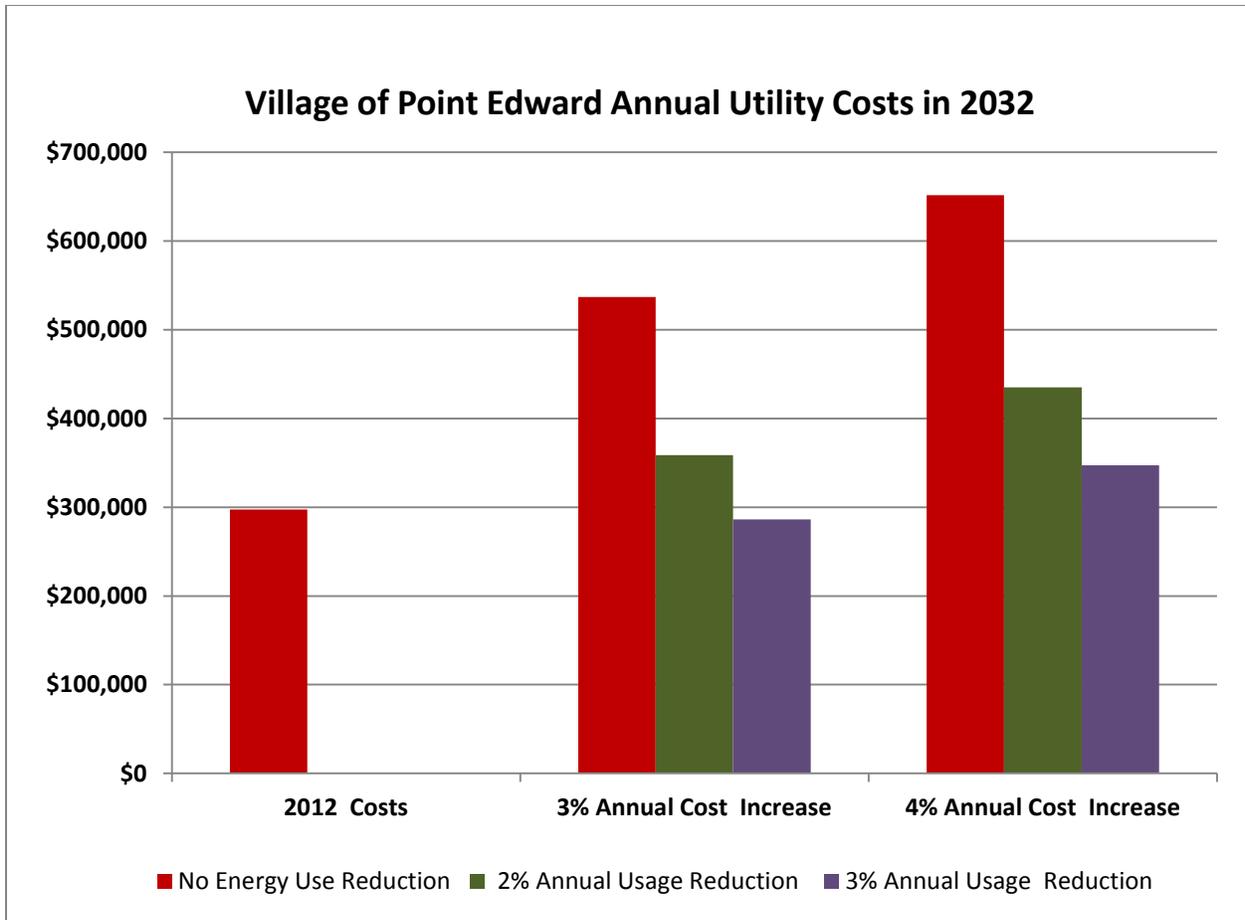
Under this scenario, the amount required from capital reserve funds increases from \$80,769 to \$97,827 over five years; however the 2% annual energy reduction also delivers approximately \$8,877 of cumulative savings back to ratepayers over the five years of the plan.

This Energy Management Plan does not seek to choose one financing model over another. Whether savings are used exclusively to finance future capital under the “fast-out” model, or shared with ratepayers under the “shared-savings” model, will be decided on a project-by-project basis. The availability of either tool, however, is important to the achievement of the goals of this Energy Management Plan in a sustainable manner.

8.3 Why Set Energy Reduction Targets?

This report sets a reduction target of 2.0% annually. The graph below demonstrates the potential financial reward to the municipality for forward-thinking energy planning. The graph shows the differences in the total annual cost of energy in 20 years’ time, using a variety of annual energy rate increases of 3% and 4%, respectively. The graph compares those projected costs with, and without, achieving the energy reduction target of 2% each year over 20 years (for illustrative purposes, the graph also shows a 3% energy reduction target).

