



ENERGY CONSERVATION AND DEMAND MANAGEMENT PLAN



Beckwith Recreation Complex

Effective: July 1st, 2014

Liability Disclaimer

This Energy Conservation and Demand Management Plan (EECDM) has been prepared and publicly disclosed in accordance with the requirements established by the Province of Ontario in the *Green Energy Act 2009*, Ontario Regulation 397/11.

Some of the information and statements contained in this ECDM are comprised of, or are based on, assumptions, estimates, forecasts, predictions and projections made by the Corporation of the Township of Beckwith (Township). In addition, some of the information and statements are based on actions that the Township currently intends to take in the future. Circumstances will change, assumptions and estimates may prove to be wrong, events may not occur as forecasted, predicted or projected, and the Township may at a later date decide to take different actions to those it currently intends to take.

Except for any statutory liability which cannot be excluded, the Township will not be liable, whether in contract, tort (including negligence), equity or otherwise, to compensate or indemnify any person for any loss, injury or damage arising directly or indirectly from any person, using, or relying on any content of, this ECDM.

When considering the content of this ECDM, persons should take appropriate expert advice in relation to their own circumstances and must rely solely on their own judgment and expert advice obtained.

EXECUTIVE SUMMARY

This plan is designed to demonstrate municipal compliance with Ontario Regulation 397/11 made under the *Green Energy Act 2009 (GEA)*. The Energy Conservation and Demand Management Plan (ECDM) has two (2) parts:

1. A listing of the annual energy consumption and greenhouse gas emissions for each of the public facilities. The first list was due by July 1, 2013 for 2011 calendar year and is due annually thereafter; and
2. A description of measures for reducing the municipality's energy consumption. The first plan is due July 1, 2014 and is due every five (5) years thereafter.

The Corporation of the Township of Beckwith (Township) has, over the past number of years, investigated and undertaken a number of initiatives under the Energy Conservation and Demand Management Plan (ECDM). With the intention of further improving the Township's energy conservation record, and enhancing accountability to residents, the Township has developed an Energy Conservation and Demand Management Plan.

Beckwith has a proud history of managing and limiting the amount of energy the Township consumes but from an economic perspective this was only considered on a short term basis. As a rural township with limited resources and services, it was incumbent for the local taxpayer that proper fiscal constraint is demonstrated.

The Township's ECDM goal is to provide a basis for the Township to move forward on implementing improvements to its facilities and operations that reduce energy use and costs associated with energy consumption while enhancing our economic vitality. The plan goes beyond immediate cost savings and considers the Township's long term viability of the community to be a healthy, enjoyable and sustainable municipality within Eastern Ontario. Therefore, with economics as the base and a desire to maintain an enjoyable rural community in which to live, this plan will serve as an evolving plan which will result in lower energy consumption per square foot of facilities within the Township. The most important objective is the control that the Township will gain over the energy consumed during the next five (5) years.

