Energy Conservation and Demand Management Plan 2025-2029

July 1, 2024

Town of Smooth Rock Falls

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Schedules

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Executive Summary

In 2014, the Town of Smooth Rock Falls (SRF) developed a comprehensive Five Year Conservation and Demand Management (CDM) Plan for the Town in compliance with the requirements of *Ontario Regulation 397/11* under the *Green Energy Act, 2009*. This regulation was replaced with *Ontario Regulation 507/18* under the *Electricity Act, 1998* in 2018, and the plan was not updated in 2019 under regulation 507/18. The Town of Smooth Rock Falls retained the Ontario Clean Water Agency (OCWA) to update the Town's first CDM Plan originally developed in 2014, incorporating the experiences gained in energy conservation over the last five years. This updated CDM plan was developed as per the regulation and guidelines provided by Ministry of Energy, Northern Development and Mines and covers the period from 2024 to 2029. The plan was presented to Council and approved on May 21st, 2024.

The plan update describes our Town's:

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

The Plan update identifies the Energy Conservation Measures (ECMs) implemented from 2014 to 2023 and outlines future ECM opportunities planned for the period of 2024 to 2029 including capital upgrades and behavioural improvements.

The intent of the CDM Plan update is to provide a basis for the Town of Smooth Rock Falls to implement improvements to its infrastructure and operations that reduce energy use, their associated costs, as well as environmental effects of the Town's activities. It is a living document that will evolve with the Town's energy needs. This plan is designed to meet the current energy conservation needs of the Town of Smooth Rock Falls.

Overall ***electricity consumption across all municipal buildings reported on was reduced by 13% by 2022 compared to the 2012 baseline while natural gas consumption across all municipal buildings reported an increase of by 0.1%.***

From 2014 to 2024, the greatest reductions achieved at the Town of Smooth Rock Falls were:

75.7%

Upgrading the street lighting has reduced energy consumption significantly with highest portion yeilding nearly 76% reduction.

70.5%

The HVAC upgrades at the Water Treatment plant have yeilded significant savings starting in 2018 and drastically improving in 2022, showing 70.5% reduction.

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.

The Town of Smooth Rock Falls has taken significant steps in reducing the amount of energy consumption throughout municipal facilities and equipment. While the Town is still working to surpass its original conservation objectives from the 2014 plan, we recognize measures can take place to ensure savings continue to grow and that new conservation measures are identified and acted upon.

The Town of Smooth Rock Falls will strive to ***reduce our energy consumption by an additional 5-10% in municipal operations by 2025 compared to the 2012 baseline***. This Energy Reduction Target will apply to all departments and facilities owned by the Municipality. Included herein are the measures that will be undertaken to support the achievement of that goal.

Overview

In 2014, the Town of Smooth Rock Falls (SRF) developed a comprehensive Five Year Conservation and Demand Management (CDM) Plan for the Town in compliance with the requirements of *Ontario Regulation 397/11* under the *Green Energy Act, 2009*. This regulation was replaced with *Ontario Regulation 507/18* under the *Electricity Act, 1998* in 2018, and the plan was not updated in 2019 under regulation 507/18.

Under *Ontario Regulation 25/23,* the requirements for broader public sector energy planning and reporting are identical to those under the former *Ontario Regulation 397/11 and 507/18*.

Under *Ontario Regulation 25/23*, all BPS organizations, including municipalities and townships, are required to report annually on energy use and greenhouse gas (GHG) emissions. The organizations are also required to develop a CDM plan and update it every five years, with this second update due July 1, 2024.

Regulation 25/23 requires public agencies to:

- Report annually on energy use and GHG emissions.
- Develop five-year energy CDM plans starting July 1, 2014 with the first update due July 1, 2019, and subsequent updated every 5 years
- Post annual reports and 5-year plans to the agency's website and make printed versions available for the public.

The Town of Smooth Rock Falls retained the Ontario Clean Water Agency (OCWA) to update the Town's first CDM Plan originally developed in 2014, incorporating the experiences gained in energy conservation over the last five years. This updated CDM plan was developed as per the regulation and guidelines provided by Ministry of Energy, Northern Development and Mines and covers the period from 2024 to 2029. The plan was presented to Council and approved on May 21st, 2024.

The baseline GHG Emissions and Energy Consumption reflects data gathered and submitted to the Ontario Ministry of Energy, Northern Development and Mines. In order to review the results and accomplishments of the 2023 to 2014 CDM plan targets and objectives and to determine the present state of energy management in the Town of Smooth Rock Falls, we have summarized the energy and GHG reports for 2011 to 2022 in Schedule 1. Additionally, this plan incorporates the results of the Energy Audits and studies conducted throughout several key facilities owned by the municipality, historical data of energy use, and actions and steps already taken with the intention of realizing energy savings.

In addition to energy conservation, the updated CDM plan supports our capital plan and other key strategic plans. This CDM Plan is intended to serve as a guide for staff and Council during the capital planning and budgeting process.

Municipal Energy Background

Increased economic activity in Ontario has resulted in the rise of GHG emissions and presents a challenge to fulfilling the provincial environmental objectives expressed in the government's Made-in-Ontario Environment Plan.

In Ontario, 6.9% of GHG emissions are generated from the combustions of the commercial and institutional buildings sector; the largest sources of GHG emissions generations are the industrial operations and transportation. Optimizing energy consumption in municipal buildings will be essential if we are to meet future energy needs and witness a global transition to sustainable energy sources.

The Town must implement changes in the way we use energy to meet our needs (energy conservation) and use the most efficient equipment and measures (energy efficiency) to reduce consumption and costs.

In 2014, the primary source of energy for municipal operations (facilities, social housing, and street lighting) in Ontario was electricity (63%) and natural gas (35%), with minor use of other fuels including hot water and steam from district heating, chilled water from district cooling, propane, and fuel oils. Municipalities spent an estimated $917 million on electricity and $105 million on natural gas in 2014[1].

Energy consumption and costs are relatively high in Ontario. The figure below shows the significant increase in electricity costs over the last decade, taxing municipal reserves.

[1] Ontario Municipal Energy Profile, ICF, 2018

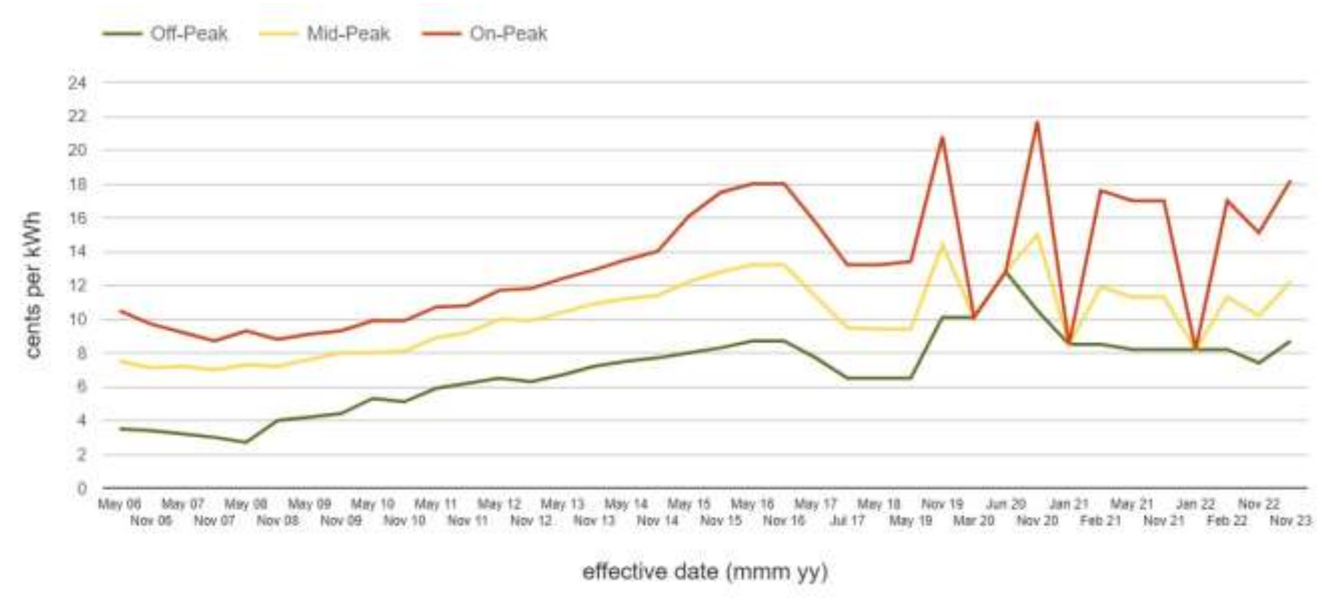

Figure 1 Historical TOU Electricity Rates[2]

The TOU prices are primarily for users with utilization rates under 50kW of average demand such as small pumping station, small commercial and residential locations.

Figure 2 Historical Tiered Prices[3]

Tiered is primarily for the medium size facilities, where some of SRF facilities fall under this category. However, for the purposes of highlighting the rise in the electricity prices over the years both of the above figures display a comparable trend.

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[2] Ontario Energy Board, 2024

[3] Ontario Energy Board, 2024

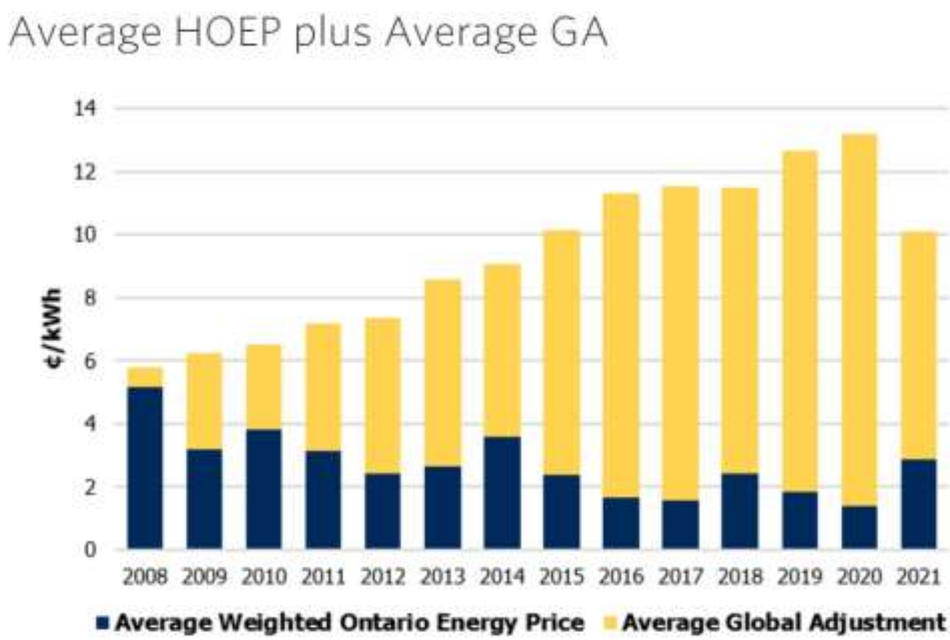


Figure 3 Historic HOEP and GA Blended Cost[4]

The Hourly Ontario Energy Price (HOEP) in combination with Global Adjustment (GA) is used for determining the bulk of the typical invoice from the Local Distribution company (LDC). Unlike the figures before, total cost is steadily rising, however SRF has taken significant measures to mitigate the global adjustment portion of the electricity bill by targeting the energy consumption, as the Municipality has no “Class A” eligible facilities to be able to mitigate the costs any other way.

