ONTARIO REGULATION 397/11

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 mega watt hours per mega litre of water treated and distributed, if the operation is a water works,

   ii. the annual mega watt 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 institution	1. Administrative offices and related facilities.
		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.

GREEN ENERGY ACT, 2009 – O.Reg. 397/11 Town of Georgina (Overview)

On January 1, 2012, the Energy Conservation and Demand Management Plans Regulation (O.Reg.397/11) came into effect, requiring public agencies in Ontario to develop energy conservation and demand management (CDM) plans. The Town of Georgina falls under this regulation as a municipality.

By July 1, 2014, a summary of energy consumption and GHG emissions must be submitted, for the year 2012, as well as a five-year conservation plan outlining CDM measures. This plan is to include:

- Goals and objectives for managing, conserving, and reducing energy consumption
- Plans approved by the Municipality's senior management
- Estimated costs and savings for the duration of the Plan

This plan must be made public in printed form at the Town offices, and must be updated every five years, including amendments, revisions, results, and proposed changes that could aid in reaching targets or forecasts.

The operations covered by this Regulation with respect to the Town of Georgina are as follows:

- Administrative offices and related facilities, including council chambers
- Public libraries
- Cultural facilities, indoor recreation facilities and community centres, including performing arts facilities, auditoriums, indoor sports arenas, indoor ice rinks, indoor swimming pools, gyms, and indoor courts for playing tennis, basketball, or other sports.
- Fire stations and associated offices and facilities
- Storage facilities where equipment or vehicles are maintained, repaired, or stored
- Buildings or facilities related to the treatment or pumping of water or sewage

Using these criteria, it is obvious that several major facilities are not in the report. These include all of our outdoor facilities such as ball diamonds, soccer fields, public parks, as well as the Pefferlaw Ice Pad and ROC outdoor facilities.

It should also be noted that O.Reg. 397/11 requires reporting on the different operations within single building facilities, and the total energy consumption must be divided amongst the different operations. For example, the Georgina Ice Palace facility has multiple operations under its roof, namely the ice rink facilities, library, gymnasium, banquet hall, and leased space. Due to having only one electricity and natural gas meter for the facility, careful examination was performed, of floor space, hours of operation, and regard for the fact that some operations need considerably more energy than others (eg. ice plant requires significant electricity consumption). From there, a reasonable estimate of the consumption allotment for the various operations was established.

Average weekly hours of operation were calculated based on the annual permitted use of the facilities in 2012, for community centres. The Keswick and Sutton fire halls are 24 hour facilities, therefore 168 hours per week was the total. According to the guidelines for reporting, office space was to be reported as an average of 40 hours per week, while, for recreation facilities, cultural facilities and libraries, hours were estimated according to the average time that they were open to the public.

In terms of reporting for the Town's pumping stations, it should be noted that energy consumption was to be compared to annual pump volume. Since most of the pumps do not have flow meters, it was necessary to calculate annual flow by multiplying the annual hours of pump operation as indicated in the various log books, by the rating number of each pump as shown on its particular pump curve. As well, Pumping Stations 17, 23, and 24 contain variable frequency drive pumps and rarely run at full capacity, therefore it was advised to calculate the total annual flow and multiply it by an average of 80%. As for average weekly hours of operation for the pumping stations, according to the guidelines for reporting, the stations are to

be considered in constant use, therefore 168 hours per week, even though the pumps are not in constant operation.

The total energy consumption numbers have been documented from the actual bills from the utility companies over the year 2012 and are as accurate as possible.

As is now obvious, the allotments in this report are, for the most part, reasonable estimates based on several different factors, specific to the type of operation of each facility, and should be utilized as a benchmark to calculate energy consumption in the future.

Included is a spreadsheet outlining the various facilities with multiple operations and the assigned ratios of energy consumption.

Attached is the consumption data for the various municipal facilities which fall under the criteria outlined above, for the year 2012, as well as Georgina's Conservation and Demand Management Plan (CDM Plan), as required by Regulation 397/11. The CDM Plan can be considered a living document, and can be expanded and amended as requirements and legislation changes.