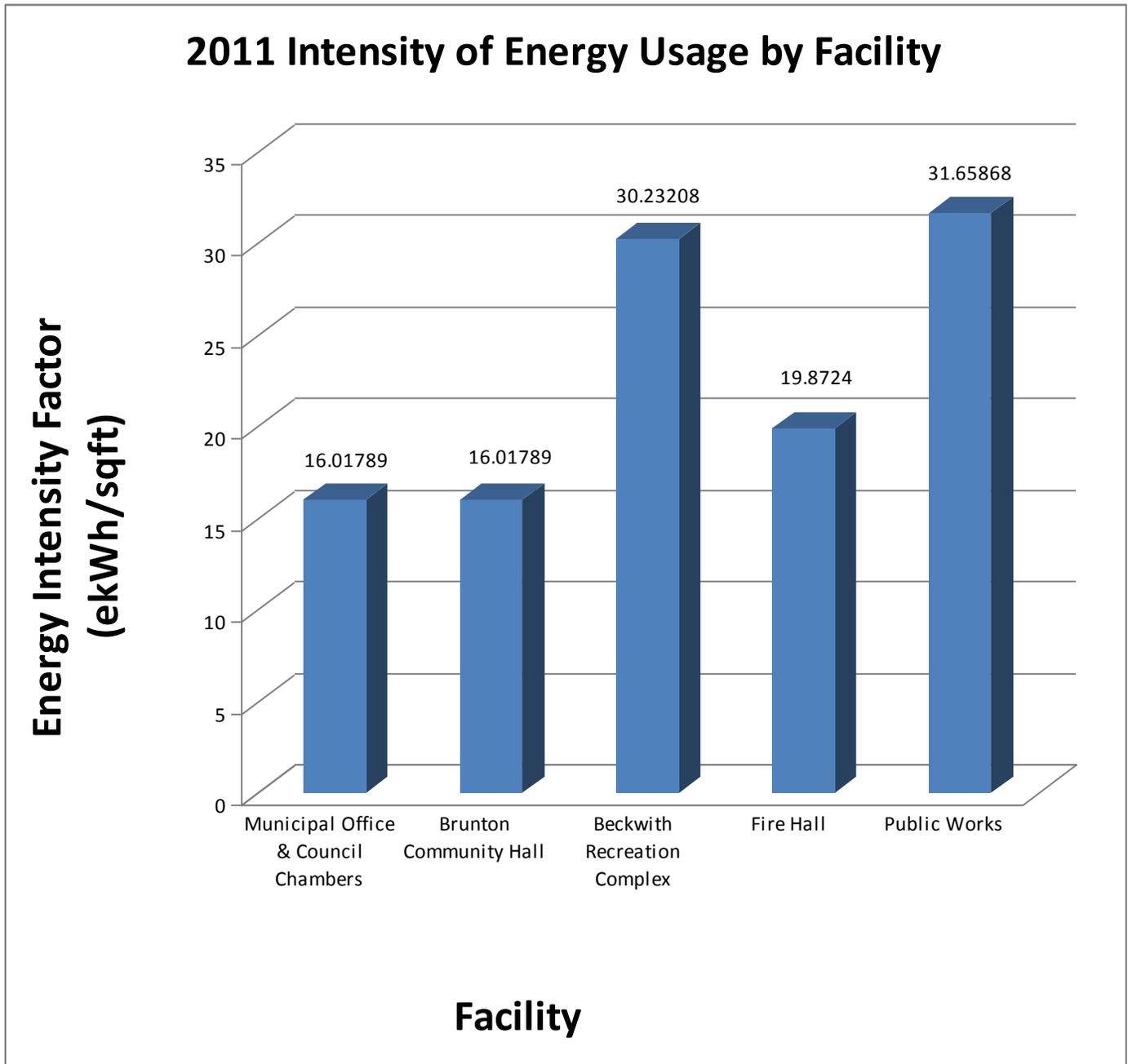
The ECDM is comprised of the following elements:

- Overview, usage and calculations from the 2011 year as the baseline of energy use;
- Mandated provincial requirements/timelines and desired local requirements/ timelines;
- Overview of the goals and strategy of the Township's Greenhouse Gas (GHG) Plan; and
- Anticipated financial benefits.