[4] IESO, 2024

The Ontario water and wastewater treatment sectors are the largest municipal electricity consumers, representing more than a third of annual electricity consumption. In 2011, water and wastewater systems used about 1,815 gigawatt-hours (GWh) of electricity (enough to power about 200,000 homes) and 40 million m^3 of natural gas (enough to heat approximately 15,000 homes). This energy use may rise due to ever-more stringent treatment requirements, but these systems also have many opportunities to become more energy efficient, and even to generate renewable energy.[6]

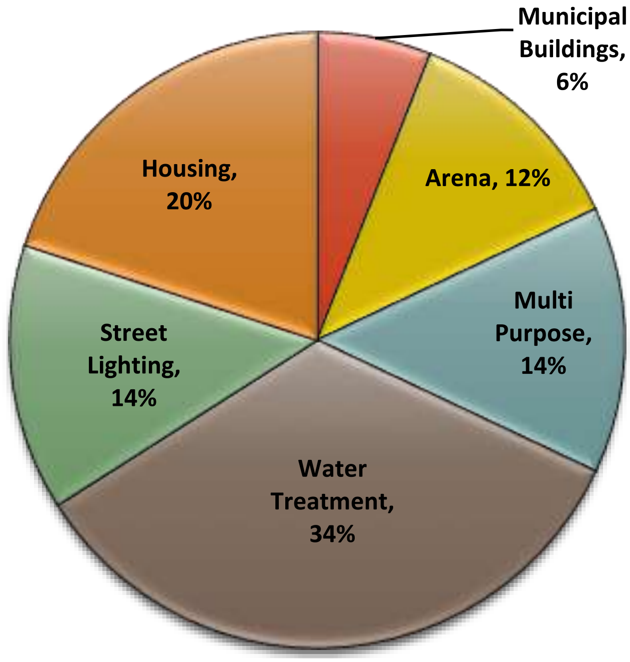
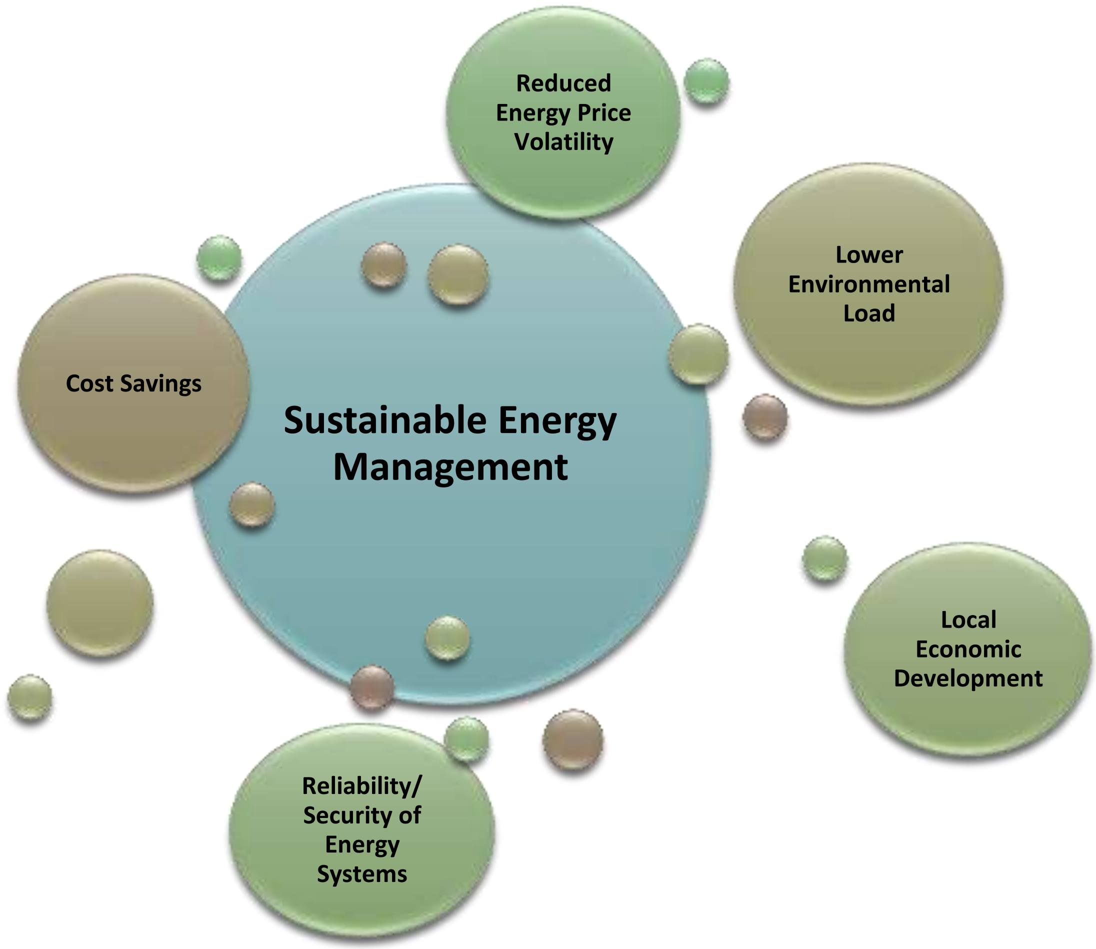


Figure 4: Municipal Energy Use by Sector in Ontario[3]

Managing municipal energy consumption efficiently means providing the same services with less energy. Energy conservation measures are often the lowest cost options for providing many other environmental, economic and social benefits. This also results in cost savings, lower environmental load by avoiding GHG and local air, water and land emissions associated with energy production and consumption, local economic development opportunities and associated new jobs, enhanced reliability of energy systems, and reduced price volatility, and improved energy supply security.

[5] Study Report: Market Characterization & Conservation Potential for Ontario's Drinking Water & Wastewater Treatment Plants (Dec. 2018), IESO, Posterity Group, 113.

[6] Every Drop Counts, ECO, 2017



CDM Plan Mission, Vision and Goals

The plan update describes our Town'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.

The Plan update identifies the Energy Conservation Measures (ECMs) implemented from 2014 to 2023 and outlines future ECM opportunities planned for the period of 2024 to 2029 including capital upgrades and behavioral improvements targeted toward energy consumption and GHG emissions reduction.

The intent of the CDM Plan update is to provide a basis for the Town of Smooth Rock Falls to implement improvements to its infrastructure and operations that reduce energy use, their associated costs, as well as environmental effects of the Town's activities. It is a living document that will evolve with the Town's energy needs. This plan is designed to meet the current energy conservation needs of the Town of Smooth Rock Falls.

Mission

The mission statement of Town of Smooth Rock Falls' Strategic Plan is also integrated into the Five Year Conservation and Demand Management Plan:

The Town of Smooth Rock Falls leads in the establishment of conditions – social, community and economic – that make our community a great place to live. Through the provision of needed services, leadership in economic development and collaboration with other stakeholders, the Town ensures the wellbeing of the community and its residents, stimulating growth and initiative.

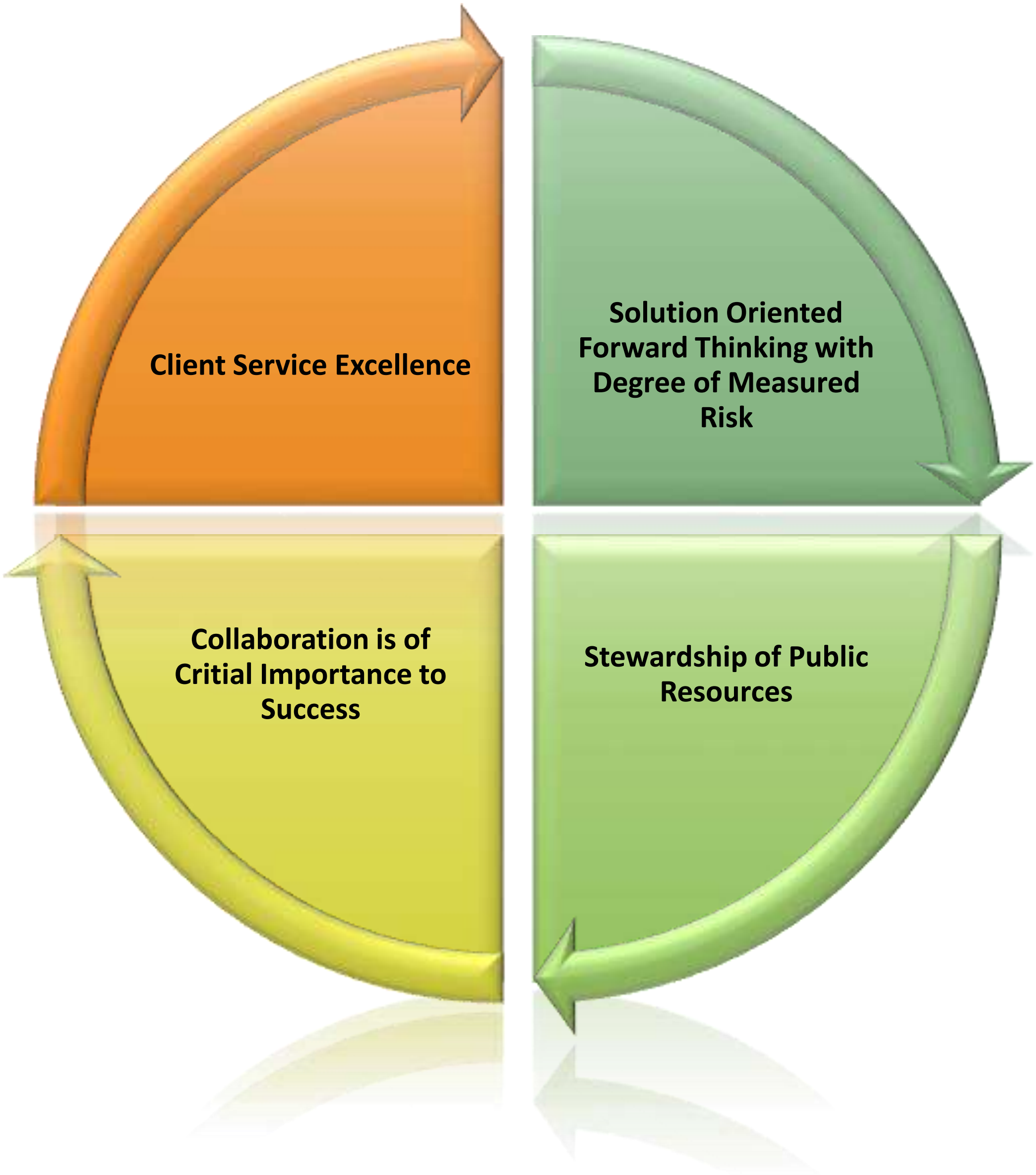
Vision

The Town of Smooth Rock Falls will be moving toward its holistic future, or the so-called preferred state, while pursuing the continual improvement of energy consumption performance and GHG emissions reductions.

The Town of Smooth Rock Falls is committed to a process of diligent community development and planning with sustainable living in mind. This commitment by the Town of Smooth Rock Falls, reflects Smooth Rock Falls' Strategic Plan.

The Town of Smooth Rock Falls seeks to achieve the following vision:

We will strive to continually reduce our total energy consumption and associated greenhouses gases (GHGs) through wise and efficient use of energy and resources, while still maintaining an efficient and effective level of service four our clients and the general public. This will involve a collaborative effort to increase the education, awareness, and understanding of energy management within the municipality. Total energy consumption includes electricity and natural gas. This vision can be achieved through the integration of energy efficient 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 to showcase appropriate leadership within the corporate facilities and operation.



