

# Township of Billings

## Energy Conservation and Demand Management Plan Update

### 2020-2024



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# Township of Billings

## Energy Conservation and Demand Management (CDM) Plan Update: 2020-2024

### Introduction

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. Our updated CDM plan was developed in compliance with the regulation and covers the period from 2020 to 2024. The plan was approved by council on June 17, 2019.

The plan describes our municipality's:

- New energy conservation goals and objectives;
- Current and proposed energy conservation measures;
- Results from the first CDM plan; and
- Changes made from the previous plan to help achieve the new goals and objectives.

Our updated CDM plan builds on the municipality's first plan developed in 2014 and the experience gained in energy conservation over the last 5 years.

In addition to energy conservation, the updated CDM plan will support our strategic plan, asset management plan and community energy and emissions plan (CEEP).

Hard copies of the plan are available at the Billings municipal office located at 15 Old Mill Road, Kagawong.

### Goals and Objectives for Conserving Energy

The Township of Billings is committed to energy conservation both at work and at home. Our goal is to lead by example and encourage our residents and businesses in their efforts to reduce their own energy consumption.

Our energy conservation objectives include:

- Reducing our overall energy consumption by 10% over 2017 by 2024;
- Reducing water consumption in our buildings by 10% over 2020 by 2024; and
- Integrating this energy conservation plan with our strategic, asset management and community energy and emissions plans.

### Tracking Energy Consumption and Savings

Annual energy reporting is required under the regulation and allows our municipality to understand how energy is used in our buildings, identify potential energy conservation opportunities and track progress on energy conservation efforts. The township's 2017 annual energy report, along with previous years' annual energy reports and the 2014 energy conservation and demand management plan, can be found on our website (<http://billingstwp.ca/product/public-documents/>). Overall greenhouse gas emissions

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across all municipal buildings reported on was reduced by 34% from 2013 levels by 2017. Visual representations of the reported data from 2011 to 2017 are shown in Schedule 1.

The greatest reductions were achieved at the water treatment plant, which saw reductions of 41% in amount of water treated, 47% in electricity consumed and 88% in greenhouse gas emissions from 2013 levels by 2017. This is largely due to the extensive retrofit of the facility completed between 2014 and 2017, and improved detection and repair of leaks in the distribution system.

In addition to the municipality benefitting from reducing its energy use, residents and local businesses also benefit from more efficient use of tax payer dollars and better maintained/operated public buildings and facilities.

#### Changes from Previous Plan to Achieve our Goals and Objectives

While the municipality greatly exceeded its conservation objectives from the 2014 plan, we recognize other measures could take place to ensure savings continue and that new conservation measures are identified and acted upon. Our key changes to ensure the success of our updated plan include hiring a Climate Change Coordinator to lead and develop a Community Energy and Emissions Plan and to help ensure our asset management policies are aligned with our energy conservation goals. Additionally, we will ensure staff are trained on energy conservation best practices for building operations.

The CDM plan will be reviewed by the Go Green Committee on an annual basis to review the results of the proposed measures and determine if adjustments to the plan are required. Initiatives may be added to the plan and objectives adjusted as new opportunities are identified. Updates to the plan will be posted on our website.

#### Current and Proposed Energy Conservation Measures

##### Current Measures Include:

The municipality is currently replacing fluorescent and incandescent lights in all buildings with LED lights and occupancy sensors as funding becomes available or as they require replacement. LEDs consume a fraction of the energy of fluorescent and incandescent lights and require less frequent maintenance. We are targeting our highest-use facilities first for lighting retrofits (*e.g.*, the Park Centre and 15 Old Mill). In addition, the township prioritizes energy ratings when replacing equipment such as furnaces, stoves, *etc.*

The facility with the single greatest energy consumption is the water treatment plant. To help address this from a cost perspective, the plant now treats water at night to take advantage of time-of-use pricing. Moving forward, the greatest gains in reducing greenhouse gas emissions from this facility will be seen by reducing the amount of water the plant needs to produce through water conservation measures. This will require a community effort and will be included as part of the CEEP.

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#### Selecting Proposed Measures:

Energy conservation projects can be categorized as technical (switching lighting to LED), organizational (establishing the Go Green Committee), or behavioral (keeping the thermostat set lower in the winter and higher in the summer, running a daylight harvesting campaign where lights are turned off on sunny days). Potential energy conservation projects were identified by a facility-by-facility energy assessment conducted by Green Economy North. Now that some of those actions have been undertaken, the township would like to repeat this assessment and identify additional areas for improvement, particularly measures for water conservation.