Commitment

Declaration of Commitment: The Town of Georgina will allocate the necessary resources to develop and implement the Energy Conservation and Demand Management Plan (ECDMP) as required under *Regulation 397/11* of the *Green Energy Act*. Council supports energy planning because it will help avoid cost increases, improve service delivery, and support local industry while protecting human health and the environment. The Town's Energy Conservation and Demand Management Plan (CDM Plan) will reduce our energy consumption and its related environmental impact as outlined in our overall target. Staff and council will endeavour to achieve the objectives presented in this plan and that progress towards those objectives will be monitored on an ongoing basis. Staff and council will update the plan as required under *Regulation 397/11* of the *Green Energy Act* or any subsequent legislation.

Vision: The Town of Georgina will strive to continually reduce our total energy consumption and associated greenhouse gases (GHGs) through the wise and efficient use of energy resources, while maintaining a high level of service for our patrons and the general public. This will involve a collaborative effort to increase education, awareness, and understanding of energy management within the municipality. This vision can be realized through the integration of energy efficient facility infrastructure, operational efficiencies, and building a culture of energy awareness and knowledge within the municipality. While commitment from Council and Senior Management is required, all staff have a role in energy management and to demonstrate appropriate leadership within corporate facilities and operations.

Policy: The Town of Georgina will endeavour to incorporate energy efficiency throughout all of its activities including organizational and human resources management procedures,

procurement practices, financial management and investment decisions, and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs will be considered in the lifecycle costing and procurement policies of the municipality. All departments will have clear links to some or all of the goals and objectives of the CDM Plan.

Goals: The Town of Georgina CDM Plan's goals are to continuously improve the energy efficiency of our facilities and processes in order to reduce our operating and maintenance costs, our energy consumption, and the resulting greenhouse gas emissions.

Overall Target: The Town of Georgina will strive to reduce its overall consumption of fuels (electricity, natural gas and oil) in all relevant municipal operations by 5% between 2014 and 2019. Relevant municipal operations include all those facilities whose energy consumption must be reported to the Ministry of Energy under *Regulation 397/11* of the *Green Energy Act* plus all streetlight accounts (given they are such a large energy consumer). The 5% energy reduction target is significant in that it will help stabilize the budget lines to operate these facilities given that the price of energy is expected to increase between 2-5% over the next several years.

Objectives: In order to achieve the strategic goals of the CDM Plan, a number of objectives must be outlined prior to development and implementation:

1. To ensure that energy efficiency is consistent across municipal facilities.
2. To monitor and report on energy consumption in annual intervals. Staff will implement a review process for the information from utility bills related to energy.
Staff will also monitor and verify Return On Investment of energy projects on an annual basis.
3. To better analyze energy costs and identify savings opportunities. This will include investigating energy commodity procurement options and taking advantage of all available resources and funding as well as rebates and incentives for energy projects.
4. To raise staff and council awareness of energy consumption and potential savings around energy efficiency.
5. To strengthen partnerships with the Town's energy suppliers.
6. To identify and investigate renewable energy generation opportunities and make educated decisions on their economic feasibility.

Organizational Understanding

Our Municipal Energy Needs: The Town of Georgina requires reliable, low-cost, sustainable energy sources delivering energy to obtain the most efficiency and energy consuming technology feasible. The Town will apply a life cycle costing approach to energy management for projects of economic significance.

Stakeholder Needs: Internal stakeholders (Council, CAO, staff) need to be able to clearly communicate the corporate commitment to energy efficiency, and to develop the skills and

knowledge required to implement energy management practices and measures. External stakeholders (the Province, community citizens and groups) look to the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services.

Municipal Energy Situation: Assessment of organizational capacity for energy management with respect to energy policy; organizational structure; employee awareness, skills and knowledge; energy information management; communications; and investment practices has identified the following:

-Energy use and costs continue to increase, and this trend is expected indefinitely.
-Energy consumption may not be priority to municipal decision makers such as Council, senior management, front-line staff, and members of the public. This may be as a result of a lack of knowledge or understanding.
-Occasional efforts are made to raise general staff awareness regarding energy, however, these efforts are often not followed up.
- The requirement for this CDM Plan provides an opportunity to build upon current initiatives already in place.