What the graph demonstrates is that it is possible to manage energy costs through aggressive energy conservation. Even assuming a 4% annual increase in the cost of energy, the difference in total cost of energy in 20 years between zero conservation and 2.0% annual conservation is the difference between energy costs increasing by 119% over 20 years or increasing by 46% over 20 years. If we look to the more conservative 3% annual increase in the cost of energy, we see that an aggressive 3% annual reduction in energy consumption is able to largely offset the increase in energy prices over 20 years.



In other words, energy conservation is not simply a means of reducing the Village of Point Edward’s environment footprint, but it is also a critical financial tool for managing costs.

9.0 Other Energy Matters

The “*Guide to Preparing Conservation and Demand Management Plans*” recommends a municipality to turn its mind beyond energy reduction targets and to address other matters related to energy. In the case of the Point Edward, two matters are worth addressing related to backup generation and renewable energy generation.

9.1 Backup Generation

Point Edward has been very cognizant of the need for backup power generation and have installed backup generation at all six of its significant municipal facilities. The table below lists the facilities and the capacity of installed generation. Generators are installed at the Fire Hall, and the Arena for emergency purposes. Generators are also installed at both the WWTP and the Municipal Office to avoid business interruption.

Facility	Size in kW	Fuel Type
Municipal Office	17	Natural Gas
Arena	80	Natural Gas
Fire Hall	55	Natural Gas
WWTP	100 (approx.)	Diesel

There may be an opportunity to utilize these assets to participate in the Demand Response (“DR3”) initiative with the Ontario Power Authority. Although this initiative is currently in transition, there may be opportunities if responsibilities are transferred to the Independent Electrical System Operator (“IESO”) within the next year. Some capital investment and time from municipal staff would be required to change the Certificate of Approval - Air (“CofA”), as would slight modifications to the equipment itself. At such time when there is greater certainty, the payback should be evaluated and this could represent an opportunity for further consideration in later years of the five year plan activity.

Should there be an opportunity to work with Bluewater Power and other neighbouring municipalities, Point Edward would likely need to consider being part of an aggregated pool of generators that could be bid into a program such as the present DR3 initiative.

9.2 Renewable Generation

The GEA O.Reg.397/11 states specifically that *“Within the five year plan, the municipality will provide*

- *A description of any renewable generation facility operated by the public agency and the amount of energy produced on an annual basis by the facility.*
- *A description of the ground source energy harvested, if any, by ground source heat pump technology operated by the public agency.*
- *The solar energy harnessed, if any, by thermal air technology or thermal water technology operated by the public agency.*
- *The PROPOSED PLAN, if any, to operate heat pump technology, thermal air technology or thermal water technology in the future.”*

Point Edward may decide to investigate options for the implementation of other renewable technology projects at its facilities. For example, the two largest energy consuming facilities are in the proximity of the St. Clair River which could serve as a resource for both a heating and cooling project. Funding is available for an engineering study to investigate the viability of this initiative if desired.

10.0 Conclusion

The Village of Point Edward is a corporate entity with significant assets and an overall energy budget of nearly \$400,000 annually. Point Edward recognizes that energy prices, both natural gas and electricity, will increase over the next five to ten years and create pressure on the municipality's finances. One of the most effective ways for municipalities to tackle these price increases, without lowering municipal service levels, is to decrease the amount of energy used.

Through this Energy Management Plan, Point Edward declares that it will proactively manage its energy costs by setting a target of reducing energy by 10 % over the next five years. A number of preliminary energy studies have already been undertaken and a list of potential projects has been developed. Both demonstrate that the energy reduction target is achievable. The key to hitting these targets will be the availability of capital to complete projects in a planned manner and through a financing tool that permits savings to be returned, in full or in part, to the reserve fund from which the capital was funded. In this manner, the municipality will build upon its energy efficiency successes over the next five years of this plan.

Monitoring progress toward the energy reduction target will be the responsibility of the Energy Committee of Point Edward to be established under this Energy Management Plan. That committee will ensure accountability within each department for energy budgets, prioritize energy efficiency projects for capital spending, as well as monitor and report progress on the achievement of the 2% annual energy reduction target.

