

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



---

## **Introduction**

In 2014 the Town of Greater Napanee implemented a five-year Energy Conservation and Demand Management (CDM) Plan pursuant to *Ontario Regulation 397/11* of the Green Energy Act.

With the repeal of the Green Energy Act, the requirements for a CDM Plan were moved to the Electricity Act, 1998. Now *Ontario Regulation 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans)* requires Broader Public Sector (BPS) organizations, such as municipalities, to develop a CDM Plan and update it every five years. Greater Napanee's updated CDM Plan, which builds on the municipality's first plan, was developed in compliance with the Regulation and covers the period 2020 to 2024.

Hard copies of the updated plan are available at the Town Hall (124 John St.) and the document is also posted on the municipal website at [www.greaternapanee.com](http://www.greaternapanee.com).

## **Declaration of Commitment**

Council supports this energy conservation initiative for a several reasons. Energy planning will help avoid cost increases, improve service delivery and support local development while protecting human health and the environment. The updated CDM plan was approved by the Greater Napanee Town Council on June 25, 2019.

## ***Council RESOLUTION # 363/19: Norrie & McCormack (June 25, 2019)***

That the Council of the Town of Greater Napanee accept and approve the CAO Department - Energy Conservation and Demand Management (CDM) Plan - 2019 Update report and the attached plan as presented. CARRIED.

## **Vision:**

The Town of Greater Napanee will strive to continually reduce our total energy consumption and associated greenhouse gases (GHGs) through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service for our clients and the general public. This will involve a

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



collaborative effort to increase the education, awareness and understanding of energy management within the municipality. Total energy consumption includes electricity, natural gas and oil. This vision can be achieved through the integration of energy efficiency facility infrastructure, operational efficiencies and building the foundation for a culture of energy awareness and knowledge within the municipality. While commitment from Council and Senior Management is crucial, everyone has a role in the wise use of energy and demonstrate leadership within corporate facilities and operations.

## Policy:

The Town of Greater Napanee will continue to incorporate energy efficiency into all areas of our activity including organizational and human resources management procedures, procurement practices, financial management and facility operations and maintenance. As a major component of the operating costs of municipal facilities and equipment, energy costs will factor into policies of the municipality.

With the CDM Plan, all corporate departments will have a roadmap and a forum to ensure energy management is a consideration in all operations and facility-based decisions. Staff awareness is critical to move the municipality towards a goal of reducing energy consumption and GHG emissions.

## Goals:

The Town of Greater Napanee's CDM Plan was completed to help achieve the following goals:

- (1) Maximize fiscal resources and avoid cost increases through direct and indirect energy savings;
- (2) Reduce the environmental impact of the municipality's operations;
- (3) Increase the comfort and safety of staff and patrons of the municipality's facilities;
- (4) To create a culture of conservation within the municipality; and
- (5) To improve the reliability of the municipality's equipment and reduce maintenance.

## Objectives:

Our primary energy conservation objectives pursuant to the updated CDM Plan include:

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



- (1) Reducing our overall energy consumption by 5%;
- (2) Reducing water consumption in all our municipal buildings by 5%;
- (3) Completing energy saving measures identified as part of facility energy audits;  
and
- (4) Taking advantage of all available resources and funding incentives

## **Energy Conservation Measures**

### **Completed Measures**

Major projects completed to date include the following:

- Our HPS/MV streetlight network was converted to LED fixtures.
- Floating head pressure controls installed at our twin ice pad facility, the Strathcona Paper Centre (SPC)
- Lighting above the ice pads at the SPC upgraded to LED
- High lift pumps and SCADA upgrades at the municipal water treatment plant
- Building Energy Audits were completed on the Town Hall, 12 Market Square and the former North Fredericksburgh Hall
- Town Hall - New A/C system was installed on the main floor level
- Town Hall – Additional insulation in the attic space and fan decommissioned
- Fire Hall – LED lighting in the apparatus bays and upgrading building façade

### **Proposed Measures**

While the municipality met its conservation objectives from the 2014 Plan, we recognize additional measures can take place to ensure savings continue. Energy conservation projects can be categorized as technical, organizational or behavioral.