Overview

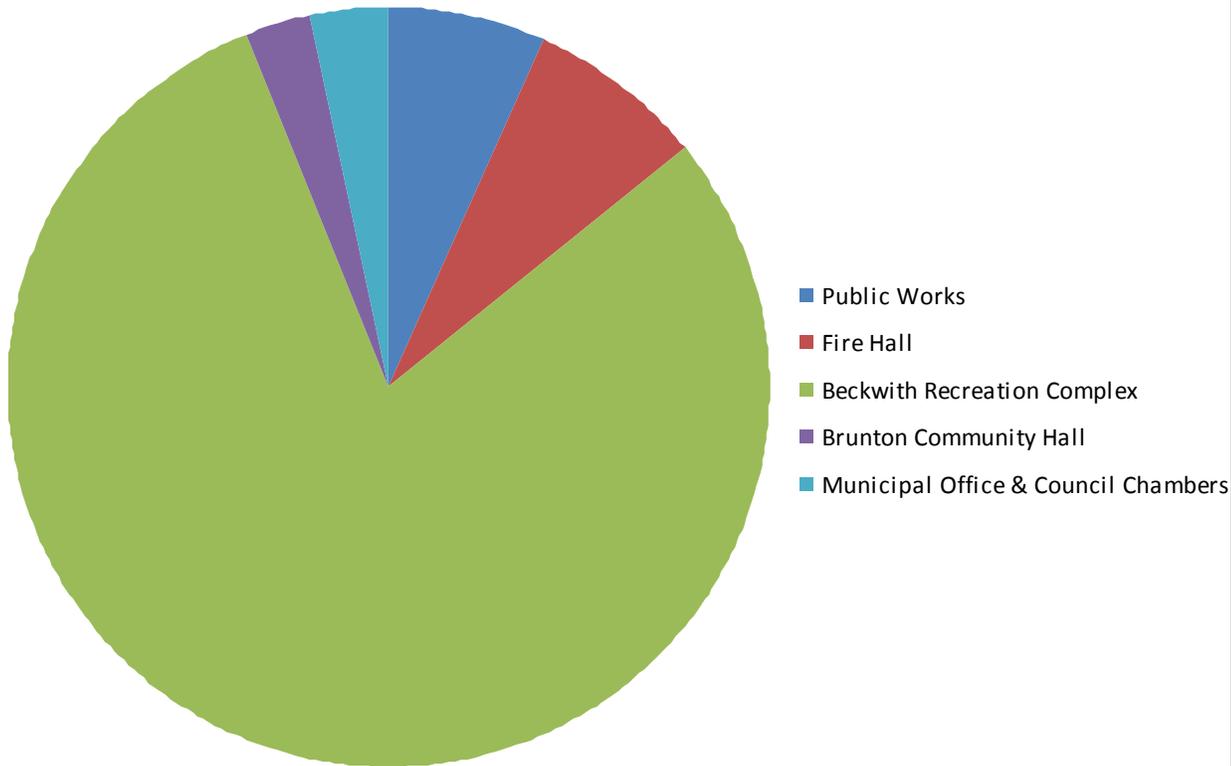
The baseline for this plan was the requirement that the energy usage for each municipality in Ontario for 2011 had to be made public by July 1, 2013. This calculation is created by considering the amount of energy that Beckwith used in the form of electricity, natural gas, propane, and heating oil at all of the facilities for the calendar year and determining the amount of carbon released from these locations. Other factors in the calculations include the number of hours each building was used per week and the square footage of the building. It is important to note that it is not an actual economic cost for use but the number of KW/hr., cubic meters used by the facility. Every single building was considered and in the case of the Municipal Building, it was divided into two (2) buildings to accurately reflect the two (2) different uses - office/council chambers and community hall.

The chart below adequately reflects that the majority of the buildings use roughly the same energy with public works being higher due to energy lost from the overhead doors that are needed to allow equipment passage and lighting retrofit upgrade. (Refer to Attachment # 1 – page 7)



In order to determine energy conservation priorities, it is important to look at the actual total energy used.

2011 Green House Gas Emissions (Kg)



By **COMPARING** both charts it is possible to have a clearer picture that conservation in the Beckwith Recreation Complex will have the biggest impact in reducing the greenhouse gases the Township emits. (Refer to Attachment # 1 – page 7)

PROVINCIAL REQUIREMENTS/TIMELINES vs TOWNSHIP REQUIREMENTS/TIMELINES

The Province of Ontario under the GEA and regulation requires public agencies, including municipalities to report annually on energy use and GHG emissions beginning July 1st, 2013 with the base year of 2011. The next step was to develop a five (5) year energy plan and make public. In Beckwith, it is recommended to post online the usage reports before the July 1st deadline. The goal is to post the 2012 usage report by July 2014, the 2013 usage report by December 2014 and post the 2014 usage report by March 2015 and every year forward. The Township recognizes that this goal is dependent on the usage report template not being changed. Reports and usage will continue to be made public online, on or before every July 1st of the next year.