The Five Year Conservation Demand Management Plan thus aligns with the values as listed in the 2015 20 Year Strategic Plan, which:

> *consists of a number of initiatives or action items grouped into four priorities**: Client service excellence is paramount to everything we do; Decision making is forward thinking and solution oriented, with an appropriate degree of measured risk; As stewards of public resources, we will strive to maximize effectiveness and efficiency in everything we do; Collaboration is critical to our success***

Goals

The Town of Smooth Rock Falls' Energy Conservation and Demand Management Plan was completed and updated to help achieve the following goals:

- Improve the energy efficiency of our facilities by utilizing best practices to reduce our operating costs, energy consumption and greenhouse gas emissions;
- Maximize fiscal resources and avoid cost increases through direct and indirect energy savings;
- Reduce and optimize the environmental impact of the municipality's operations;
- Improve the reliability of the municipality's equipment and reduce maintenance costs;
- Create a culture of conservation within the municipality by integrating the energy conservation plan with the capital plan, capital asset policy and resiliency plan;
- Adopt standard processes that incorporate a culture of conservation and innovation within all levels of the decision-making process.

Municipal Commitment

Effective energy management begins with the specific, visible expression of commitment by the Municipality, to making the reduction of energy consumption an organizational priority. The Municipal Council of the Town of Smooth Rock Falls is committed to delivering sustainable and reliable cost effective services to the community while meeting regulatory requirements and obligations.

The Council at the Town of Smooth Rock Falls will designate a leadership team from diverse key stakeholders to manage the energy Conservation and Demand Management initiatives and implement the Five Year Conservation and Demand Management Plan in the local municipality.

The Council follows through on the commitments expressed in the Conservation and Demand Management Plan, and has fully endorsed this document.

The Council at the Town of Smooth Rock Falls is fully committed to energy conservation and greenhouse gas emissions reduction, as evidenced by:

- Adapting Energy Conservation and Demand Management as an integral part of Town of Smooth Rock Falls 20 Year Strategic Plan
- Promoting energy conservation culture throughout the organization
- Setting and approving the energy Conservation and Demand Management objectives
- Establishing energy conservation targets and ensuring they have been communicated
- Communicating the importance of meeting the energy conservation objectives and goals
- Identifying the Conservation and Demand Management Team and supporting their decisions
- Conducting ongoing Conservation and Demand Management Plan reviews
- Allocating resources for Energy Conservation and Demand Management initiatives
- Conducting reviews of energy conservation goals based on set targets vs. actual energy consumption
- Facilitating the organization's integration of energy conservation measures
- Designating responsibilities and interactions for the implementation of the energy conservation initiatives

An ***Energy Mandate*** is included in Schedule 2. This Energy Mandate affirms commitment by the Town of Smooth Rock Falls to implement the Five Year Energy Conservation and Demand Management Plan.

Energy Conservation Objectives, Goals and Actions

The Town of Smooth Rock Falls' 2014 Conservation and Demand Management Plan included the major goals and objectives to be implemented within the 5 Year period. The Plan will evolve and will be subject to adjustments as deemed necessary to best serve taxpayer interests and the Town's aim for optimized operations. The Town of Smooth Rock Falls will also set the overall energy reduction targets for the period of 2024-2029, after completing energy assessments to all municipal buildings.

The Conservation and Demand Management Plan was developed as a road map for the energy conservation activities in the Town of Smooth Rock Falls. It is consistent with the responsibility of the Town Council to address the need to develop mechanisms to balance energy demand and reduction of energy consumption and GHG emissions for municipal buildings.

The Five Year Conservation and Demand Management Plan is based on the Ministry of Energy, Northern Development and Mines' guidelines and recommended approach. During the development of the Five Year Energy Conservation and Demand Management Plan for the Town of Smooth Rock Falls, the Town applied strategic planning tools, process engineering judgement and methodologies. The Town of Smooth Rock Falls aims to optimize and integrate existing operational systems with necessary energy efficiency upgrades.

The CDM planning process progressed through the following stages:

1. Define the Preferred State

- The preferred state sets the long-term direction and vision for energy management for the Town of Smooth Rock Falls. This is where the Municipality wishes to be with respect to energy and energy conservation. This in essence, forms the basis used to identify goals and objectives.

2. Identify the Present State

- The present state identifies the current energy use within the Town of Smooth Rock Falls, and indicates the variance between current energy usage and preferred energy usage.

3. Identify Measures

- At this stage, specific measures and steps are identified to move from the present to the preferred state of energy management. Priorities are assigned to aid with effective implementation of the Plan.

4. Document Results

- The results of the strategic planning sessions should be documented in the Energy Conservation and Demand Management Plan along with the other planning requirements discussed in this guide.

Energy Conservation Objectives

1. Energy Conservation **Stewardship** - promote energy efficiency at the corporate level, such as the creation and engagement of an energy management team, the development of a corporate energy management plan or policy, or the implementation of a formalized energy management processes.
2. Energy Conservation Process and Technology **Improvements** - reduce energy intensity in industrial processes by improving procedures and equipment such as refrigeration or compressed air systems.
3. Energy **Performance** Management - enhance monitoring and measuring of, and reporting on facility or company-wide energy consumption and improve energy performance.
4. Energy Conservation Employee **Awareness and Training** - raise employee awareness and understanding of energy efficiency and promote best practices through knowledge

exchange.

5. **Integration** of Energy Efficiency Strategy - improve energy efficiency at municipal facilities at corporate-wide level through a range of initiatives as a result of an integrated strategy.
6. Future Energy Conservation **Leaders** - study the advances in the field of industrial energy efficiency and broadly disseminate energy efficiency best practices.
7. **Transparency** in energy conservation activities - setting requirements for energy-efficient procurement and implementation of profitable energy conservation projects as well as disclosure of electricity consumption in the facilities operated by the Town

Energy Conservation Goals

1. Initiate, participate, and collaborate in energy conservation, including public education and awareness
2. Encourage denser, contiguous development: intensification of existing built-up areas and the efficient use of existing infrastructure
3. Incorporate energy conservation measures into site design, and into the design, construction and renovation of buildings
4. Encourage the use of walking, bicycling, transit, and carpooling as alternatives to private automobile use
5. Encourage the planting of native trees and natural resources preservation
6. Promote design of buildings, which maximize the use of alternative or renewable

energy systems, such as solar and wind energy, at appropriate locations

7. Encourage development using the highest building design standards, such as LEED and any related standards
8. Evaluate opportunities for energy reduction and establish aggressive targets
9. Work collaboratively with the local utility and other agencies to implement beneficial and cost- effective programs that enhance and optimize energy consumption
10. The Town of Smooth Rock Falls will pursue energy-efficient procurement policies and achievement of energy savings, with expeditious payback times

Energy Conservation Actions

1. Complete energy audits and assessments in municipal buildings
2. Assign sustainable energy goals and targets based on audit result and trend analysis
3. Disseminate information about energy conservation products and innovative pollution prevention technologies, broadly within the community
4. Initiate measuring, monitoring and consistent reviews of energy consumption in municipal buildings
5. Designate a CDM Team to ensure cost-effectiveness of the conservation initiatives, including improved joint prioritization and increased co-operation and co-ordination among all stakeholders
6. Provide consumer information and education on energy conservation, through promotion at local fairs, events, and Town Hall
7. Provide ongoing education regarding energy management and energy savings opportunities and results to management and operations staff
8. Continuously track the effectiveness of energy conservation initiatives based on consistent measurable performance indicators
9. Identify sources of financing and support for energy projects and programs
10. Urge municipal developers to produce energy-efficient building designs
11. Provide education to municipal personnel, to promote energy efficient use, and implement behavioral energy conservation measures to produce results
12. Establish a designated Lead to be responsible for lighting optimization at the respective facilities
13. Provide opportunities to telecommute and use advanced internet media for meetings in order to reduce on travel associated with greenhouse gas emissions pollution

2025-2029 Proposed Energy Conservation Measures

A summary of recommended measures for the 2025-2029 period, the estimated time that measures would be in place, and the prioritization of conservation measures in the facilities at the Town of Smooth Rock Falls follows:

ORGANIZATIONAL AND BEHAVIOURAL MEASURES			
PREFERRED STATE	**PRESENT STATE TIMELINE**	**MEASURES**	**STATUS**
Established Energy Conservation Organizational System	Need to establish a structured CDM Program and designate a CDM Team	Implement sustainable CDM Program and designate roles and responsibilities	**Ongoing**
Sustained Energy Conservation culture throughout the organization	Staff needs to build better awareness about energy conservation and is getting engaged in various activities	Provide training and broadly disseminate energy conservation ideas and initiatives. Energy awareness campaign.	**Ongoing**
Consumer information and education provided	Limited information about energy conservation best practices	Explore experiences in other communities and work with LDC to promote energy conservation.	**Ongoing**

TECHNICAL MEASURES			
PREFERRED STATE	**PRESENT STATE TIMELINE**	**MEASURES**	**STATUS**
Energy assessments to establish baseline	Need to establish energy baseline and assess the energy efficiency of existing equipment	Review and refine measures based on energy assessments	**2014-Ongoing**
Optimized functional parameters of equipment with energy efficient design	Energy inefficient equipment that needs better control	Install VFDs to optimize the functional parameters and energy consumption of equipment	**2014, Ongoing**

Optimized energy efficient lighting	Lighting energy consumption in the buildings is high. Energy inefficient T-12, HPS, HID lamps require replacement	Install LED lighting , T-8 lamps and ballast , de-lamp and remove unnecessary light bulbs, street lighting conversion has helped reduced the electricity consumption significantly during previous 2014 CDM plan period	**2014, ongoing**
Optimized energy consumption control of buildings	Energy consumption for building maintenance is high	Monitor energy consumption and optimize scheduling. Install timers, occupancy sensors and energy-smart products	**Ongoing**
Smart Grid and Sustainable low cost renewable generation for local consumption	No existing solar generation projects	Install solar generators where possible. Work with stakeholders to enable the renewable generation projects. Build in concepts of	**Ongoing**
Ensure long-term sustainability of the WWTP through reduced waste to landfill, energy usage and GHG emissions	Trucking of biosolids for treatment instead of straight to landfill	Identify options for dewatering of biosolids and identify options for beneficial use of dewatered biosolids	**Ongoing**

Street Lighting

As one of the commitments identified in the previous CDM plan, Street lighting was highlighted as one of the capital projects that has been completed and produced significant energy conservation of 76% and 53% for first and second set of lights owned by the SRF.

WTP Upgrades

The upgrades aimed at reducing natural gas consumption have shown 70% reduction in year 2022.

2012-2023 Energy Consumption Summary

Tracking Energy Consumption and Savings

Annual energy reporting is required under the regulation and allows our Town to understand how energy is used in our buildings, identify potential energy conservation opportunities and track progress on energy conservation efforts. In addition to including the municipality's 2021 annual energy report as required under the regulation, we have also included and considered our 2022 annual energy consumption information, which helped us to report on our achievements and inform the development of new measures (See schedule 1). Our previous years' annual energy reports, along with the 2014 energy conservation and demand management plan can be found on our website. Overall ***electricity consumption across all municipal buildings reported on was reduced by 13% by 2022 compared to the 2012 baseline while natural gas consumption across all municipal buildings reported an increase of by 0.1%.***

From 2014 to 2023, the greatest reductions achieved at the Town of Smooth Rock Falls were:

The Town of Smooth Rock Falls will strive to ***reduce our energy consumption by an additional 5-10% in municipal operations by 2029 when compared against the 2012 baseline***. This Energy Reduction Target will apply to all departments and facilities owned by the Municipality.

75.7%

Upgrading the street lighting has reduced energy consumption significantly with highest portion yeilding nearly 76% reduction.

70.5%

The HVAC upgrades at the Water Treatment plant have yeilded significant savings starting in 2018 and drastically improving in 2022, showing 70.5% reduction.

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.

Please see Schedule 1 for a detailed analysis of the Town's energy consumption from 2012 to 2022.

