



# Energy Conservation and Demand Management Plan

## Township of Perry: 2014 to 2019

### 1. Commitment

#### **Declaration of Commitment**

The Township of Perry will allocate the necessary resources to develop and implement an Energy Conservation and Demand Management Plan as required under Regulation 397/11 of the Green Energy Act. Staff and council will ensure that the objectives presented in this plan are achieved and that progress towards those objectives is 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 Township of Perry 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 the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the Township. Total energy consumption includes electricity, natural gas, and oil. Everyone has a role in the wise use of energy and to showcase appropriate leadership within municipal facilities and operation.

#### **Goals**

The Township of Perry Energy Conservation and Demand Management Plan has been completed to help achieve the following goals:

- Maximize fiscal resources and avoid cost increases through direct and indirect energy savings
- Reduce the environmental impact of the Township's operations
- To create a culture of conservation within the Township

#### **Overall Target**

The Corporation of the Township of Perry will reduce overall municipal energy consumption by 5% from 2014 to 2019.

#### **Objectives**

In order to meet the strategic goals of the Energy Conservation and Demand Management Plan, there are a number of goals and objectives that align with its development and implementation:

- Ensure energy efficiency consistency across municipal facilities
- Monitor and report on energy consumption in annual intervals
- Better analyze energy costs and look for savings opportunities. This will include looking at energy commodity procurement options and taking advantage of all available resources and funding for energy projects
- Raise staff and Council awareness around energy efficiency
- Identify and investigate renewable energy generation opportunities

#### **Timeline**

The Township of Perry's energy conservation and demand management measures will be in place for the next five years at the very least. Following that time, a renewed plan will be required in order to meet future needs.

#### **Approval**

This plan has been formulated with the input of Township of Perry senior management staff and has been approved by Township administration as per Regulation 397/11.

## **Publication**

This plan will be made available electronically to the public on the municipal website and in hardcopy at the Township of Perry Municipal Office.

## **2. Organizational Understanding**

### **Energy Needs**

The Township of Perry requires reliable, low-cost, sustainable energy sources delivering energy to the most efficient facilities and energy-consuming technology feasible.

### **Summary of Current Energy Consumption, Cost and Greenhouse Gases (2012)**

Annual energy consumption: 204,896 kWh

Natural gas consumption: 8,359.29 m<sup>3</sup>

Cost: \$41,052.98 in electricity, \$3,423.75 in natural gas

Greenhouse Gas Emissions (CO<sub>2</sub>): 35,482.5133 kg

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

The Township of Perry will aspire to investigate and show leadership in the promotion and development of renewable energy systems that are compatible with the Township's Asset Management Plan and land use planning objectives. The Township of Perry will investigate the potential of developing solar photovoltaic systems on the rooftops of municipal facilities that could benefit from such a retrofit. The Township will also continue to pursue the development of a small hydro-electricity facility in the area of Brook's Falls.

## **3. Resources Planning**

### **Energy Leader**

The Deputy Clerk will be designated as our energy leader with overall responsibility for Township energy management.

## **4. Projects Execution**

### **Municipal Level**

The Township of Perry will carry out the required development of business procedures, communication programs and implement them methodically according to the planned time lines within the resource constraints that apply. The administration and implementation of this plan will be the responsibility of the Deputy Clerk, the Manager of Public Works and Facilities and the Treasurer. It will be the responsibility of all Township staff to be aware of their energy use and work towards conservation. Through staff engagement and energy management processes, staff will be able to see the results of their efforts, and benchmark between corporate facilities and with industry standards.

### **Asset Level**

The Township of Perry will use department employees to facilitate the implementation of procedures and communication initiatives, including energy performance reporting. In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although management staff have the lead responsibility in ensuring Township facilities operate efficiently, all Township staff should be familiar with and utilize energy efficient measures where possible. In addition, any facilities requiring rehabilitation, renewal and/or replacement will incorporate energy saving strategies where possible.

## **5. Review**

### **Plan Review**

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

### **Reports**

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.

## **6. Evaluation Progress**

### **Energy Consumption**

The Township will continue to track and report on energy consumption as part of our regular reporting on energy consumption. Annual data will be compared to that of previous years in order to determine the efficacy of the Energy Conservation and Demand Management Plan.

### **Green House Gas Emissions**

The Township 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.