Appendix A

Energy Consumption and Greenhouse Gas Emissions Reporting - for 2012												
Press TAB to move to input area												
Confirm consecutive 12-month period (mth-yr to mth-yr)	January 2012 to December 2012											
Sector												
Agency Sub-sector												
Organization Name	Village of Point Edward	Please fill in the mandatory fields indicated in red, in addition to submitting data on your energy usage.										
Operation Name	Operation Type	Address	City	Postal Code	Total Floor Area	Unit	Avg hrs/wk	Annual Flow (Mega Litres)	Energy Type and Amount Purchased and Consumed in Natural Units			
									Electricity		Natural Gas	
									Quantity	Unit	Quantity	Unit
<i>Stephenson Building</i>	<i>Administrative offices and related facilities</i>	<i>2160 Yonge Street</i>	<i>Toronto</i>	<i>M7A 2G5</i>	<i>135,034.00</i>	<i>Square meters</i>	<i>70</i>	<i>23516.00224</i>	<i>2,181,065.00000</i>	<i>kWh</i>	<i>125,300.00000</i>	<i>Cubic meter</i>
Arena	Indoor ice rinks	210 Monk Street	Point Edwa N7V 1N2		40,000	Square feet	112		575,820	kWh	56,045	Cubic Meter
Library	Public libraries	36 St. Clair Street	Point Edwa N7V 1N7		2,432	Square feet	25		29,993	kWh	4,861	Cubic Meter
Municipal Office	and related facilities, including municipalities and associated offices and facilities	135 Kendall Street	Point Edwa N7V 4G5		1,400	Square feet	40		26,579	kWh	2,030	Cubic Meter
OPP Office		102 St. Clair Street	Point Edwa N7V 1N7		2,240	Square feet	168		42,756	kWh	2,909	Cubic Meter
Public Works building	Equipment or vehicles are maintained	701 Lite Street	Point Edwa N7V 1A7		8,460	Square feet	50		37,877	kWh	11,451	Cubic Meter
WWTP	Facilities related to the treatment of wastewater	92 Alexandra Avenue	Point Edwa N7V 1C2					5571.20000	1,030,680	kWh	20,888	Cubic Meter
Fire Department	Facilities and associated offices and facilities	220 Michigan Avenue	Point Edwa N7V 1E8		4,980	Square feet	84		59,867	kWh	9,722	Cubic Meter

APPENDIX B

ONTARIO REGULATION 397/11

made under the

GREEN ENERGY ACT, 2009

Made: August 17, 2011

Filed: August 23, 2011

Published on e-Laws: August 25, 2011

Printed in *The Ontario Gazette*: September 10, 2011

ENERGY CONSERVATION AND DEMAND MANAGEMENT PLANS

Definitions

1. In this Regulation,

“municipal service board” means,

- (a) a municipal service board or joint municipal service board established or continued under the *Municipal Act, 2001*,
- (b) a city board or joint city board established or continued under the *City of Toronto Act, 2006*, or
- (c) a joint board established in accordance with a transfer order made under the *Municipal Water and Sewage Transfer Act, 1997*; (“commission de services municipaux”)

“post-secondary educational institution” means a university in Ontario, a college of applied arts and technology in Ontario or another post-secondary educational institution in Ontario, if the university, college or institution receives an annual operating grant; (“établissement d’enseignement postsecondaire”)

“public hospital” means,

- (a) a hospital within the meaning of the *Public Hospitals Act*, or
- (b) the University of Ottawa Heart Institute/Institut de cardiologie de l’Université d’Ottawa; (“hôpital public”)

“school board” means a board within the meaning of the *Education Act*. (“conseil scolaire”)

Application

2. Sections 4, 5 and 6 apply only to public agencies prescribed by section 3.

Public agencies

3. The following are prescribed as public agencies for the purposes of the Act:

- 1. Every municipality.
- 2. Every municipal service board.

3. Every post-secondary educational institution.
4. Every public hospital.
5. Every school board.

Energy conservation and demand management plans

4. (1) A public agency shall prepare, publish, make available to the public and implement energy conservation and demand management plans or joint plans in accordance with sections 6 and 7 of the Act and with this Regulation.

(2) An energy conservation and demand management plan is composed of two parts as follows:

1. A summary of the public agency's annual energy consumption and greenhouse gas emissions for its operations.
2. A description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency's operations and for managing the public agency's demand for energy, including a forecast of the expected results of current and proposed measures.

Summary of annual energy consumption and greenhouse gas emissions

5. (1) Subject to subsection (2), a summary of the public agency's annual energy consumption and greenhouse gas emissions must include a list of the energy consumption and greenhouse gas emissions for the year with respect to each of the public agency's operations that are set out in Table 1 of this Regulation for the type of public agency to which the public agency belongs and that are conducted in buildings or facilities the public agency owns or leases that,

- (a) are heated or cooled and in respect of which the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption; or
- (b) are related to the treatment or pumping of water or sewage, whether or not the building or facility is heated or cooled, and in respect of which the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption.

(2) If only part of a building or facility where an operation is conducted is heated or cooled, the public agency's summary referred to in subsection (1) must only include energy consumption and greenhouse gas emissions for the part of the building or facility where the operation is conducted that is heated or cooled.

(3) The public agency's summary referred to in subsection (1) must be prepared using the form entitled "Energy Consumption and Greenhouse Gas Emissions Template" that is available from the Ministry and must include the following information and calculations for each of the public agency's operations:

1. The address at which the operation is conducted.
2. The type of operation.
3. The total floor area of the indoor space in which the operation is conducted.