How We Manage Energy Today: The management of our energy is a combination of energy data management, energy supply management, and energy use management.

- Energy Data Management: Municipal energy data is managed through the Finance Department.
- Energy Supply Management: Our municipal energy is supplied via a number of providers as outlined: Electricity is supplied by Hydro One on an as needed basis and is priced at the standard rates offered by the provider. Natural gas is provided by Enbridge.
- Energy Use Management: Day to day management of energy has historically been unplanned. To aid in our efforts to track and reduce energy use the Town of Georgina utilizes the LAS Energy Planning Tool (EPT) in an ongoing manner and to generate an Energy Consumption report as required.

Summary of Current Energy Consumption, Cost and GHGs: The current energy usage by facility and pumping station is detailed in the Town's Submission Report to the Ministry of Energy for the years 2011 and 2012. Energy usage is updated annually in the Energy Planning Tool (EPT) and reported to the Ministry of Energy.
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Summary of Current Technical Practices: Our assessment of operations and maintenance practices, facility and equipment condition, and energy performance indicators establishes the following priorities:

- Development of standard operating procedures incorporating energy efficiency optimization.
- Refinement and implementation of preventative maintenance procedures.

Renewable Energy Utilized or Planned: Renewable energy is generated from natural sources such as sunlight, wind, and geothermal heat. Utilizing renewable energy can

generate an added revenue source through the Provincial Feed-in Tariff (FIT) Program and can significantly reduce the energy requirements of a building along with the associated greenhouse gases. At present, the Town has one facility – Udora Hall – which utilizes a geothermal heating and cooling system.

Strategic Planning

Links with other municipal plans: As an integral part of the management structure, the CDM Plan will be coordinated with the Municipality's budget planning process, preventative maintenance plans, environmental management plan, and the overall asset management plan.

Structure Planning

Consideration of energy efficiency for all projects: The Town of Georgina will incorporate life cycle cost analysis into the development of specifications and procurement for all relevant capital projects. Equipment to be considered for this process typically includes:

- HVAC equipment (e.g. boilers, chillers, pumps, motors etc.),
- Lighting and controls
- Building envelope (e.g. roofing, insulation, windows and doors etc.),
- Water use (e.g. pools, toilets, water reclaim etc.)
- BAS (building automation system) controls,
- Process improvements
- Back-up generators
- Any other energy consuming device

These types of projects typically follow 5 steps:

1. Project Identification & Feasibility: Energy Audits, Feasibility Analysis or through detailed Condition Assessments.
2. Planning & Budgeting: Project Financing, Incentives, Business Case & Approvals
3. Implementation: Tender, Project Execution, Project Management, Commissioning
4. Monitoring & Verification.
5. Reporting Achievements.

The intent is to make this Life Cycle Analysis part of the normal course of business for all facility and operational retrofits, including capital renewal and life cycle replacements projects. Success means incorporating energy efficient options at the initial stages of a project design. This ensures that options for improving energy efficiency are considered, evaluated and quantified in terms of life cycle analysis, including cost, maintenance and emission levels.

Resources Planning

Energy Leader: We will clearly designate leadership and overall responsibility for corporate energy management.

Energy Team: We will appoint employees to act as departmental energy efficiency team members.

Internal Resources: Will determine whether internal resources can be utilized for the implementation of energy projects.

External Consultants and Suppliers: We will establish criteria in our Procurement Policy based on our energy goals and objectives for the selection of external consultants and energy suppliers. These criteria will employ triple bottom line principles and ultimately include a lifecycle cost analysis of desired products and services whenever possible.

Energy Training: The Town of Georgina will develop and deliver energy training for relevant staff and Council members. This training will not be limited to operators and maintainers with "hands-on" involvement with energy consuming equipment but will also include others since they also make energy consumption decision in their daily work. Training focused on energy use and conservation opportunities associated with employee job functions will be provided. (The Town of Georgina will utilize both internal and external resources to provide this training as appropriate).