Energy and/or water conservation projects will be evaluated against priorities established in the township's strategic plan, CEEP, and asset management plan, along with a simple return-on-investment analysis (the number of years it would take to pay off the project from the savings).

Implementation of the proposed projects depends on:

- Funding allocated by council;
- Incentives from the Independent Electricity System Operator (IESO) and other provincial or federal government programs;
- Availability of qualified staff; and
- Retaining a qualified contractor to implement the initiative.

Progress on projects will be monitored using the annual energy reports prepared under the regulation.

#### Technical Measures:

- Replacing lighting and heating, ventilation and air conditioning (HVAC) in all municipal facilities as required, or as funding opportunities arise, with more energy efficient equipment;
- Replace all restroom fixtures with WaterSense certified low flow products as required, or as funding opportunities arise;
- Evaluate the township's fleet (light duty trucks) to determine which vehicles are suitable for replacement with electric or hybrid vehicles (EV). Implement replacement initiative based on vehicles that require replacement and provide the best return first.
- *Costs and savings estimates for these measures will be determined on a project-by-project basis as part of the decision-making process at the time of implementation.*

#### Organizational Measures:

- Incorporate life cycle costing when purchasing is related to building systems, such as lighting, office equipment and paper. Life cycle analysis looks at the overall cost of purchasing, operating and disposing of a product;
- Monitor new and existing plumbing fixtures for leaks and repair as required;
- Continue working with Green Economy North, ReThink Green and the Go Green Committee to identify additional conservation measures;

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- Work with other broader public sector organizations in the community to develop relationships that foster energy conservation;
- *Costs for these measures are negligible, savings cannot be estimated at this time but would largely be immediate upon implementation.*

#### Behavioural Measures:

- Encourage staff and facility users to dress seasonably and set heating/cooling systems to a reasonable ambient temperature;
- Review thermostats and occupancy sensors frequently to ensure temperature and lighting settings are where they are supposed to be;
- Encourage staff to lower shades in the summer to keep heat out and raise them in the winter to let heat in;
- *Costs for these measures are negligible, savings cannot be estimated at this time but would be immediate upon implementation*

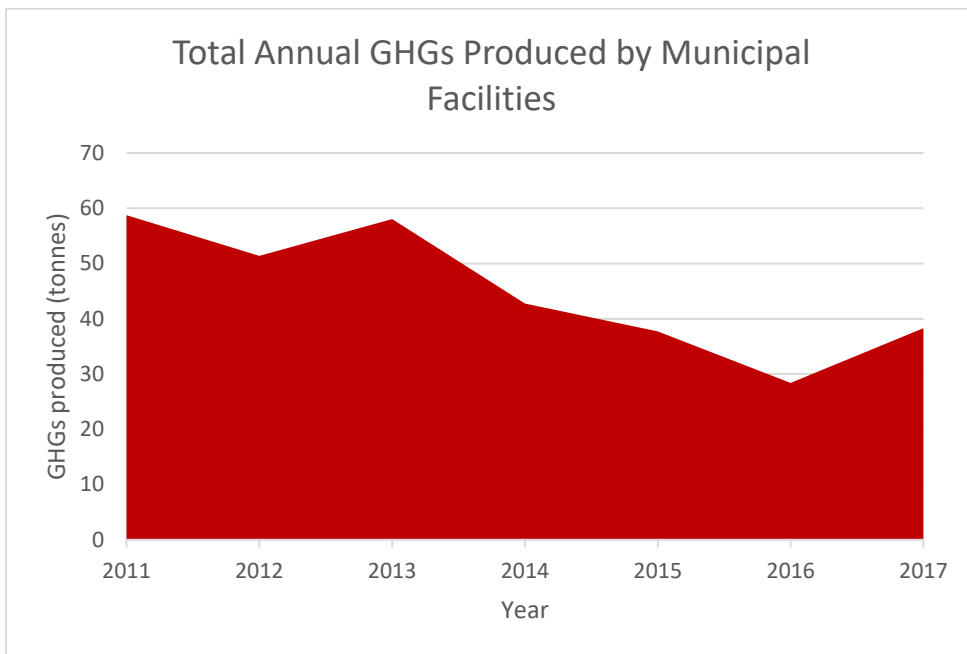
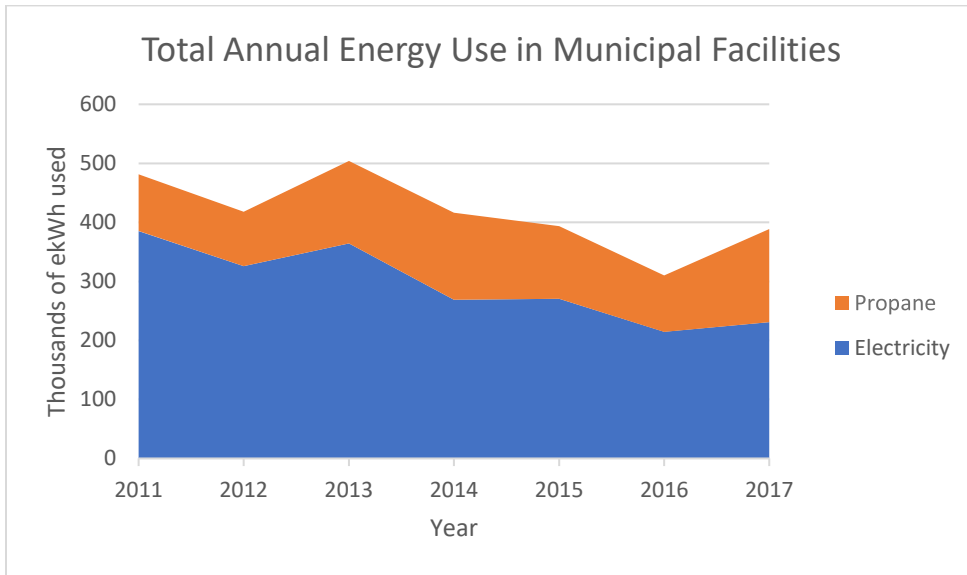
#### Renewable Energy Projects