Looking forward: 2025-2029

Concerns over ever-increasing energy prices and the negative impact of fossil fuels on the environment have raised interest in energy conservation, sustainability, and predictable energy rates.

It is recognized that the ability to meet the target relies on the allocation of resources to implement energy reducing initiatives.

Proposed, Ongoing & Completed Energy Conservation Measures

Energy conservation projects can be categorized as technical (switching street lighting from high pressure sodium to LED), organizational (establishing a green team), or behavioural (running a daylight harvesting campaign, where lights are turned off on sunny days).

Potential energy conservation projects were identified by comparing building-level energy benchmarks to the median energy benchmark for that building type. The Town of Smooth Rock Falls aims to optimize and integrate existing operational systems with necessary energy efficiency upgrades.

A summary of recommended measures and timelines at the Town of Smooth Rock Falls follows:

Technical Measures

Efficiency Measure	Cost	Timeline
Garage Roof Upgrades replacement (Natural Gas Consumption Reduction)	$109,708	**Completed 2014**
PW Garage Gas Heaters (Natural Gas Consumption Reduction)	$8,207	**Completed 2014**
WWTP Gas Heater (Natural Gas Consumption Reduction)	$3,027	**Completed 2014**
Arena Compressors x3 (Electrical Efficiency Gains)	$210,914	**Completed 2014**
Arena Boiler in compressor room (Natural Gas Consumption Reduction)	$7,678	**Completed 2014**
Arena Condenser (Electrical Efficiency Gains)	$68,468	**Completed 2014**
Arena Ice Slab sensors (Natural Gas Consumption Reduction)	$7,632	**Completed 2014**
Arena Exit Doors (Electrical Efficiency Gains)	$19,031	**Completed 2015**
New LED Street Lights throughout town (Electrical Efficiency Gains)	$168,902	**Completed 2015**
STP Roof Replacement (Natural Gas Consumption Reduction)	$80,289	**Completed 2016**
Arena Scoreboard	$14,586	**Completed 2016**
Curling Rink Heater units x2 (Reznors)	$4,331	**Completed 2016**

Municipal Pool Thermal Blanket (Natural Gas Consumption Reduction)	$8,971	**Completed 2016**
Secondary Pool Boiler (Natural Gas Consumption Reduction)	$15,778	**Completed 2016**
Arena Ice Rink LED Light Upgrade (Electrical Efficiency Gains)	$21,412	**Completed 2016**
WTP Heaters - Reznors Units (Natural Gas Consumption Reduction)	$11,325	**Completed 2018**
Arena Backend Structural Upgrades	$1,061,931	**Completed 2019**
New Splash Pad	$163,389	**Completed 2019**
New Roof and Exterior upgrades at the fire hall	$158,226	**Completed 2019**
Pool Chemical System (Electrical Efficiency Gains)	$23,374	**Completed 2019**
Mattagami Backup generator (GHG emissions reduction)	$20,754	**Completed 2019**
WTP Lift Pump (Electrical Efficiency Gains)	$11,567	**Completed 2019**
WTP High Lift Pumps (Electrical Efficiency Gains)	$81,036	**Completed 2019**
WTP PLC Upgrades (Electrical Efficiency Gains)	$50,259	**Completed 2019**
Grocery Store New Roof (Natural Gas Consumption Reduction)	$33,479	**Completed 2020**
STP Pump Replacement OCWA 5957 (Electrical Efficiency Gains)	$10,639	**Completed 2020**
Fire Hall Bunker Suit Washer (Electrical Efficiency Gains)	$11,765	**Completed 2020**
Firehall SCBA Compressor (Electrical Efficiency Gains)	$46,969	**Completed 2020**
WTP Chemical Pump OCWA 5950 (Electrical Efficiency Gains)	$8,456	**Completed 2020**
WTP heater replacement (Electrical Efficiency Gains)	$5,794	**Completed 2020**
WTP Raw Water Automation (Electrical Efficiency Gains)	$8,903	**Completed 2020**
High lift pressure assist mode (Electrical Efficiency Gains)	$13,422	**Completed 2020**
high lift check valve replacement (Electrical Efficiency Gains)	$12,481	**Completed 2020**

Town Hall Boiler System (Natural Gas Consumption Reduction)	$19,151	**Completed 2021**
Arena Tube Heater (Natural Gas Consumption Reduction)	$22,598	**Completed 2021**
Community Hall roof (Natural Gas Consumption Reduction)	$187,885	**Completed 2021**
Community Hall HVAC (Electrical Efficiency Gains)	$15,137	**Completed 2021**
Pool Liner (Natural Gas Consumption Reduction)	$106,979	**Completed 2021**
WTP PLC Upgrades (Electrical Efficiency Gains)	$30,438	**Completed 2021**
WTP invoice 16409 (Electrical Efficiency Gains)	$30,622	**Completed 2021**
Arena Boiler x 2 units (Natural Gas Consumption Reduction)	$99,878	**Completed 2022**
WTP Generator (GHG emissions reduction)	$132,480	**Completed 2022**
2 new additional street lights	$8,340	**Completed 2023**
Arena Tube Heater (Natural Gas Consumption Reduction)	$26,661	**Completed 2023**
Arena Dehumidifier (Electrical Efficiency Gains)	$48,519	**Completed 2023**
Community Hall HVAC x 2 units (Electrical Efficiency Gains)	$33,478	**Completed 2023**
Curling Rink LED light (Electrical Efficiency Gains)	$11,397	**To be completed 2024**
Arena Tube Heaters x 2 unit (Natural Gas Consumption Reduction)	$50,703	**To be completed 2024**
Arena Brine Pump (Electrical Efficiency Gains)	$30,528	**To be completed 2024**
Water Treatment Plant Building Repairs - LED Lighting (Electrical Efficiency Gains)	$10,000	**To be Completed 2030**

Organizational Measures

Efficiency Measure	Timeline
Creation of a CDM Team	To be completed 2025

Behavioural Measures

Efficiency Measure	Timeline
Place poster near kitchen/bathroom sinks reminding users to limit water usage where appropriate	Completed 2020
Place poster/sticker near light switch in rooms reminding users to turn off lights when no one is in the room	Completed 2020
Continue to ensure the temperature of facilities meets the needs of the users	Completed 2020
Harvest day light where possible by opening blinds instead of using electric lighting	Completed 2020
Close windows when air conditioning is in operation	Completed 2020
Campaign against flushable wipes – public education and reduced treatment energy at the STP	Completed 2023

Renewable Energy Projects

Efficiency Measure	Timeline
Investigate options for solar energy	To be investigated 2026
Smart Grid and Sustainable low cost renewable generation for local consumption	To be investigated 2027

Proposed Projects

Energy Management

The central task of facility management is to reduce costs of energy consumption in the facilities while enhancing the work environment. It is important to keep the excellent level of quality and availability of municipal services, while service life of the equipment and the ease of use should remain the same, or improve. The Town of Smooth Rock Falls is consistently optimizing facility management practices and aims to minimize the total cost of the energy-related processes by implementing energy efficient techniques and technologies.

Renewable Energy Generation and Smart Grid

The Town of Smooth Rock Falls is considering to evaluate opportunities to invest in eco-friendly alternatives such as solar power, and promoting concepts from the futuristic vision of zero-energy buildings: buildings with zero net energy consumption, where the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy created on-site.

The development of modern zero-energy buildings became possible, not only through the progress made in new energy and construction technologies and techniques. It has also been significantly improved by academic research, which collects precise energy performance data on traditional and experimental buildings and provides performance parameters for advanced computer models to predict the efficacy of engineering designs. Zero Energy Building is considered a vital component as a part of smart grid.

The zero-energy concept allows for a wide range of approaches due to the many options for producing and conserving energy combined with the many ways of measuring energy (relating to cost, energy, or carbon emissions).

Energy Awareness Campaign

It is essential for the Town of Smooth Rock Falls to deploy an effective energy awareness program or campaigns that encourage individual and group action. The Town of Smooth Rock Falls will develop a multi-faceted campaign, which includes:

- ✓ Town Hall energy conservation actions and events
- ✓ Newspaper articles, columns and signage
- ✓ Website and social media promotions on energy conservation theme

An effective energy awareness program might reduce energy consumption by 5 or 10 % or more.

Technical Efficiency Improvements

An aggressive energy conservation policy at the Town of Smooth Rock Falls is addressing various technical measures. The following energy conservation measures will be evaluated and implemented where appropriate:

Building Envelope

Improvements include:

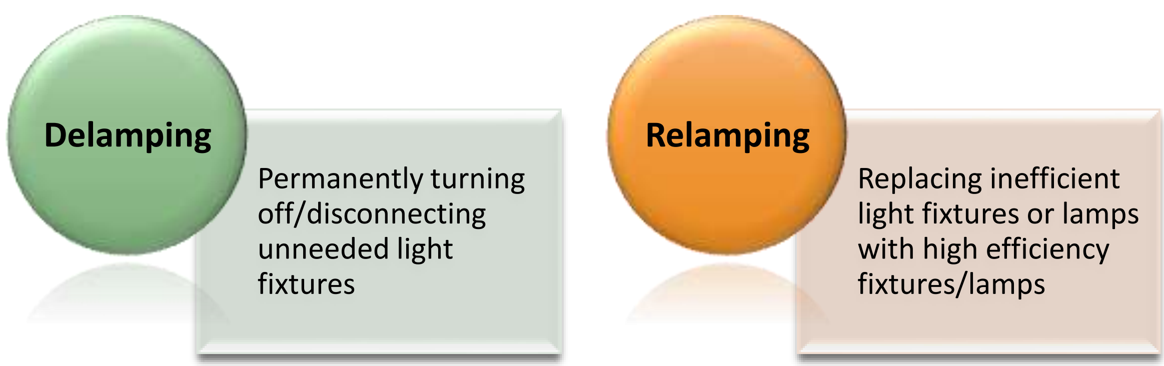
- ✓ Weather/infiltration sealing
- ✓ Increased insulation
- ✓ High performance window replacement
- ✓ Low emissivity reflective window film (to reduce unwanted solar gain in the summer and increase the R-value of windows in the winter)

Lighting

Lighting can be the single greatest load for electricity in many offices, and can cost as much as space heating over the year. Reducing heat output from lighting can also reduce air conditioning costs. Without proper lighting, productivity, safety, security and overall aesthetics can be compromised. Good lighting design contributes to employee comfort and health, which in turn can result in greater productivity.

Careful planning of energy-efficient lighting design geared to building utilization needs is an important aspect considered by the Town of Smooth Rock Falls. Replacement of existing T12 fluorescent lamps and magnetic ballasts with T8 fluorescent lamps and electronic ballasts can reduce up to 40% of the energy costs, lower maintenance costs, increase the system's life and improve the quality of light.

The Town is also planning to retrofit accent lighting applications, where the intent is to replace incandescent lamps with line voltage (PAR type) or low voltage (MR16 type) halogen lamps. They last longer, consume less energy and add more light reflection with greater sharpness. There are two major strategies for reducing energy load from lighting:



Some of the most commonly energy efficiency lighting measures currently evaluated by the Town of Smooth Rock Falls are listed below:

- ✓ Convert T-12 fixtures/lamps to T-8 or T-5Relamp 32-watt T-8 lamps with 28-watt T-8
- ✓ Eliminate incandescent bulbs
- ✓ Convert all exit lighting to LEDs or switch to photo-luminescent signs that require no electricity
- ✓ Avoid retrofitting with indirect lighting that require more fixtures and more wattage
- ✓ Exit signs fixtures shall be rated less than 12 W each
- ✓ Increase reliance on task lighting in order to decrease general illumination without adversely affecting productivity
- ✓ Task lighting (not in the ceiling) shall have a control switch near the workstation.
- ✓ Improve lighting controls
- ✓ Photoelectric and/or dimming controls shall be provided for lighting of common use areas greater than 40m² and within 6 m of the building perimeter. Apply recognized daylighting design techniques to improve daylight levels, increase daylight penetration while

minimizing adverse effects such as glare.