#### **Technical**

- North Fredericksburgh Hall
  - Evaluate converting heating and air conditioning systems  
(Cost and anticipated payback to be determined)

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



- Replace lighting and exit signs with LED fixtures
- Install programable thermostats with temperature set lockout
- Take measures to reduce air leakage through building envelope  
(Cost: \$5,000. Payback: Less than 5 Years)
- 12 Market Square
  - Replace lighting with LED fixtures
  - Insulate basement walls with R12
  - Insulate the balance of the exterior walls above the dropped ceiling  
(Cost: \$10,000. Payback: Less than 5 Years)
- Town Hall
  - Evaluate converting the 2<sup>nd</sup> floor level heating system to more efficient system  
(Cost and anticipated payback to be determined)
  - Install programable thermostats with temperature set lockout
  - Replace lighting with LED fixtures
  - Take measures to reduce air leakage through building envelope  
(Cost: \$5,000. Payback: Less than 5 Years)

## Organizational

- Incorporate life cycle costing when purchasing building systems such as lighting, office equipment and paper.
- Install programable thermostats with temperature set lockout on all municipal buildings
- Initiate a building maintenance program whereby water efficient plumbing fixtures are installed when repairs/replacement is required  
(Cost is negligible given work is completed as part of regular maintenance program)

## Behavioural

- Review building automation systems on a regular basis to ensure temperature and lighting settings are where they are supposed to be.
- Encourage staff to lower window shades in the summer to keep heat out and raise them in the winter to let heat in  
(Cost is negligible given it forms part of regular operations)

It is recognized that the implementation of proposed projects depends on several factors including:

- Budgetary constraints and funding allocated by Council;
- Internal revolving funds by reinvesting savings from previous conservation

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



- projects; and
- Availability of Independent Electricity System Operator (IESO) incentives.

## **Organizational Understanding**

### **Our Municipal Needs:**

The Town of Greater Napanee requires reliable, low cost, sustainable energy sources delivering energy to the most efficient facilities and energy consuming technology feasible. We are now paying colossal prices compared to what costs were at the turn of the century. To stay within municipal budgets, we have no choice but to curb our energy usage.

### **Stakeholder Needs:**

Internal stakeholders (Council, Committees of Council, CAO, staff) need to:

- (a) Clearly communicate the corporate commitment to energy efficiency and to develop the skills and knowledge required to implement energy management practices and measures.
- (b) Implement regular reports and information to maintain awareness of energy use.
- (c) Ensure training and support is provided so as to implement energy management

best practices and measures.

External stakeholders (the Province, Greater Napanee citizens, community groups) expect the municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services.

### **Municipal Energy Situation:**

An assessment of the organizational structure and current practices suggests the following:

Energy use and costs continue to rise and are forecast to increase further. Data relating to energy consumption and costs need to be more prominent to municipal decision makers such as Council and Senior Management. This is imperative to identify opportunities for efficiency. Increased efforts must be made to raise general staff awareness about energy.

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



The requirement for a CDM Plan provides an opportunity to build upon current initiatives such as the Official Plan, Downtown Revitalization and Asset Management.

## **Tracking Energy Consumption and Savings:**

The Director of Operational Audits has been designated as the energy leader with overall responsibility for corporate energy management.

Cost management is a responsibility of the management team by way of budgeting. Data is received via supplier invoices and reviewed prior to authorization for payment. The Payroll and Special Projects Clerk maintains an Excel spreadsheet which tracks both energy consumption and energy costs for each municipal facility. This data forms the basis of our Energy Consumption and GHG annual report to the Ministry of Energy, Northern Development and Mines pursuant to Ontario Regulation 507/18. Consumption trends are analyzed, and deviations are immediately noted and acted upon.

Our municipal energy is supplied by several providers:

- Electricity is supplied by Hydro One
- Natural Gas is supplied by Union Gas
- Furnace oil and propane is provided by local suppliers

## **Summary of Current Energy Consumption, Cost and Green House Gas**

Attached as Schedule “A” is the Energy Consumption and Greenhouse Gas Emissions Report for the 2017 operational year. This document was submitted to the Ministry of Energy, Northern Development and Mines prior to July 1, 2019, as mandated. The report is available on the Town website, [www.greaternapanee.com](http://www.greaternapanee.com), and by hard copy at the Town Hall.

## **Renewable Energy Utilized or Planned:**

Renewable energy is energy which comes from natural sources such as sunlight, wind and geothermal heat. Utilizing renewable energy can significantly reduce the energy requirements of a building along with the associated greenhouses gases.

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



The Town of Greater Napanee will investigate the potential to develop solar photovoltaic systems on the rooftops of existing corporate facilities and consider "solar ready" design with new buildings.

## **Strategic Planning**

### Links with other municipal plans:

The Town of Greater Napanee will develop and implement energy policies, organize for energy management, develop the required skills and knowledge, manage energy information, communicate with our stakeholders and invest in energy management measures. As an integral component of the management structure, the CDM Plan is to be coordinated with the municipality's budget planning, strategic plan, purchasing policy, and the policy development process.

