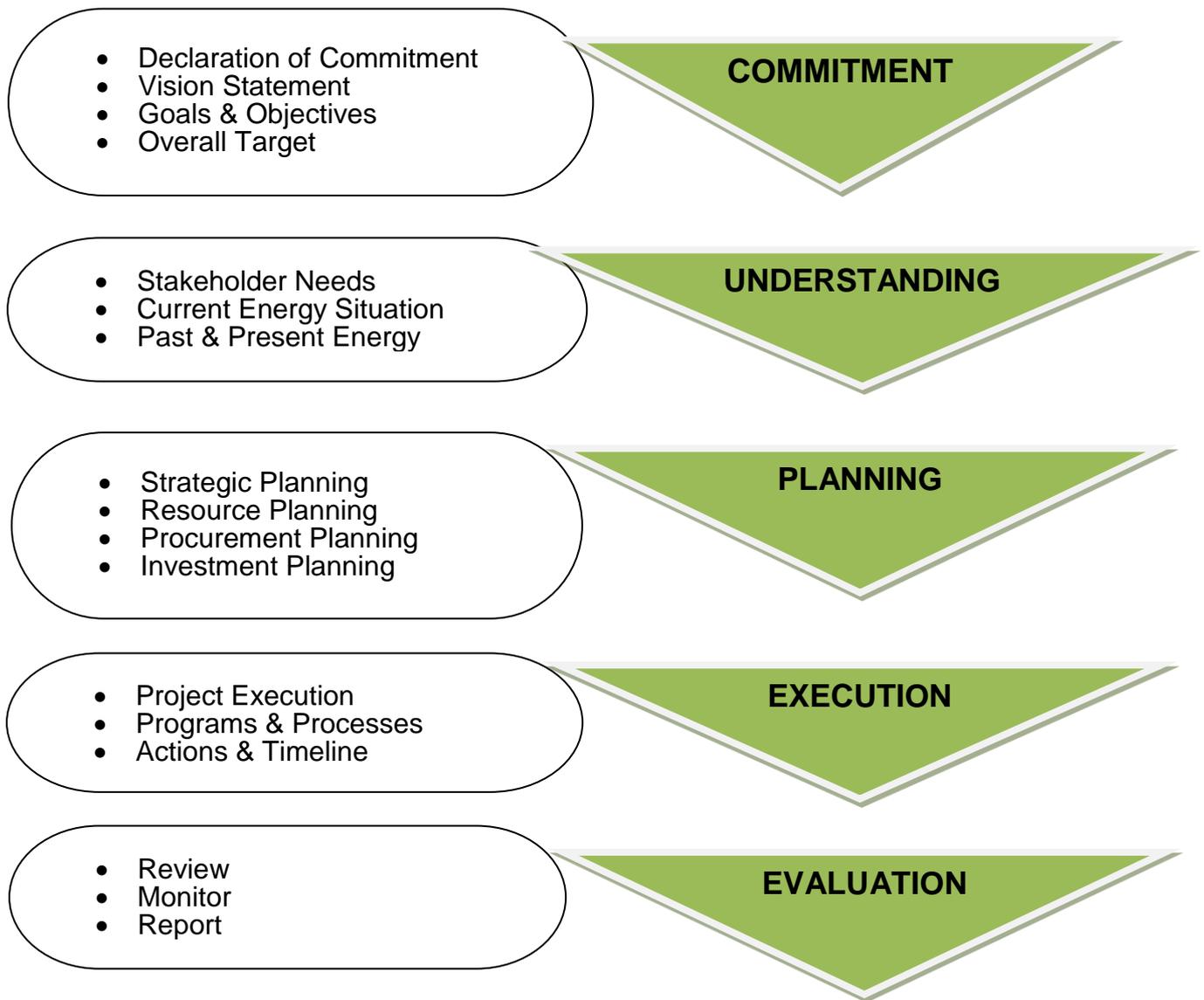


Energy Management Plan Update

Township of Severn

From: 2019-01-01 to: 2023-12-31

Figure 1: Energy Management Framework



Commitment

Declaration of Commitment

The Township of Severn is committed to efficient energy management in its day-to-day operations and will use existing resources and leverage outside agencies where appropriate to develop and implement a strategic energy management plan that will reduce our energy consumption and its related environmental impact.

The Township of Severn is required in compliance with the Green Energy Act to update every five years the energy conservation and demand management (CDM) plan that was developed in 2014. This document is the update to the 2014 CDM plan and covers the strategy for conservation for electricity, natural gas, oil, propane and water for the five-year period 2020-2024.

Vision

The CDM plan is guided by the vision and goals contained in the Township's Strategic Plan and will be influenced by our mission and core values and aligned with many other plans, policies and strategies that the Township has in place.

We will strive to continually reduce our total energy consumption and associated carbon footprint 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.

Goals

- To continuously improve the energy efficiency of our facilities in order to reduce operating costs, energy consumption and greenhouse gas emissions;
- To ensure that our renovation and construction projects embody best practices in energy-efficient design and promote LEED certification in our tenders; and
- To create a corporate culture of conservation.