Procurement Planning

Energy Purchasing: As with the conservation of energy, the procurement of energy is equally as important. Proper energy procurement includes: rate optimization, utility account management, supplier choice and evaluation, supply reliability and quality, demand/supply optimization and risk management. The Town of Georgina will investigate energy procurement alternatives, including energy purchase contracts that appropriately address our cost considerations, available energy services, energy quality and reliability, and other performance factors. Monthly billing analysis will provide an opportunity to identify and recover any billing errors, or usage that requires further investigation.

Consideration of energy efficiency of acquired equipment: Purchasing procedures will be modified as required to incorporate energy efficiency into the criteria for selection of materials and equipment.

Implementation Planning

Building Standards: Town of Georgina staff will develop criteria for the design and/or acquisition of new buildings that include energy performance factors and that use as appropriate the principles embedded in performance standards such as LEED and the

model National Energy Code for Buildings. LEED (Leadership in Energy and Environmental Design) is a green building certification tool administered by CaBGC (Canada Green Building Council), which provides a framework for constructing green/energy efficient buildings. The LEED rating system addresses the performance of commercial and institutional buildings. Many municipalities have adopted standards such as minimum LEED Silver rating for all new municipally owned new construction projects. Considering LEED for new construction and major renovations makes good business sense, in that a high performance green building vs. conventional inefficient buildings can reduce energy consumption by 25% to 75%, water use reduction by 20% to 50% and reduced environmental greenhouse gas (GHG) emissions by as much as 60%. The Town of Georgina will investigate adopting such a standard for new buildings.

Communication Programs: Town of Georgina staff will develop a communication strategy that creates and sustains awareness of energy efficiency as a corporate priority among all employees, and conveys our commitment and progress to our stakeholders.
Activities could include circulating reminder stickers to turn lights off, putting up energy conservation displays, and promoting home energy audits.

Investment Planning

Internal Funding Sources: We will develop and/or clarify as necessary the financial indicators that are applied to investment analysis and prioritization of proposed energy projects, taking due consideration of the priority given to energy efficiency projects versus other investment needs. Energy and operating costs savings, physical asset renewal, improved employee comfort and service delivery, and enhanced environmental protection are all quantifiable benefits of energy conservation and demand management and will be factored in accordingly.

Creative Approaches: Through the annual budgeting process, Town of Georgina staff will investigate, document, and communicate funding sources for energy projects, including government and utility grants and incentives.

Implementation Planning

Business Procedures: Staff will carry out a comprehensive review of all business processes and modify them as necessary in order to incorporate energy efficiency considerations. The Town of Georgina currently incorporates depreciation of its assets as part of its annual budget process. Staff will undertake a Lifecycle Cost Analysis of potential new products and services to ensure operating costs are factored into our plans and analyses.

Projects Execution

Municipal Level: The administration and implementation of this CDM Plan will be the responsibility of the Department of Operations and Engineering. It will also be the responsibility of all municipal staff to be aware of their energy use and work towards a culture of conservation. Through staff training and web based energy management tools,

staff will be able to see the results of their efforts, and benchmark between corporate facilities and with industry standards.

Asset Level: In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although facilities staff have the lead responsibility in ensuring facilities operate efficiently, all municipal staff should be familiar with and utilize energy efficient measures where possible. The first step in implementing an energy management program is the completion of energy audits for corporate facilities. Audits involve a technical review of a facility and its operations, the development and analysis of a baseline energy profile for the facility and identification of energy management opportunities and savings. Another important component of an energy management program is re-commissioning. Over the life cycle of a facility, the mechanical building automation and distribution systems are adjusted daily to suit user room temperature requirements. Moreover, mechanical distribution or building controls instrumentation is sometimes over-looked when renovations take place. Re-commissioning involves examining the original mechanical design and operating specification against any building renovations and recalibrates the settings to suit today's energy efficient standard practices. It also ensures that mechanical operating practices are current and appropriate to maximize building system efficiencies. The use of renewable energy measures can also help reduce overall corporate greenhouse gas emissions by lessening our demand for hydrocarbon derived energy. The investment for these types of measures can be significantly greater than conservation initiatives and therefore, should be considered on a case-by-case basis through a cost and environmental benefits analysis. Use of technologies such as wind, solar and geothermal demonstrates to community leadership and help raise awareness of the benefits of utilizing renewable energy.