A ground-source heat pump was installed at the Park Centre to reduce reliance on fossil fuels for heating and demand for electricity for air conditioning. The heat pump cost \$80,000 to install and while it undoubtedly saves considerable money each year compared to conventional heating and cooling, it was installed prior to when the township started reporting on energy consumption.

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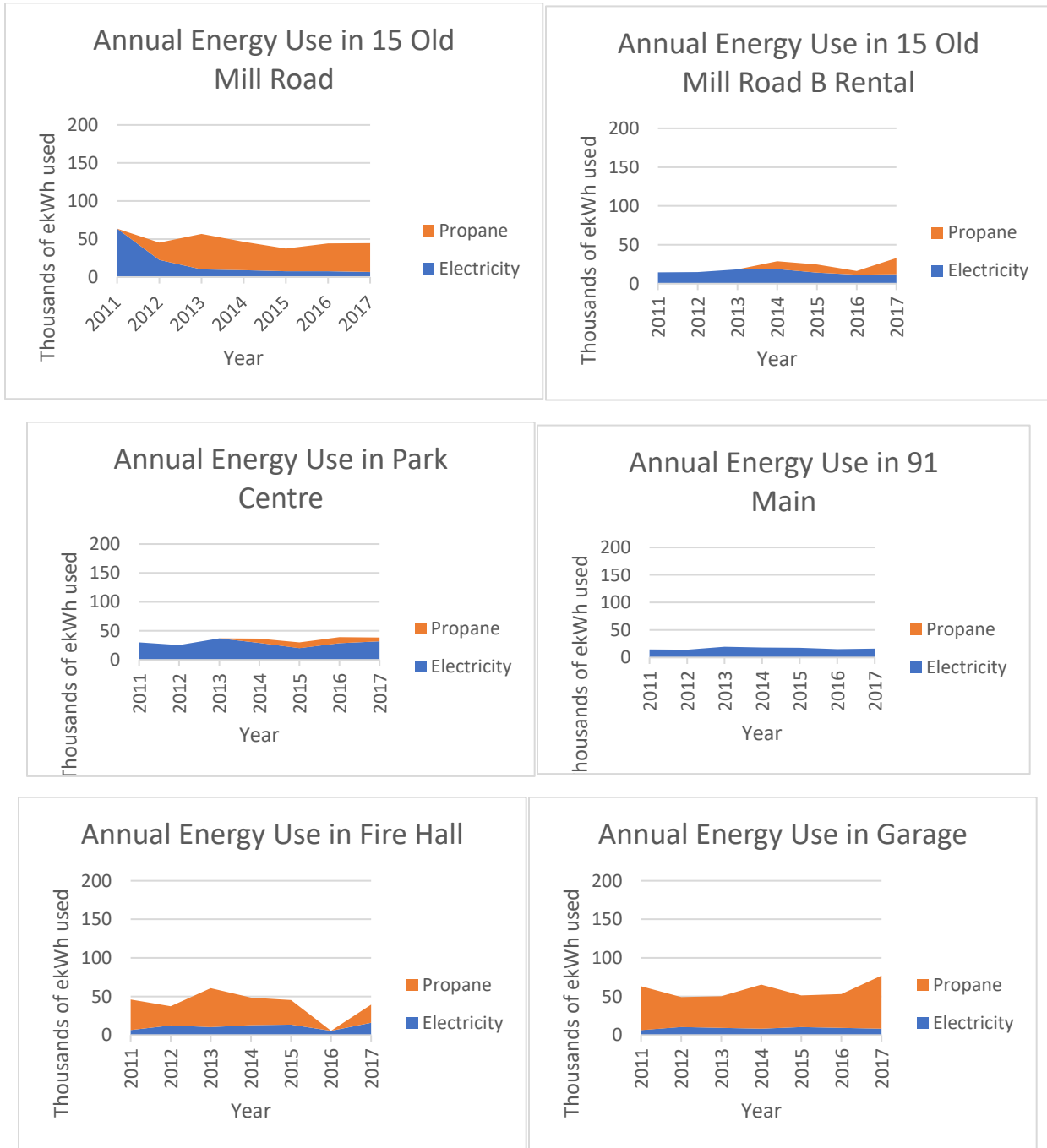
Schedule 1