Objectives

- Improve awareness of climate change and greenhouse gas emissions.
- Complete energy audits on two municipal buildings in the Township.
- Improve the efficiency of energy use through low-cost opportunities by implementing the following:
 - ✓ Sound operating and maintenance practices.
 - ✓ Employee training, and staff awareness.
 - ✓ Monitoring and tracking system.
 - ✓ Energy procurement through fixed rate contracts, where available and appropriate.

Overall Target

The primary objectives of the Energy Management Plan are to achieve the following:

- Meet the requirements of the Ontario Regulation 507/18.

- Improve energy management and performance of the Township.

The results of Severn's building portfolio energy analysis from 2016 to 2017 indicate a reduction in greenhouse gas (GHG) emissions of approximately 1% and improvement in energy intensity of approximately 2%. The Township of Severn will continue to review the Energy management plan annually and strive to further reduce the GHG emissions and improve the energy intensity between now and 2024.

Organizational Understanding

Stakeholder Needs

The Township of Severn understands that its internal stakeholders (Council, Committees of Council, CAO, staff) need:

- a) An up-to-date and relevant energy management plan with clear vision, and goals in order to clearly communicate the corporate commitment to energy efficiency,
- b) Training and support to develop the skills and knowledge required to implement energy management practices and measures.

The Township of Severn understands that its external stakeholders (residents, community organizations, businesses, Province) need:

- a) The municipality to be accountable for energy performance and to minimize the energy component of the costs of municipal services; and
- b) The municipality to reduce the carbon footprint associated with its corporate energy use.

Municipal Energy Situation

The Township of Severn recognizes that energy management is essential for the efficient and effective operation of municipal facilities and service delivery. The Township currently utilizes natural gas, propane, electricity and a relatively small amount of fuel oil to power and heat corporate facilities, operate outdoor lighting and treat and transport wastewater.

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: Our municipal energy data is managed through the Finance department. The data is received via supplier invoices, then tracked and/or monitored using the AMO/LAS. – Energy Planning Tool:

- Invoices are entered the Energy Planning Tool (EPT).
- Consumption/trends are analyzed.
- Reports are generated

Energy Supply Management: Our municipal energy is supplied by Ontario Hydro.

- 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 supplied by Enbridge Gas and Union Gas on an as needed basis and is priced at the standard rates offered by the providers.
- Propane is supplied by local propane providers on an as needed basis and is priced at the standard rate offered by the provider at the time of delivery.
- The Township of Severn purchases their vehicle fuel through competitive tender process annually.

Energy Use Management: Day to day management of energy has been primarily the responsibility of facility managers. Energy consumption is reviewed on a monthly basis by staff. To aid in our efforts to track and reduce energy use, the Township of Severn uses LAS/Energy Management Tool (EMT) and Energy Planning Tool (EPT).

Summary of Current Energy Consumption, Cost and GHGs: The current energy usage by building is detailed in the attached spreadsheet - (Appendix A: 2017 energy consumption, cost and Greenhouse Gas emissions).

Strategic Planning

Links with other municipal plans

As an integral component of the management structure, the energy management plan is to be coordinated with the municipality's budget planning, strategic plan, procurement policy, and the asset management plan.

Resources Planning

Energy Leader

The Deputy Treasurer is designated as our energy leader with overall responsibility for corporate energy management.

Energy Team

The Township will consider appointing employees to act as departmental energy efficiency team members, where it is appropriate and practical.

Internal Resources

The Township of Severn will continue to communicate objectives and encourage staff to think about energy efficiency in their day-to-day activities and improve the management of energy within the Township through behavior change programs and develop building specific poster boards and educational materials discussing the building's energy features, technologies, retrofits, etc.

External Consultants and Suppliers

We will continue to establish criteria in our Township's Procurement Policy based on our energy goals and objectives for the selection of external consultants and energy suppliers.

Energy Training

Staff Training and Communication: We will continue to place on the Township website, information that will report on the Township's progress to our stakeholders.

Energy Awareness Training: We will develop and deliver training focused on the energy use and conservation opportunities associated with employees' job functions wherever possible.

Energy Skills Training: We will utilize skills training for operators, maintainers and other employees that have "hands-on" involvement with energy consuming systems in order to improve the team's ability to achieve energy efficiency improvements.

Business Procedures: We will continue to carry out a review of all business processes and modify them as necessary in order to incorporate any energy efficiency considerations.

Procurement Planning

Energy Purchasing: We will continue to tender our diesel and gas purchases through our tendering process. Opportunity to jointly procure other energy commodities will be investigated. This investigation will include the analysis of cost considerations, available energy services, energy quality and reliability and other performance factors.

Consideration of energy efficiency for all projects: Our Procurement Policy was updated as required to incorporate energy efficiency into the criteria for selection and evaluation of materials and equipment. We 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, where possible.