- ✓ Implementation of **lighting controls**:
  - Occupancy sensors
  - Timers (stand alone or energy management system/EMS-interfaced)
  - Daylight harvesting sensors and controls including simple photocells

Additionally, changing existing habits can have a positive effect with developing an energy conservation culture. For instance, lights can be turned off whenever an area is unoccupied; this includes unused common areas such as copy rooms, break rooms, conference rooms and restrooms. If lights can be controlled separately, it is wise to turn off lights whenever there is enough natural light. Posting reminders next to light switches or installing occupancy sensors to keep lights off in unused areas is an important energy savings measure. Occupancy sensors turn off lights automatically when space is unoccupied; savings can be equivalent to 25% of the lighting energy cost.

Other measures may include:

- ✓ Converting outdoor lighting to high pressure sodium
- ✓ Eliminating/reducing outdoor decorative lighting
- ✓ Considering LEDs for general indoor and outdoor illumination (the technology is almost there)
- ✓ Considering outdoor solar powered-LED light fixtures (this technology is also almost there)
- ✓ Requiring white or off-white wall paints for maximum light reflectivity; this strategy helps adequate lighting levels can be achieved with minimum lighting wattage
- ✓ When renovating spaces, designing new lighting for less than 1.0 watts per square foot

LED Street Lights

While LED street lighting is not specifically mentioned in the MECP Guidelines, the Town of Smooth Rock Falls is proud of its commitment and investment in the municipal street lighting retrofit. The ratepayers of the Town of Smooth Rock Falls will be pleased with the Council's commitment and forward thinking, in its progressive investment in LED lighting, which will lead to substantial annual savings on the hydro bill, coupled with significant energy consumption.

Boilers

- ✓ Replace old boilers with new high efficiency boilers
- ✓ Ensure that replacement boilers are not oversized
- ✓ Retrofit boilers with variable flame burners
- ✓ Consider multiple high efficiency modular boilers to improve efficiency by better matching hot water heating loads
- ✓ Consider replacing boilers with co-generators (which also produce electricity)
- ✓ Control boiler output water temperature with outside air temp reset so boiler does not need to heat water hotter than necessary

- ✓ Retrofit boilers with flue gas/stack heat recovery

Chillers

- ✓ Replace old chillers with new high efficiency chillers whose efficiency curve best matches your load profile
- ✓ Do not over-size replacement chillers
- ✓ Operate at peak efficiency (by adjusting water flow, load, condenser/evaporator water temps, etc.)
- ✓ Replace old cooling towers with new high efficiency towers

Air Conditioning

- ✓ Replace older AC equipment with maximum efficiency models
- ✓ Discontinue use of inefficient window units
- ✓ Reduce AC operating hours
- ✓ Turn off reheats and stop controlling humidity levels during the cooling season
- ✓ Clean cooling coils on a regular basis
- ✓ Maximize use of “free cooling” with economizer cycle
- ✓ Use open windows and passive cooling when mechanical air conditioning is not needed
- ✓ Close windows when air conditioning is in operation

Temperature Controls

- ✓ Reduce temperature settings in winter
- ✓ Increase temperature settings in summer
- ✓ Maximize night, weekend and holiday temperature setbacks
- ✓ Install tamper proof or remote thermostats

Motors, Fans and Pumps

- ✓ Adjust operating schedule to minimize run hours (review and update periodically)
- ✓ Replace old motors, pumps, and air handling units with high efficiency
- ✓ Control motors serving fans and pumps with variable speed drives (VSDs)
- ✓ Operate VSDs at maximum acceptable turn-down; vary by time of day and occupancy; also vary by season
- ✓ Convert constant volume fan system to variable air volume
- ✓ Reduce outside air volume during morning warm-up cycle and where/whenever possible through damper settings and demand control ventilation
- ✓ Reduce needless pumping by eliminating three-way by-pass valves

Heat Recovery

- ✓ Run around loops
- ✓ Heat wheels
- ✓ Heat pipes
- ✓ Desiccant wheels
- ✓ Air-to-air heat exchangers

Swimming Pools

- ✓ Pool covers that significantly reduce the evaporation of pool water -- reducing pool heating boiler load as well as outside air ventilation and space heating requirements; they save chemical water treatment too
- ✓ High efficiency boilers for pool water heating
- ✓ Install heat recovery system

Energy Management Systems

- ✓ Switch to direct digital control (DDC) systems
- ✓ Purchase EMS systems which are easy to program (so programming capabilities will be fully utilized by facilities staff)
- ✓ Utilize and optimize use of EMS energy conservation programs, e.g.
    - Optimal start/stop
    - Night setback
    - Demand shedding
    - Remote programmed lighting control

Reduce Solar Gain

Install shades and awnings in the south and west facing windows to prevent overheating and too much glare from the sunlight during the summer

Fuel Switching

- ✓ Consider converting electric space and water heating to natural gas, especially with significant innovation within the space of heat pumps

Information Feedback Systems

- ✓ Accessible display units that show energy use and savings can have dramatic results in energy use behaviors

Additional Considerations

- ✓ The Town of Smooth Rock Falls will also evaluate opportunities for natural gas-fired cogeneration and fuel switching from electric heating to natural gas with the goal to reduce the carbon footprint (as opposed to simply reducing the energy costs).
- ✓ LEED program elements are strongly considered where appropriate as an effective vehicle for moving toward more energy efficient future building state.

Renewable Energy

The Town of Smooth Rock Falls seeks to enhance Conservation and Demand Management initiatives by investigating and facilitating future implementation of renewable generation, green gas and energy reduction projects in the future. Currently the Town does not have any projects outlined that would fall under the renewable energy generation portfolio.

The Town of Smooth Rock Falls will evaluate opportunities for renewable energy projects in partnership with Local Distribution Company (LDC). Any renewable energy projects will be included in the Conservation and Demand Management Plan.

Shrinking the Carbon Footprint

The Town of Smooth Rock Falls targets reducing the carbon impacts in every aspect of its business, by:

- ✓ Investing in innovative, energy efficient products
- ✓ Making its own operations more energy efficient

Understanding the Benefits

Improving energy efficiency can deliver a range of benefits to the local economy at the Town of Smooth Rock Falls. Energy conservation initiatives are often evaluated based on the energy savings they deliver. As a result, the full value of energy efficiency improvements can be significantly underestimated. This also means that energy efficiency policy may not be optimized to target the potential of the full range of outcomes possible. Appendix B illustrates the direct financial benefits from the implementation of Energy Conservation Measures at two municipal facilities.

There are wider socioeconomic outcomes that can arise from energy efficiency improvement, aside from energy savings. Challenges exist in determining the full social benefits from the energy conservation activities. Firstly, the non - market, somewhat, intangible nature of the socio-economic benefits, makes them difficult to quantify. Secondly, the effects due to energy efficiency alone can be complex to isolate and to attribute causality.

Non-tangible benefits from the greenhouse gas emissions reduction include reduced risk to human health and welfare and less global warming and climate change.

Investment in energy efficiency and the increased disposable income can lead to direct and indirect job creation in energy and other sectors. This makes energy efficiency an important part of municipal government in terms of the Town of Smooth Rock Falls' green growth strategies.

Reduced energy - related public expenditures can free significant funds for other community projects. The Municipal budgetary position can be improved through lower expenditures on energy in public buildings.

This Plan outlines the long-term strategy for managing Conservation Demand Management. The current Conservation and Demand Management Plan covers the planned conservation projects in two of the municipal facilities for the next five years (Appendix B). Further evaluation based on energy assessments will result in expensing the project portfolio and the Conservation and Demand Management Plan will be revised accordingly. Specific Plan adjustments based on the changing business environment may be required to meet the dynamics of the community needs. Additional research and planning will be necessary to establish energy consumption targets and develop initiatives for consideration during the budget process and coordination with capital forecasts and effective asset management.

Plan Implementation

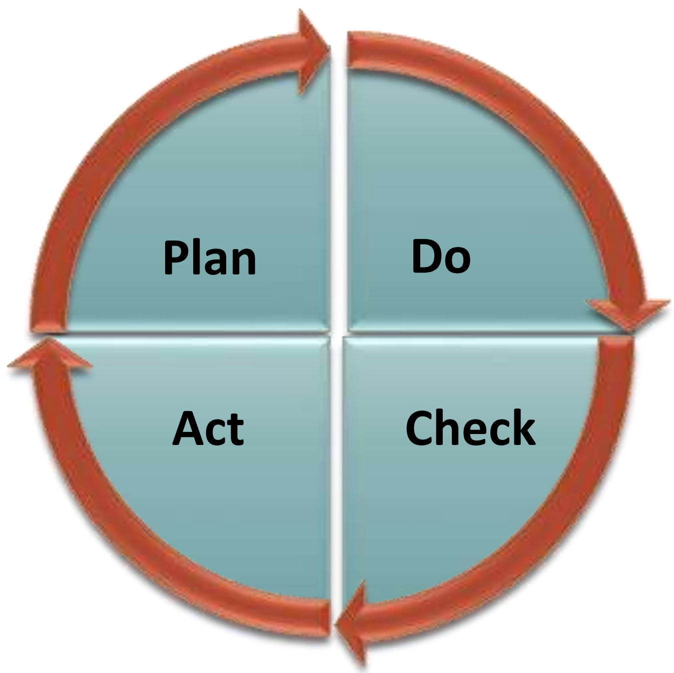
Ontario Regulation 25/23 requires increased municipal energy management and engagement. Development of an energy conservation strategy as part of an overall sustainability plan is a complex process. The main driver for a local municipality to change the way energy is used, relates to fiscal benefits and financial incentives. Energy is a manageable input to the business process, much like any other resource cost. The Town of Smooth Rock Falls is maintaining and developing current and planned services that continue to be affordable to taxpayers.

Current practices must be enhanced and new approaches must be developed. To meet these needs, the Town of Smooth Rock Falls will consider designing a comprehensive program for collecting and analyzing monthly energy billing information, and ensuring that staff is informed about energy consumption. The resulting energy costs and consumption database will be used to monitor excessive variations, targeting facility follow-up assessments, and determining areas that could be candidates for improved conservation. These monitoring enhancements will improve the Town's understanding of the bottom line impact of energy management.

In order to establish a baseline for managing energy costs, the Town has captured information critical to energy management planning. This formalizes the process involved in understanding the relative magnitude of energy costs, the possible ways to reduce energy use, energy targets that are likely to be achievable, and other associated activities that need to occur.

This CDM Plan provides the "big picture" view as an ongoing framework for optimizing overall energy use and achieving success.

CDM Planning is intended to be a process of "continuous improvement." The Town of Smooth Rock Falls follows *NRCAN, ISO 50001*'s four step plan–do–check–act management methodology, used in business for the control and continuous improvement of processes.



PLAN

Establish the energy conservation objectives and processes necessary to deliver results in accordance with the expected outputs: the energy conservation targets or goals. Start on a small scale to test possible effects and financial feasibility. Develop an Energy Conservation Demand Management Plan prioritizing budgets, resources, and timelines.

DO

Implement the plan and collect data for analysis in the following "CHECK" and "ACT" steps. Develop projects' design and execution, preparing status reports, and implementing the communication strategy.

CHECK

Study the actual results (measured and collected in "DO" above) and compare against the expected results (targets or goals from the "PLAN") to ascertain any differences. Evaluate any deviations in implementation from the plan and also evaluate the appropriateness and completeness of the plan to enable the execution, i.e., "Do".

ACT

Recommend improvements and adjustments to the initial plan; determine the course of corrections and modifications to the plan.