OVERVIEW OF GREENHOUSE GAS GOALS AND STRATEGIES

GOALS

Beckwith has been concerned about energy costs for numerous years and the fact that these facilities are in good to excellent condition means reductions will not be dramatic. Municipalities which have water/sewage treatment plants and landfill sites may expect to see dramatic reductions to GHG. Beckwith has neither of these facilities. This does not change the fact that Beckwith will take every step to reduce local use by:

- 1) Reducing overall GHG emissions per square foot at Township facilities by 5% from 2011 to 2018; and
- 2) Reducing GHG emissions by a further 3% by 2025.

STRATEGIES

The Township will use existing resources to reduce our energy consumption and its related environmental impact. When this plan is implemented an Energy Efficiency Team will be established. This team should meet three (3) times per year. This team should be comprised with the following minimum; 1 building, 1 administration, 1 public works and 1 recreation staff member, and with an open invitation for input from Council, Fire Department and interested members of the public. This group will concentrate on energy awareness training and encouraging the basic principles of conservation which includes turn it off, turn it down, and control it.

The ECDM is to be coordinated with the Township's budget planning process, preventative maintenance plan and asset management plan. We will incorporate energy budget accountability into departmental responsibilities as well as incorporating energy efficiency into standard operating procedures and everyday job knowledge.

ANTICIPATED FINANCIAL BENEFITS

We will identify opportunities for energy conservation in our day to day management of energy in the workplace and develop and implement energy policies. Implementation of any energy conservation initiative will be subject to future budget approvals.

It is anticipated that reduction in consumption will assist in minimized tax dollars spent on energy.

ACRONYMS

Beckwith – Township of Beckwith

ECDM – Energy Conservation and Demand Management Plan

ekWh – Equivalent Kilowatt Hours

GEA – *The Green Energy Act 2009*

GHG – Greenhouse Gas

Kg – Kilograms

Sqft – Square foot

Township – The Corporation of the Township of Beckwith

Attachment #1

Energy Consumption and Greenhouse Gas Emissions Reporting - for 2011														
Type of Public Agency (Sector):	Municipal													
Agency Sub-sector	Municipality													
Organization Name	The Corporation of the Township of Beckwith													
Operation Name	Operation Type	Address	Postal Code	Total Floor Area of the Indoor Space in which Operation is Conducted		Average # Hours Per Week	Energy Type and Amount Purchased and Consumed in Natural Units					Total		
							Electricity	Natural Gas	Propane	GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)			
The Corporation of the Township of Beckwith	Administrative offices and related facilities, including municipal council chambers	1702 9th Line Beckwith	K7C 3P2	4,559.00	Square feet	53	46,724.02361	kWh	2,474.79293	Cubic meter		8,416.83222	16.01789	
The Corporation of the Township of Beckwith	Indoor recreational facilities	1702 9th Line Beckwith	K7C 3P2	3,895.00	Square feet	26	39,918.85764	kWh	2,114.34931	Cubic meter		7,190.95450	16.01789	
The Corporation of the Township of Beckwith	Indoor sports arenas	1319 9th Line Beckwith	K7C 3P2	45,560.00	Square feet	77	700,476.01159	kWh			96,279.40000	Litre	204,691.93406	30.23208
The Corporation of the Township of Beckwith	Fire stations and associated offices and facilities	1654 9th Line Beckwith	K7C 3P2	6,678.00	Square feet	14	42,060.55000	kWh	8,529.28664	Cubic meter		19,490.54361	19.87240	
The Corporation of the Township of Beckwith	Storage facilities where equipment or vehicles are maintained, repaired or stored	1644 9th Line Beckwith	K7C 3P2	3,408.00	Square feet	40	24,481.90625	kWh	7,848.38362	Cubic meter		16,796.91848	31.65868	



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ONTARIO REGULATION 397/11

made under the

GREEN ENERGY ACT, 2009

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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 greenhouse 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.

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