## 7. Energy Consumption and GHG Emissions (From 2012/1/1 to 2012/12/31)

| Facility Name                                  | Address                | Total Area (m3) | Hours per week | Fuel Types  | Consumption | Cost                | GHG Emissions (kg) | Energy Intensity (ekWh/sqft) |
|--|------------------------|-----------------|----------------|-------------|-------------|---------------------|--------------------|------------------------------|
| <b>Facility Primary Type: Office</b>           |                        |                 |                |             |             |                     |                    |                              |
| Administration Office                          | 1695 Emsdale Rd        | 480             | 40             | Electricity | 98453 kWh   | \$ 7,191.04         | 9455.4260          | 19.05522                     |
|  |                        |                 |                | propane     | 6150.21 l   | \$ 2,570.16         | 9160.4824          |                              |
| <b>Facility Type Total:</b>                    |                        |                 |                |             |             | \$ 9,761.20         | 18615.9084         | 19.05522                     |
| <b>Facility Primary Type: Fire</b>             |                        |                 |                |             |             |                     |                    |                              |
| Emsdale Fire Hall                              | 16 Ellen St            | 275             | 14             | Electricity | 8453 kWh    | \$ 1,445.06         | 811.8261           | 2.85565                      |
|  |                        |                 |                | Furnace Oil | 2258.2 l    | \$ 2,454.42         | 6118.1516          |                              |
| Novar Fire Hall                                | 50 McCrandle St        | 257             | 14             | Electricity | 11117 kWh   | \$ 1,888.04         | 5191.0020          | 12.39737                     |
|  |                        |                 |                | Natural Gas | 2180.93 m3  | \$ 1,012.92         |                    |                              |
| <b>Facility Type Total:</b>                    |                        |                 |                |             |             | \$ 6,800.44         | 12120.9797         | 15.25302                     |
| <b>Facility Primary Type: Community Centre</b> |                        |                 |                |             |             |                     |                    |                              |
| Emsdale Community Centre                       | 32 Joseph St           | 286             | 20             | Electricity | 13208 kWh   | \$ 1,888.89         | 1268.4960          | 4.29040                      |
|  |                        |                 |                | Propane     | 1188.02 l   | \$ 614.26           | 1769.5065          |                              |
|  |                        |                 |                | Furnace Oil | 3226.8 l    | \$ 3,526.92         | 8742.3841          |                              |
| Perry Public Library                           | 29 Joseph St           | 146             |                | Electricity | 8805 kWh    | \$ 1,258.96         | 845.6322           | 5.60277                      |
|  |                        |                 |                | Furnace Oil | 1900.32 l   | \$ 2,078.76         | 5148.5457          |                              |
| Novar Community Centre                         | 25 Laurie St           | 285             | 20             | Electricity | 10782 kWh   | \$ 1,752.66         | 12716.4800         | 24.91875                     |
|  |                        |                 |                | Natural Gas | 6178.36 m3  | \$ 1,951.54         |                    |                              |
| <b>Facility Type Total:</b>                    |                        |                 |                |             |             | \$ 13,071.99        | 30491.0445         | 34.81192                     |
| <b>Facility Primary Type: Public Works</b>     |                        |                 |                |             |             |                     |                    |                              |
| Works Shed                                     | 80 Old Government Road | 4900            | 40             | Electricity | 32281 kWh   | \$ 4,465.56         | 3100.2670          | 0.61204                      |
|  |                        |                 |                | Propane     | 5327.1 l    | \$ 2,893.68         | 7934.4943          |                              |
| Transfer Station                               | 775 Hwy 592            | 309             | 40             | Electricity | 21797 kWh   | \$ 3,121.87         | 2093.3840          | 6.55337                      |
| <b>Facility Type Total:</b>                    |                        |                 |                |             |             | \$ 10,481.11        | 13128.1453         | 7.16541                      |
| <b>GRAND TOTAL:</b>                            |                        |                 |                |             |             | <b>\$ 40,114.74</b> | <b>74356.0779</b>  | <b>76.28557</b>              |