The Town of Smooth Rock Falls implements tools to maintain and continually improve energy conservation and demand management. Benchmarking is the process that the Town has implemented for collecting, analyzing and relating energy performance data of comparable activities to evaluate and comparing performance between or within entities.

Four Pillars for a Successful Energy Management Program

Top Management Support

Top Management shall make a commitment to allocate manpower and funds to achieve continuous improvement. To establish the energy management program, the Town should:

- ✓ Obtain Council endorsement
- ✓ Assign energy management responsibility
- ✓ Institute an energy policy

Strategy Plan

Assess Energy Performance

Understanding current and past energy use helps the Town of Smooth Rock Falls identify opportunities to improve energy performance and gain financial benefit.

- ✓ Data Collection and Management
- ✓ Establish Baselines and Benchmarks
- ✓ Analysis and Evaluation
- ✓ Conduct Technical Assessments & Audits

Set Goals

Performance goals drive energy management activities and promote continuous improvement. Setting clear and measurable goals is critical for understanding intended results, developing effective strategies, and reaping financial gains.

- ✓ Determine Scope
- ✓ Estimate Potential Improvement
- ✓ Establish Goals

Create and Implement Action Plan

Once past performance has been assessed and the goals set, an Action Plan can be created. A detailed action plan is used to ensure a systematic process to implement energy performance measures. Unlike the policy, the action plan is regularly updated, most often on an annual basis, to reflect achievements, changes in performance, and shifting priorities.

- ✓ Define Technical Steps and Targets
- ✓ Determine Roles and Resources
- ✓ Create a Communication Plan
- ✓ Raise Awareness and Motivate

Technical Ability

Investments must be made in training and systems. Staff must have adequate technical ability for analyzing and implementing energy saving options.

- ✓ Industry Seminars & Conferences
- ✓ Certified Director of Public Works
- ✓ Other Energy related training

Monitoring Systems

Evaluate Progress

Evaluating progress includes formal review of both energy use data and the activities carried out as part of the action plan as compared to your performance.

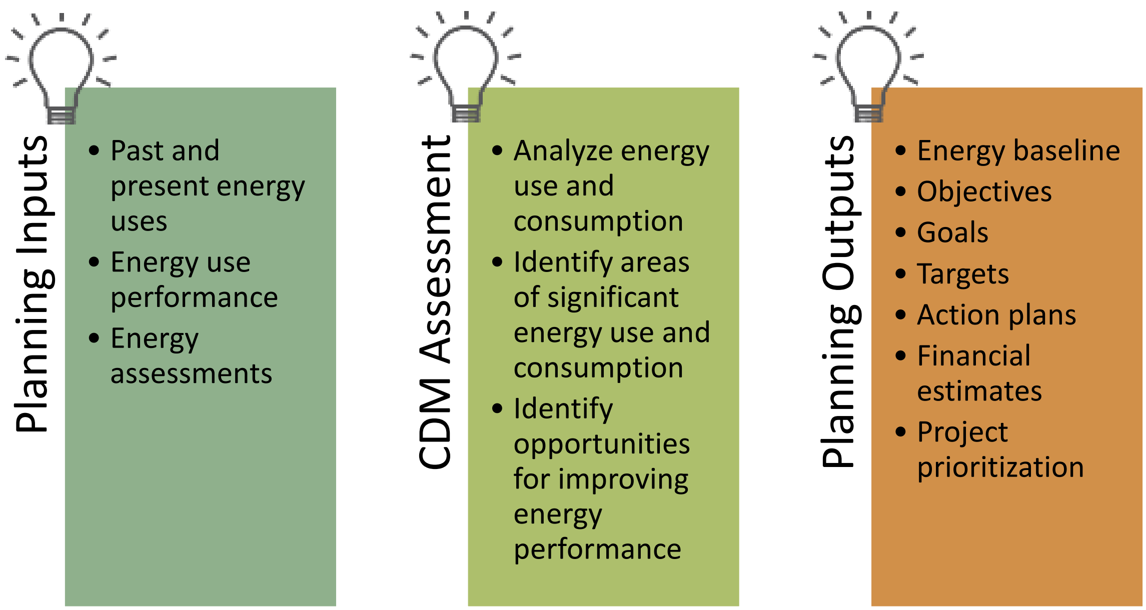
- ✓ Measure results
- ✓ Gather tracking data
- ✓ Benchmark
- ✓ Review action plan

Recognize Achievements

Providing and seeking recognition for energy management achievements is a proven step for sustaining momentum and support for your program.

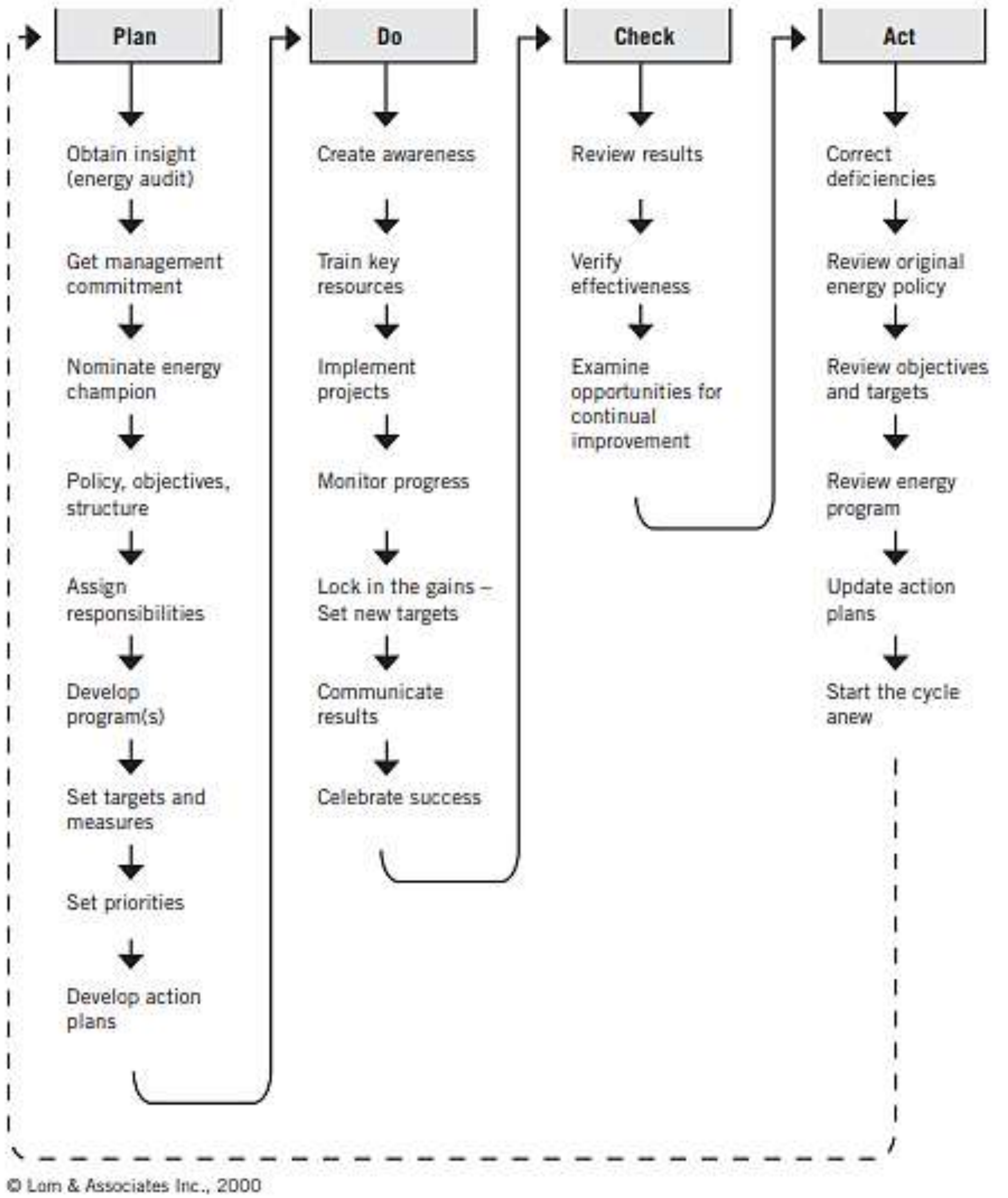
- ✓ Internal Recognition
- ✓ Determine recognition type and action
- ✓ External Recognition

CDM Planning Process Inputs and Outputs



The detailed energy conservation project planning process is visually illustrated below.

Energy Conservation Project Planning Process[7]

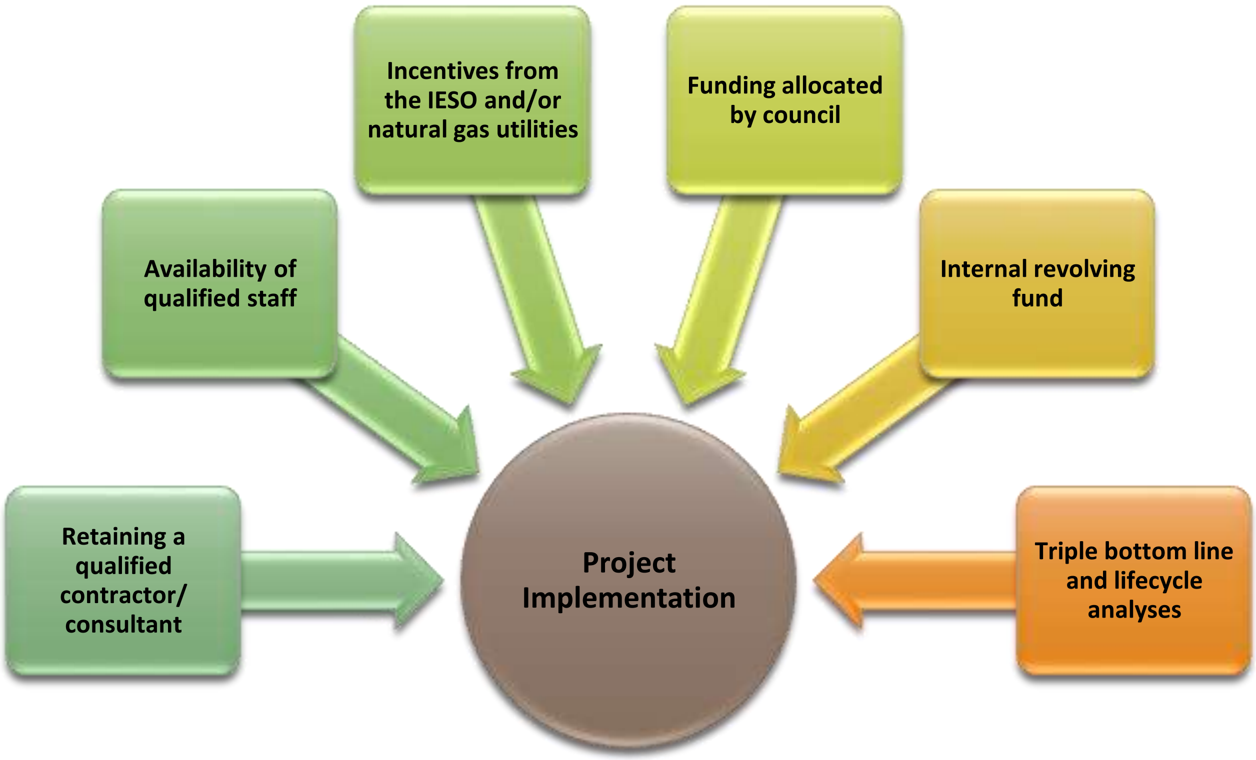


Evaluation Metric Development

Energy conservation projects will be evaluated using an internal rate of return (the rate of interest the project could generate), along with simple payback (the number of years it would take to pay off the project from the savings). Hydro cost savings and life cycle analysis will be used to derive these parameters. In addition, costlier conservation projects will be bundled with more cost-effective ones to ensure their successful implementation.