Review

Energy Plan Review: As part of any energy management strategy, continuous monitoring, verification, and reporting is an essential tool to track consumption and dollar savings and/or avoidance as the result of implemented initiatives.

As part of the Energy Plan, the implemented process improvements, program implementation and projects will continue to be documented and reviewed annually to update consumption savings. By regularly monitoring and reporting consumption and dollar savings to Departments, the outcomes of their participation in energy management initiatives can be demonstrated, and feedback can be obtained for any new ideas. This monitoring and reporting will also align with the requirements of Regulation 397/11 under the Green Energy Act and/or any subsequent legislation related to energy management.

Discussion of Progress: Annual energy performance summary reports will be generated to apprise Council of the progress made towards our corporate energy goals and objectives. The general public will be apprised of energy performance of municipal facilities and the impact of implemented energy management measures where appropriate.

Evaluation Progress

Energy Consumption: Staff will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis in the form of the Energy Consumption Reports that are submitted to the Ministry of Energy each year as required under *Regulation 397/11*.

Green House Gas Emissions: Governments at all levels are moving to address emissions of greenhouse gases (GHGs), in light of scientific evidence on how human activities are affecting the world's climate. For more information on the science, see http://www.ipcc.ch/. The combustion of fossil fuels in buildings is a major source of GHG emissions that fall under local government influence. Municipalities can lower emissions by improving energy efficiency of buildings and using more renewable energy. The Town of Georgina is committed to both objectives through the development and implementation of this CDM Plan. We will continue to track and report on GHGs as part of our regular reporting on energy consumption and will evaluate progress in this area against our overall reduction target.

Programs, Processes, and Projects

The following are some of the operational and capital initiatives, which the Town of Georgina has recently undertaken and/or completed (to be revised as new projects are developed and completed):

- **Georgina Ice Palace** - Replacement of ice rink dehumidification units with a centralized, single, more efficient dessicant system (2013). Reduction of humidity in the rinks during ice season allows the refrigeration system to function more efficiently, and at a reduced energy load.
- **Georgina Ice Palace** – Replacement of Canopy lights from high pressure sodium to LED (August, 2014).
- **Georgina Ice Palace and Sutton Arena** – Replacement of high-consumption (400W) metal halide light fixtures above the ice surfaces, with energy efficient (160W), longer lasting LED units. One-hundred-fifty-five fixtures were retrofitted in the winter/spring of 2014.
- **Georgina Operations Centre** – Additional attic insulation was installed, and some exterior lighting was replaced with energy reduction in mind (2013).
- **Georgina Leisure Pool** – Replacement of original dehumidification system with a higher-capacity, energy efficient unit (2013)
- **Club 55, Keswick** – Replacement of the HVAC system to a more energy efficient one (2013).
- **Kin Community Hall** – Upgrades to HVAC system (2014).
- **Kin Community Hall** – Replacement of interior hall lighting system from 400W metal halide to LED fixtures (to be completed by the end of 2014).
- **DeLaSalle Grounds** – Demolition of vacant cottages, eliminating phantom consumption and wasted energy.
- **Port Bolster Hall** – Installation of low flow efficient toilets.
- **Various facilities** – Energy audits are planned for some of the Town's higher energy consuming facilities by the end of 2014, including the Georgina Ice Palace, Leisure Pool, and Civic Centre.

- **Georgina Ice Palace, Sutton Arena, Pefferlaw Ice Pad** – re-commissioning of the refrigeration plants, including computerized monitoring and temperature control systems (September, 2014).
- **Fleet** – Installation of GPS tracking systems in Municipal vehicles to better monitor fuel consumption.
- **Sutton Arena** – Replacement of spectator seating heaters (2014).
- Asset Management Plan to be developed through Operations and Engineering.
- **Various Facilities** – Proposed installation of occupancy sensors for lighting of washroom areas and offices.
- **Town Wide** – Proposed replacement of street lighting from high-consumption to LED.
- **Town Wide** – Low efficiency motor replacement program.