Investment Planning

Creative Approaches: In 2017, Severn took on the project of converting all the old HPS and MV streetlights to energy efficient LED lights. This conversion has saved approximately 77,000 kWh in hydro usage and a carbon reduction of approximately 6,600 Kg in 2017. We will continue to replace the old lighting fixtures with new energy efficient LED lights in our offices, corporate facilities, parks, etc., as the old lighting becomes inoperative and implement other energy reduction strategies, as we see fit. Continuous investment in new LED lighting in our corporate facilities will significantly reduce energy consumption and GHG emissions in years to come.

Projects Execution

Municipal Level: We will carry out the required development of business procedures and communication programs and implement them methodically according to the planned timelines within the resources constraints that apply.

Asset Level: Although facilities staff have the lead responsibility in ensuring Township's facilities operate efficiently, all Township's 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.

Our Execution – Action List

All work completed on the plan to date culminates in the development of actions for execution. Generally, the action can be classified as a program, process, or project. In addition, all actions are linked back to objectives developed earlier in the plan in order to ensure that they support the objectives, which in turn supports the goals, which in turn will move the Township's towards its vision.

<u>TYPE</u>	<u>OBJECTIVE</u>	<u>ACTION</u>	<u>OWNER</u>	<u>TARGET DATE</u>
Program	Awareness	Add energy awareness to management meetings Review opportunities for energy saving	CAO	Q3 - 2019
Program	Awareness	Improve staff education and awareness Make use of visual displays in lunchrooms to demonstrate to staff the implications of current behaviors	Deputy Treasurer	Q4 - 2019
Program	Awareness	Communicate to the organization the name of the Energy Leader and distribute the Energy Management Plan	Deputy Treasurer	Q3 – 2019
Process	Energy Efficiency	Vacuum back of all vending machines and refrigerator in municipal facilities	Facilities Managers	Q4 – 2019
Process	Energy Efficiency Awareness	Use power bars on all computers – place on desks for awareness	IT	In progress
Process	Energy Efficiency	Turn off all electronic devices such as coffee makers, printers, calculators, phone chargers, etc. at night and on weekends	Deputy Treasurer	In progress
Project	Energy Efficiency	Shut down PCs at night	IT	In progress
Project	Energy Efficiency	Enhance Building Envelope – window replacement program, window sealing in winter, caulking, weather-stripping and insulation as budget relents	Deputy Treasurer, CBO	Q4 – 2020
Program	Energy Efficiency	Ensure all lighting is updated	Deputy Treasurer, CBO	In progress
Program	Awareness	Employee participation program: identification of improvements	Deputy Treasurer	Q4 – 2020
Program	Awareness	Have different staff walk through facilities	Deputy Treasurer, Directors	Q1 – 2021
Project	Energy Efficiency	Identify unnecessary plug loads	Directors	Q4 – 2020

Project	Energy Efficiency	Talk to all major vendors regarding equipment efficiencies and collect their ideas for improvement	Directors & Facility Managers	Q2 – 2020
Project	Energy Efficiency	Street Lighting Streetlight New installations will consider new technologies and industry trends On-going Maintenance – all street/traffic lights when repaired or replaces shall upgrade to LED lighting	Director of Public Works	In progress
Project	Energy Efficiency	Upgrade heating and cooling systems	Facility Managers	In progress
Process	Procurement	Fleet Procurement <ul style="list-style-type: none"> - Selecting vehicle engines with better fuel economy under our operating conditions - Specifying transmissions that improve fuel efficiency - Setting specifications so that the equipment is the right size for the work 	Director of Public Works	In progress
Program	Energy Efficiency Awareness	Fleet Preventative Maintenance <ul style="list-style-type: none"> - Program to schedule routine maintenance and inspection - Operator awareness/training - Equipment idling procedures - Use of LED lighting for vehicles and equipment - Use of inverters rather than generator for small tools 	Public Works, Utilities Directors	In progress

Evaluation

Energy Plan Review

The results of our energy management plan will be evaluated by monitoring our progress, and by reporting the findings to our various stakeholders. In addition, our evaluation will include a review and update of the energy plan as necessary. The evaluation process is ongoing and provides the critical feedback that leads to continuous improvement.

As part of the annual review, the following steps should be completed:

- Track the activities that have been implemented, based on a checklist of all of the actions included in the CDM plan;
- Note any updates to the CDM plan, based on new audits, organizational changes, or lesson from past projects;

- Identify the priority actions for the upcoming year, and recommend funding and resources for their implementation; and
- Compile a short report annually describing projects implemented, progress towards targets, cost savings achieved, updates to the CDM plan and priority actions for the upcoming year.

Reporting

Energy Consumption: Our energy consumption in 2017 was reduced to 9,252 GJ from our 2016 levels of 10,167 GJ.

Green House Gas Emission: Our corresponding greenhouse gas emissions in 2017 was 363 tonnes down from 367 tonnes in 2016. This represents a 11% reduction over 2016 levels.