4. A description of the days and hours in the year during which the operation is conducted and, if the operation is conducted on a seasonal basis, the period or periods during the year when it is conducted.
5. The types of energy purchased for the year and consumed in connection with the operation.
6. The total amount of each type of energy purchased for the year and consumed in connection with the operation.
7. The total amount of greenhouse gas emissions for the year with respect to each type of energy purchased and consumed in connection with the operation.
8. The greenhouse gas emissions and energy consumption for the year from conducting the operation, calculating,
 - i. the annual megawatt hours per mega litre of water treated and distributed, if the operation is a water works,
 - ii. the annual megawatt hours per mega litre of sewage treated and distributed, if the operation is a sewage works, or
 - iii. per unit of floor space of the building or facility in which the operation is conducted, in any other case.

(4) If a public agency conducts, in the same building or facility, more than one operation set out in Table 1 of this Regulation for the type of public agency to which the public agency belongs, it shall make a reasonable allocation of the amount of energy purchased and consumed for the year among each of those operations.

(5) In preparing its annual Energy Consumption and Greenhouse Gas Emission Template, a public agency may exclude its energy consumption and green house gas emissions relating to its temporary use of an emergency or back-up generator in order to continue operations.

(6) On or before July 1, 2013, every public agency shall submit to the Minister, 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 the public agency's Energy Consumption and Greenhouse Gas Emission Template for operations conducted in 2011.

(7) On or before July 1 of each year after 2013, every public agency shall submit to the Minister, 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 the public agency's Energy Consumption and Greenhouse Gas Emission Template for operations conducted in the year following the year to which the last annual Template related.

(8) The following information, if applicable, must also be submitted, published and made available to the public with every Energy Consumption and Greenhouse Gas Emission Template:

1. If the operation is a school operated by a school board,
 - i. the number of classrooms in temporary accommodations at the school during the year, and
 - ii. whether there is an indoor swimming pool in the school.

2. If the public agency is a public hospital, whether a facility operated by the public hospital is a chronic or acute care facility, or both.

Energy conservation and demand management measures

6. (1) On or before July 1, 2014, 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,

- (a) the information referred to in subsection 6 (5) of the Act with respect to each of the public agency's operations set out in Table 1 of this Regulation for the type of public agency to which the public agency belongs;
- (b) the information referred to in paragraph 2 of subsection 4 (2) of this Regulation with respect to each of the public agency's operations set out in Table 1 of this Regulation for the type of public agency to which the public agency belongs; and
- (c) the following information:
 - (i) information on the public agency's annual energy consumption during the last year for which complete information is available for a full year,
 - (ii) the public agency's goals and objectives for conserving and otherwise reducing energy consumption and managing its demand for energy,
 - (iii) the public agency's proposed measures under its energy conservation and demand management plan,
 - (iv) cost and saving estimates for its proposed measures,
 - (v) a description of any renewable energy generation facility operated by the public agency and the amount of energy produced on an annual basis by the facility,
 - (vi) a description of,
 - (A) the ground source energy harnessed, if any, by ground source heat pump technology operated by the public agency,
 - (B) the solar energy harnessed, if any, by thermal air technology or thermal water technology operated by the public agency, and
 - (C) the proposed plan, if any, to operate heat pump technology, thermal air technology or thermal water technology in the future,
 - (vii) the estimated length of time the public agency's energy conservation and demand management measures will be in place, and
 - (viii) confirmation that the energy conservation and demand management plan has been approved by the public agency's senior management.

(2) In addition to publishing and making available the required information with respect to the operations mentioned in clauses (1) (a) and (b), a public agency may also publish information with respect to any other operation that it conducts.

(3) 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 its 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.

(4) If a public agency initiated energy conservation measures or energy demand management measures before July 1, 2014, the public agency may also include in its first plan information on the results of those measures.

TABLE 1

Column 1	Column 2	Column 3
Item	Type of public agency	Operation
1.	Municipality	1. Administrative offices and related facilities, including municipal council chambers.
		2. Public libraries.
		3. Cultural facilities, indoor recreational facilities and community centres, including art galleries, performing arts 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 and 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.
2.	Municipal service board	1. Buildings or facilities related to the treatment or pumping of water or sewage.
3.	Post-secondary educational	1. Administrative offices and related facilities.

	institution	
		2. Classrooms and related facilities.
		3. Laboratories.
		4. Student residences that have more than three storeys or a building area of more than 600 square metres.
		5. Student recreational facilities and athletic facilities.
		6. Libraries.
		7. Parking garages.
4.	School board	1. Schools.
		2. Administrative offices and related facilities.
		3. Parking garages.
5.	Public hospital	1. Facilities used for hospital purposes.
		2. Administrative offices and related facilities.

Commencement

7. This Regulation comes into force on the later of January 1, 2012 and the day it is filed.