### Structure Planning:

#### Staffing requirements and duties:

The Town of Greater Napanee will incorporate energy budget accountability into our corporate responsibilities. We will also include energy efficiency into standard operating procedures and the knowledge requirement for operational jobs. All staff members will be made aware of our energy conservation efforts and why they are important. Staff will be updated on the results of energy audits and suggestions on how to improve are encouraged and will be considered

#### Consideration of energy efficiency for all projects:

The Town of Greater Napanee will have regard to life cycle cost analysis with design procedures for all capital projects. Typically, equipment to be considered for this includes:

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

## **Energy Management Training**

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



The Town of Greater Napanee will support energy management training for relevant staff and members of Council. Training focused on the energy use and conservation opportunities associated with employees' job functions will be utilized whenever possible. Training will be incorporated into employee orientation and integrated into ongoing staff training.

## **Procurement Planning**

Energy purchasing:

In addition to energy conservation, the procurement of energy is equally as important. A successful energy procurement process includes the following:

- rate optimization;
- supplier choice and evaluation;
- supply reliability and quality.

The Town of Greater Napanee will be mindful of these considerations when purchasing energy.

Consideration of energy efficiency of acquired equipment:

Our purchasing procedures will incorporate energy efficiency into the criteria for selection of materials and equipment.

## **Implementation Planning**

Building Standards:

The Town of Greater Napanee will have regard to energy efficiency with the design and/or acquisition of new buildings and when undertaking major renovations of Town owned facilities.

Communication Program:

Greater Napanee staff will develop an internal 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 reminders to turn off the lights, putting up energy conservation displays, hosting lunch and learns and including posts on social media.

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



## **Investment Planning**

We will develop and/or clarify as necessary the financial indicators that are applied to investment analysis and prioritization of proposed energy projects. Energy and operating costs savings, physical asset renewal, improving employee comfort and service delivery are all quantifiable benefits of energy conservation and demand management and will be factored accordingly. Municipal staff will investigate, document and communicate funding sources for energy projects, including government and utility grants and incentives.

## **Project Execution**

### Municipal Level:

The administration and implementation of this CDM Plan will be the responsibility of the Director of Operational Audits. Since all facilities and municipal operations use energy in our daily activities, it will be the responsibility of all municipal staff to be aware of their energy use and work towards a culture of conservation. Through training and the sharing of information, staff will be able to see the results of their efforts.

### Asset Level:

In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness of what measures they can take to help. Although facilities staff have the lead responsibility in ensuring facilities operate efficiently, all staff should be familiar with and utilize energy efficiency measures where possible.

Energy 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. The completion of energy audits of corporate facilities shall continue in the future.

Greater Napanee staff should be made aware of the energy audits and their results. All staff members will then have the opportunity to submit recommendations in terms of improving our efficiencies. Therefore, it is imperative to ensure everyone understands the benefits of energy conservation. We must remind ourselves that every little bit helps and can make a difference.

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



## **Review**

### CDM Plan Review:

As part of our energy management strategy, continuous monitoring, verification and reporting is an essential tool to track consumption and dollar savings and/or avoidance as a result of implemented initiatives. Greater Napanee staff will develop an annual progress report with energy consumption data and initiatives undertaken within the calendar year. Staff will ensure Council is kept informed on progress as part of the Service Area Updates within Council agendas.

By regularly monitoring and reporting consumption and dollar savings and/or avoidance to municipal departments, the outcomes of staff participation in energy management initiatives can be demonstrated and feedback can be obtained for any new ideas.

Energy performance summary reports will be generated to apprise Council of the progress made towards our corporate energy goals and objectives.

## **Evaluation Progress**

### Energy Consumption:

We will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis as required on the Energy Consumption Reports that are submitted to the Ministry of Energy, Northern Development and Mines, pursuant to Ontario Regulation 507/18.

### Green House Gas Emissions:

The Town of Greater Napanee is committed to tracking our GHG emissions by utilizing the Energy Planning Tool (EPT) software program. By improving the energy efficiency of our buildings and operations through the development of an CDM Plan, we are targeting a reduction of GHG emissions.

## **Attachments:**

[Schedule A](#) - Energy Consumption and Greenhouse Gas Emissions Report for the 2017 operational year.

# Town of Greater Napanee Energy Conservation and Demand Management Plan – 2019 Update



[Schedule B](#) – Energy Consumption Spreadsheet – Municipal Buildings 2012 versus 2017