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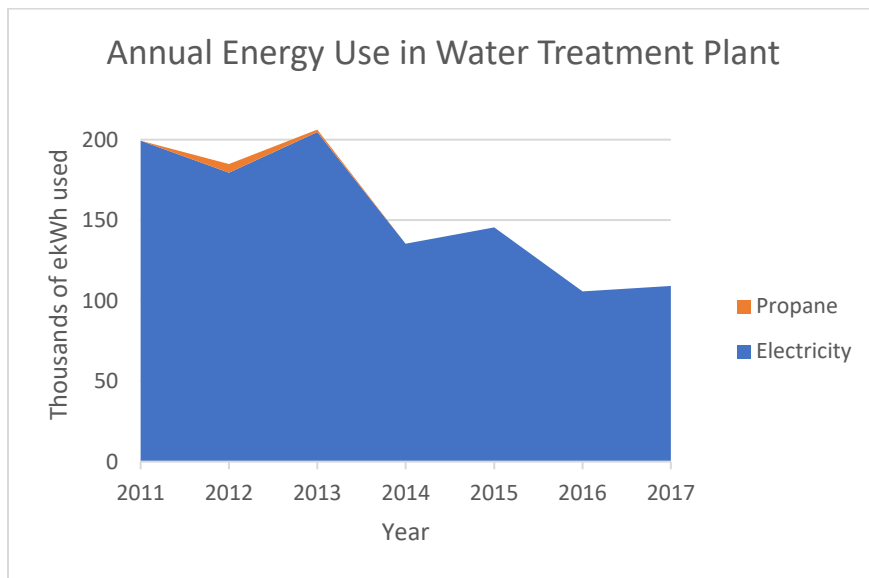
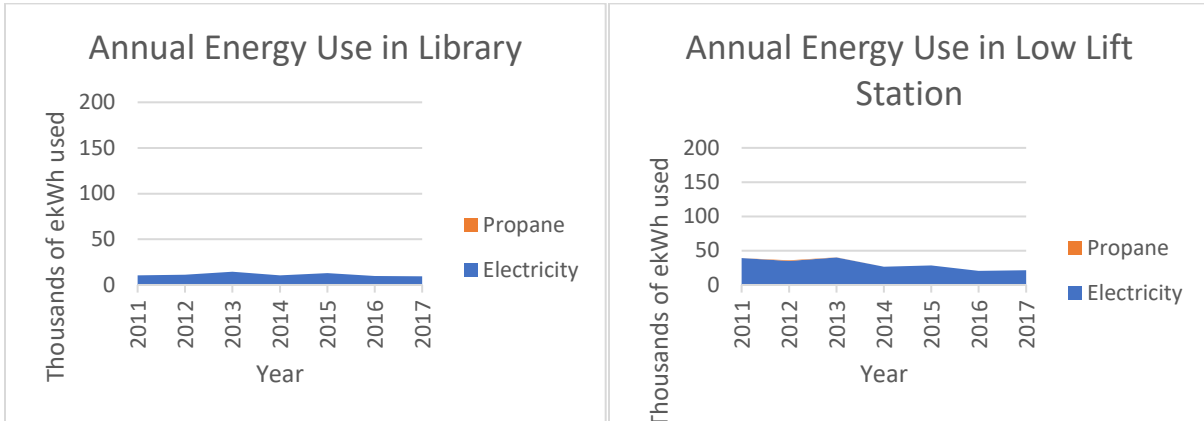
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Schedule 1



\*\*Note: there are errors in the data reported for 2016. These will be corrected and updated during the CEEP process.