## 8. Programs

| Description   | Facility       | Contact        | Date      | Status |
|---|----------------|----------------|-----------|--------|
| <b>Energy Awareness at Management Meetings</b>  | All facilities | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Add energy awareness to management meetings. This will provide a platform to discuss topics like the current costs of energy consumption, future implications of current useage, areas for improvement and ways to reduce energy use.   |                |                |           |        |
| <b>Employee Participation Program</b>   | All facilities | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Invite employees from all departments of the Township to recommend ideas to reduce energy use in their departments.   |                |                |           |        |
| <b>Energy Accounting</b>  | All facilities | Jane McPherson | 01-Jul-14 | Active |
| Details - Quarterly utility usage and costs should be monitired to identify trends and emphasize anomalies to better predict future useage requirements.  |                |                |           |        |
| <b>Efficiency Standards</b>   | All facilities | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Standards of performance will be developed to identify and implement temperature regulations for each building for the following - indoor temperature for accupied space indoor temperature for unoccupied space; desirable hot water tank temperature; maximum light levels for occupied space |                |                |           |        |
| <b>Energy Efficiency Purchases Standards</b>  | All facilities | Dave Creasor   | 01-Jul-14 | Active |
| Details - All potential asset purchases will be subject to energy use evaluations to determine the energy consumption of the potential purchsae. In the decision making process, preference will be given to assets that use less kWh or are Energy Star rated.   |                |                |           |        |
| <b>After hours Lights Out</b>   | All facilities | Brian Gilmer   | 01-Jul-14 | Active |
| Details - The Township will adopt a strategy to ensure that lighting is turned off during periods where facilities are not in use after hours. Staff who use the facilities after hours will be advised to keep only the areas of occupation lit after hours.   |                |                |           |        |
| <b>Lunch &amp; Learn</b>  | All facilities | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Host annual lunch meeting for key staff and management to learn more about energy savings and available programs.   |                |                |           |        |

## 9. Processes

| Description  | Facility         | Contact        | Date      | Status |
|--|------------------|----------------|-----------|--------|
| <b>Enhance Building Envelopes</b>  | All facilities   | Dave Creasor   | 01-Jul-14 | Active |
| Details - Energy consumption at each municipal facility will be closely inspected. Municipal buildings that are identified as critical in terms of heating and cooling energy consumption will be re caulked, weather stripped, and insulated to reduce air leakage. An estimated 5% of energy will be saved per building. |                  |                |           |        |
| <b>Annual Energy Reports</b>   | All facilities   | Jane McPherson | 01-Jul-14 | Active |
| Details - Energy reports will be produced annually for management review and reduction analysis using the L.A.S. E.P.T. online software  |                  |                |           |        |
| <b>Possible Vending Machine Retrofit</b>   | Municipal Office | Dave Creasor   | 01-Jul-14 | Active |
| Details - The vending machines at the Municipal Office will be properly inspected to ensure they are energy efficient. If they are found to be of poor energy efficiency, alternatives such as new machines or timers will be utilized.  |                  |                |           |        |
| <b>Energy Organization</b>   | All facilities   | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Staff will look into joining an energy conservation organization to bring new energy planning ideas and trends to Management and Council meetings.   |                  |                |           |        |
| <b>Energy Planning at Management Meetings</b>  | All facilities   | Brian Gilmer   | 01-Jul-14 | Active |
| Details - Energy planning will be added to discussions at Manager Meetings to reduce consumption and increase cost savings.  |                  |                |           |        |

## 10. Projects

The following list highlights many options to increase energy efficiency for municipal facilities but **does not** represent all current or proposed projects. Major projects and/or renovations will of course still be subject to Council approval and budget considerations.

| Description  | Facility       | Contact      | Date      | Status |
|--|----------------|--------------|-----------|--------|
| <b>Enhance Building Envelopes</b>  | All facilities | Dave Creasor | 01-Jul-14 | Active |
| Details - Energy consumption at each municipal facility will be closely inspected. Municipal buildings that are identified as critical in terms of heating and cooling energy consumption will be re caulked, weather stripped, and insulated to reduce air leakage. An estimated 5% of energy will be saved per building. |                |              |           |        |
| <b>Efficient Lighting</b>  | All facilities | Dave Creasor | 01-Jul-14 | Active |
| Details - Where feasible, the use of energy efficient lighting will be considered. Occupancy sensors could also be installed in low volume areas to control lighting conditions. An estimated 5% of energy will be saved per building.   |                |              |           |        |
| <b>Programmable Thermostats</b>  | All facilities | Dave Creasor | 01-Jul-14 | Active |
| Details - Where feasible, the use of programmable thermostats to replace those of the analog variety will allow the Township to better control energy during peak periods. An estimated 5% of energy will be saved per building.   |                |              |           |        |