[7] Energy Efficiency Planning and Management Guide, CIPEC, 2002

Implementation of the proposed projects depends on:



Progress on projects will be monitored using the annual energy reports prepared under the regulation. A separate summary for each project will be prepared and archived.

Integration of Corporate Activities with CDM Plan

The Town of Smooth Rock Falls is fully committed to make available any information relating to municipal energy conservation initiatives in the community. The Town of Smooth Rock Falls will work with other stakeholders, agencies and organizations to achieve energy consumption and greenhouse gas emissions reduction. Public dissemination of the Conservation and Demand Management Goals and Objectives will encourage successful implementation of the Plan.

Monitoring and Evaluation

We will review and evaluate our energy plan, revising and updating it as necessary, on an annual basis within our corporate planning process.

Annual Energy and GHG Emissions Reporting and Five-Year Plan Update

Ontario Regulation 25/23 requires that the Town of Smooth Rock Falls report on the results of the CDM Plan at the end of the five-year planning period. As in this update, in the next update due in 2029, the Town of Smooth Rock Falls will provide an update to include any revisions to the current CDM Plan. The Town of Smooth Rock Falls has submitted and published all of its annual Energy and Greenhouse Emission Reports and will continue to do so annually until July 1, 2024. At that time, the revised Plan will provide:

- A description of current and proposed measures for conserving and otherwise reducing energy consumption and managing its demand for energy;
- A revised forecast of the expected results of the current and proposed measures;
- A report of the actual results achieved;
- 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; and
- Any additional Council initiatives geared at achieving or establishing new targets.

Responsibilities

Successful energy management requires the allocation of staff and resources to continually improve energy performance. The Council of the Town of Smooth Rock Falls ensures the availability of resources required to implement the energy conservation initiatives of this plan. Resources include human resources and specialized skills, organizational infrastructure, technology and financial resources.

The Town of Smooth Rock Falls' Energy Conservation Framework model includes the following layers:

Town Council

1. Approves the Conservation and Demand Management Plan and approve the financial budget and resource allocation for energy conservation projects
2. Reviews and approves on-going modifications to the Conservation and Demand Management Plan as required
3. Designates an energy management team to direct energy conservation activities
4. Provides advocacy in promoting energy conservation and GHG emission reduction
5. Provides general oversight of the Plan implementation
6. Provides leadership and promotes work culture focused on energy conservation and pollution prevention
7. Ensures that energy conservation regulatory requirements are met

CDM Team

The Town of Smooth Rock Falls will establish an organizational team dedicated to energy conservation and pollution prevention management.

The implementation of the Five Year Conservation and Demand Management Plan will focus on integrating achievement of sustainability goals with strategic planning to optimize performance and minimize implementation costs.

Energy management is also considered as a subtask for department managers. Each facility will develop and carry out sections from an integrated Performance Plan that prioritizes the Town of Smooth Rock Falls' actions toward optimized and sustainable energy consumption. Implementation will be managed through the CDM Team, ultimately working in close partnership with various stakeholders and staff.

CDM Lead

1. Designated by Council to provide execution leadership for energy conservation and pollution
2. Manages the execution and monitoring of energy conservation and pollution prevention activities with the help of department managers and senior staff
3. Develops Energy Conservation Performance indicators and reports to council.
4. Ensures that appropriate plan adjustments are made as a result of project reviews, trend analysis and energy audits and assessments
5. Monitors and facilitates energy conservation projects in conjunction with Senior Staff

Department Managers

1. Ensure that appropriate actions are taken based on CDM Key Performance Indicators from the analyses within their work unit
2. Lead execution of energy conservation projects and implementation of energy conservation measures
3. Serve as the primary technical contact and/or subject matter experts on operational and equipment functionality
4. Provide daily direction of technical activities within their work unit
5. Ensure that CDM projects and actions are in accordance with sound technical practices
6. Communicate regularly with CDM Team on technical and organizational energy optimization measures

Support Staff (Consultants and Subject Matter Experts)

1. Gather knowledge related to energy conservation and best practices
2. Apply energy conservation methodologies used within their work areas
3. Follow appropriate maintenance and other energy conservation activities for their work areas
4. Work on project execution as assigned
5. Gather energy conservation reporting data as assigned

Communication, Awareness and Training

The Town of Smooth Rock Falls has recognized the importance of a community-wide natural resources conservation and environmental preservation culture, driven by the municipal government and key stakeholders. Internal communication or communication within the organization is important for employees to understand current energy consumption issues and the Corporation's position with respect to their management. This helps staff to be positive and active in implementation of the Town of Smooth Rock Falls' energy conservation initiatives and improve their energy conservation behavioural performance while at work and in the community.

All staff has an environmental contribution to make whether they have an operational, maintenance, planning or support function. Internal communications include training programs, newsletters, notice boards, staff briefings and toolbox talks.

The Town of Smooth Rock Falls also maintains external communication to encourage public understanding and acceptance of the organization's efforts to improve its energy performance. External parties may include shareholders, regulators, local government agencies, adjacent community, environmental groups, customers, community groups and the media.

The Town of Smooth Rock Falls will release specific information to the public predominantly in the form of the annual GHG report to the Ministry of Energy, and will provide greater extent, through the Corporate website, newsletters, factsheets and media releases.

The Town of Smooth Rock Falls pursues community involvement in many areas of its operations and sponsors many local community events and programs. These provide opportunities to communicate the Town's commitment to moving toward a more energy conscious and efficient future.

Training is an essential element in ensuring safe and environmentally friendly operations, compliance with Town's Strategic directives and legal requirements. Training covers the areas of environmental awareness, energy conservation practices, compliance issues and energy efficient management. Training may be related to specific equipment, processes and monitoring of energy conservation initiatives. There is a consistent effort for identification of training needs, drawing up a training plan and creating awareness.

Induction sessions will be implemented for new staff and contractors. The Town of Smooth Rock Falls ensures the development the technical competencies so that any person performing tasks will have the potential to cause a significant energy conservation impact. The Town will implement a dynamic process for the submission and processing of staff suggestions for energy efficiency improvements.

Timelines

Timelines are assigned based on measures/facility prioritization. These timelines allow for flexibility during implementation, and will be dependent upon the costs/incentives and business decisions driven by the Town of Smooth Rock Falls. 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.

Administration

As per the requirements of O. Reg. 25/23, the Energy Conservation and Demand Management Plan is available for public access through:

- ✓ Publishing the Five Year Conservation and Demand Management Plan on the Town of Smooth Rock Falls web site at https://www.smoothrockfalls.ca
- ✓ Printed form, available for the public, at Town of Smooth Rock Falls office

Incentive Funding

To ensure that the Town of Smooth Rock Falls will take advantage of all funding and grant opportunities related to energy efficient projects, the Town will liaise with representatives from local utility providers. Town staff and utility representatives are in a unique position to review current and future process improvements, program implementations and projects that can meet future funding requirements. As funding opportunities arise that are suitable for specific energy conservation projects, Town Staff will report to Council and clearly outline the cost savings associated with a successful application.

Conclusions and Recommendations

Conclusions

- ✓ The Town of Smooth Rock Falls is on its way to the implementation of a structured Conservation Program
- ✓ The Town of Smooth Rock Falls plans to complete energy audits to support its investment decision in technologies to reduce electricity expenditures and revise the current plan where appropriate
- ✓ Reasonable targets must be set and targeted based on analysis through the facility assessments
- ✓ A structured implementation framework has been set to secure the success of the CDM initiative

Recommendations

- ✓ Council adoption of the updated CDM plan
- ✓ Develop a Conservation and Demand Management Program that will allow for the operationalization of the CDM Plan.
- ✓ Complete the additional energy audits and assessments across the facilities as necessary and provide the concise details to the council for review and approval
- ✓ Revise Plan as required based on analysis, energy assessments and energy consumption trends
- ✓ Consider building envelop improvements for the Reg Lamy Arena – reflective ceiling upgrades to limit the heat transfer rates
- ✓ For Building utilizing roof top units, consider partially upgrading the units with heat pumps, as they typically can be integrated on the front end of the processing unit with significant cost and energy savings as compressors components do not need to be replaced
- ✓ For boiler systems and building utilizing the hydronic systems for heating, consider some of the additives that affect the surface tension of the liquid to gas phase transitions
- ✓ The three primary buildings under Municipal ownership that should be targeted for assessments, upgrades and retrofits should be the Arena, Water Treatment Plant, and Wastewater Treatment plant. These facilities consume the most amount of energy with many different processes that can be optimized typically.
- ✓ Revisit the energy assessments toward the end of the 4th year period to facilitate the planning process in the next stages

Schedule 1:
Actual 2012-2022 Energy Consumption

A lot of changes have occurred to the Town's facilities since the last CDM update. That said, even though a facility may have experienced a minor increase in natural gas consumption from 2012 to 2022, the electricity consumption has seen a drastic shift downwards over the years.

Table S-1: Change in Electricity Consumption (2012-2022)

Total Annual Electricity Consumption (kWh)					
Facility	**2012**	**2017**	**2018**	**2022**	**2012-2022 Electricity Consumption Variance**
Reg Lamy Arena	190,444	390,960	394,080	346,080	**81.7%**
Street Lights	147,714	35,676	35,856	35,856	**-75.7%**
Street Lights 2	117,918	54,864	54,864	54,864	**-53.5%**
Municipal Garage	27,009	21,920	22,479	16,493	**-38.9%**
Mattagami Centre	121,252	112,962	113,367	84,307	**-30.5%**
Water Treatment Plant	259,097	226,080	242,080	218,254	**-15.8%**
Community Hall	16,570	30,407	37,235	32,311	**95.0%**
Sewage Treatment Plant	618,901	522,000	700,505	512,968	**-17.1%**
Pool	20,737	19,658	18,138	18,125	**-12.6%**
Town Hall	21,095	21,637	17,969	15,323	**-27.4%**
Fire Hall	15,801	18,089	17,845	21,865	**38.4%**
TOWN TOTAL	**1,556,538**	**1,454,253**	**1,654,418**	**1,356,446**	**-12.9%**

Table S-2: Change in Natural Gas Consumption (2012-2022)

Total Annual Natural Gas Consumption (m^3)					
Facility	**2012**	**2017**	**2018**	**2022**	**2012-2022 Natural Gas Consumption Variance**
Reg Lamy Arena	79,639	104,349	99,496	115,852	**45.5%**
Street Lights	-	-	-		
Street Lights 2	-	-	-		
Municipal Garage	35,702	25,682	24,844	23,038	**-35.5%**
Mattagami Centre	31,707	32,830	24,844	29,239	**-7.8%**
Water Treatment Plant	39,206	37,623	33,626	11,570	**-70.5%**
Community Hall	15,485	16,746	16,900	16,334	**5.5%**
Sewage Treatment Plant	181	2,357	2,593	34,076	**18726.5%**
Pool	18,995	15,662	24,844	7,539	**-60.3%**
Town Hall	17,004	14,672	14,838	1,463	**-91.4%**
Fire Hall	9,856	10,709	11,637	9,011	**-8.6%**
TOTAL	**247,775**	**260,630**	**253,622**	**248,122**	**0.1%**

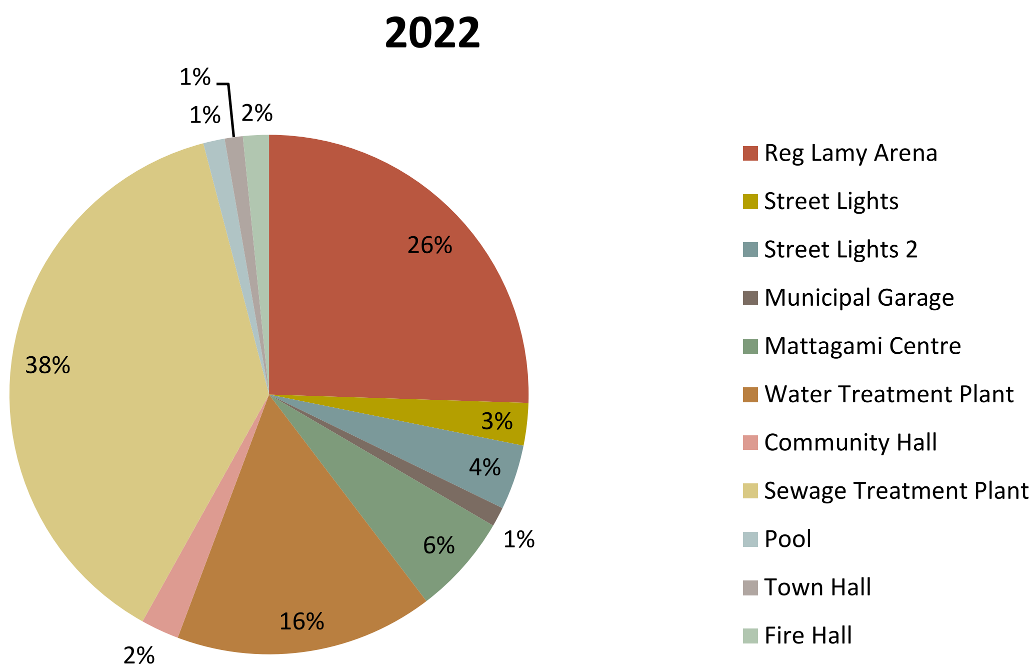


Figure S-1: 2022 Town Electricity Consumption Profile

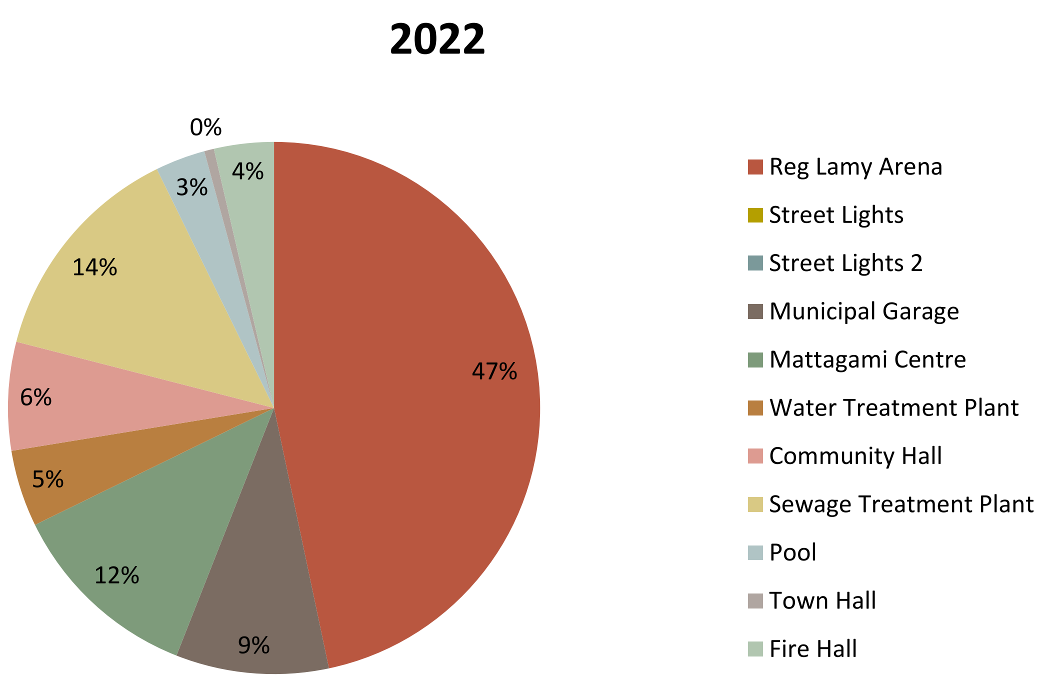


Figure S-2: 2022 Town Natural Gas Consumption Profile

Schedule 2:
Council Energy Mandate

Council Energy Mandate

WHEREAS the Town of Smooth Rock Falls considers itself in being responsible stewards of all resources, and has reflected this in the 20-year strategic plan as one of the key objectives

FURTHER, the town recognizes that energy is a resource that must be efficiently and properly managed

AND FURTHER, the Town of Smooth Rock Falls is committed to delivering sustainable and reliable cost effective services to the community, while meeting regulatory requirements and obligations

AND FURTHER, the Town of Smooth Rock Falls acknowledges that energy is an operating expense, which can be controlled, where the anticipated fiscal savings will benefit the local community

AND FURTHER, the Town of Smooth Rock Falls will continue to reduce energy consumption and mitigate costs through the wise consumption of energy

AND FURTHER, the Town of Smooth Rock Falls recognizes the need to build conservation awareness to develop energy management understanding throughout the Town, and all must pursue that responsible energy management

AND FURTHER, the Council of the Town of Smooth Rock Falls will designate a leadership team to manage initiatives and implement the Five Year Conservation Demand Management Plan

AND FURTHER, Council will ensure that the necessary resources are budgeted and allocated to implement the goals and objectives as recommended in the Five Year CDM Plan

AND FURTHER, it is also recognized that this initial Plan will evolve as knowledge and experience allows for additional improvements and efficiencies

THEREFORE, be it resolved that that the Town of Smooth Rock Falls endorse the goals and vision as outlined in the Five Year CDM Plan, and support the actions and initiatives necessary to meet these goals.

Schedule 3:
Council Resolution Adopting 2024 CDM Plan Update

Town of Smooth Rock Falls

File No:
Item No: AIR - 20242925
Agenda Date: 03 Jun 2024

Staff Responsible: Johanna Berube
Prepared For: Council

RE: Adoption of Minutes

DESCRIPTION
Adoption of Minutes

RECOMMENDATION
the May 21st, 2024 Regular Council meeting minutes be adopted as circulated

	Department Manager:	
	Finance Manager:	
	City Manager:	

CAO RECOMMENDATION: __X__ YES _____ NO

Comments:

Yvan Marchand

CAO-Treasurer

CORPORATION OF THE TOWN OF SMOOTH ROCK FALLS
MEETING MINUTES

Meeting:	***REGULAR COUNCIL***		
Date of Meeting:	May 21, 2024 6:30 PM	**Location:**	Council Chambers

Roll Call			**Present**
Council	Mayor	Patrick Roberts	X
	Councillor	Daniel Alie	X
	Councillor	Leslie Gagnon	X
	Councillor	Denise Pelletier	X
	Councillor	Angèle Rochon	X
Staff	CAO/Treasurer	Yvan Marchand	X
	Deputy Clerk	Johanna Berube	X
	PW Coordinator	Linda Ajdinovic	X
	Ec. Dev. Officer/Rec	Shannon Michaud	X
Invited Guest			

Declaration of Pecuniary Interests	
Who	**Item #**

Meeting Minutes

Item No.	**Discussion Points Issue Raised Decisions Made**	**Action Item**	**Owner**	**Due Date**
2.	**Land Acknowledgement**			
4.	**Approval of Agenda**			
	Resolution #2024-156 **Moved By: Angele Rochon** **Seconded By: Leslie Gagnon** **BE IT RESOLVED THAT** the agenda be adopted as circulated. **CARRIED**			
5.	**Adoption of Minutes**			
	Resolution #2024-157 **Moved By: Leslie Gagnon** **Seconded By: Dan Alie**			

	BE IT RESOLVED THAT the May 6th, 2024 Regular Council meeting minutes be adopted as circulated. **CARRIED**			
6.	**Petitions, Delegations and Presentations**			
6.1	Delegation Request - Mike Granger			
	Resolution #2024-158 **Moved By: Denise Pelletier** **Seconded By: Dan Alie** **BE IT RESOLVED THAT** Council receives the presentation from Mike Granger regarding a proposed lot purchase. **DEFEATED**			
7.	**Business Arising From Minutes**			
8.	**Mayor's Report**			
9.	**Reports from Committees and Municipal Officers**			
9.1	Minutes from Boards and Committees			
	Resolution #2024-159 **Moved By: Denise Pelletier** **Seconded By: Dan Alie** **BE IT RESOLVED THAT** Council receive the February 29th and March 26th, 2024 Board of Health - Porcupine Health Unit Minutes. **CARRIED**			
9.2	April 2024 Monthly Administration Highlights and Community Suggestions Report			
	Resolution #2024-160 **Moved By: Angele Rochon** **Seconded By: Leslie Gagnon** **BE IT RESOLVED THAT** Council accepts this report as presented. **CARRIED**			
9.3	Health and Safety and Violence and Harassment Policy Statment			
	Resolution #2024-161 **Moved By: Angele Rochon** **Seconded By: Dan Alie**			

	BE IT RESOLVED THAT the Health and Safety policy statement as well as the Violence and Harassment policy statement be adopted as circulated. **AND FURTHER THAT** a copy of the policy be posted in all municipal workspaces. **CARRIED**			
9.4	Beautification Committee Projects Update			
	Resolution #2024-162 **Angele Rochon** **BE IT RESOLVED THAT** council accepts the update provided by administration. **AND FURTHER THAT** approves the picnic table plan. **AND FURTHER THAT** approves the commemoration donation site locations. **CARRIED**			
9.5	2024 Budgeted Projects and Purchases - Update Report			
	Resolution #2024-163 **Moved By: Angele Rochon** **Seconded By: Leslie Gagnon** **BE IT RESOLVED THAT** Council accepts the update report on the 2024 budgeted projects and purchases as presented. **CARRIED**			
9.6	Smooth Rock Falls Water and Wastewater Systems Report for January to March 2024			
	Resolution #2024-164 **Moved By: Angele Rochon** **Seconded By: Denise Pelletier** **BE IT RESOLVED THAT** Council accepts the Smooth Rock Falls Water and Wastewater Systems 2024 - Q1 report as presented. **CARRIED**			
9.7	Energy Conservation and Demand Management (CDM) Municipal Plan			
	Resolution #2024-165 **Moved By: Angele Rochon** **Seconded By: Dan Alie**			

	BE IT RESOLVED THAT Council accepts the Energy Conservation and Demand Management (CDM) Plan report as presented. **CARRIED**			
10.	**Correspondence**			
10.1	Public Health Ontario Labs - Motion to Support Request			
	Resolution #2024-166 **Moved By: Dan Alie** **Seconded By: Angele Rochon** **BE IT RESOLVED THAT** Council provides direction to pass a motion to support Loyalist Township's requests regarding Public Health Ontario Labs. **WHEREAS** the mission of Public Health Ontario (PHO) is to "enable informed decisions and get actions that protect and promote health and contribute to reducing health inequities", there are grave concerns that the closure of six community-based PHO labs will increase health inequities, especially for rural communities; and **WHEREAS** combined these labs collect and process thousands of water samples and time sensitive medical tests each day; and **WHEREAS** there are grave concerns about the integrity of samples being compromised if travel time is increased by centralizing all tests to a few locations; and **WHEREAS** these labs already process overflow tests and samples when labs such as Toronto and Ottawa cannot keep up to demand and many scaled up to meet demand during the COVID-19 pandemic; and **WHEREAS** frequent drinking water testing services is vital for Ontarians who draw their water from private drinking water systems (i.e. wells) and protecting groundwater quality and quantity is a shared responsibility. **NOW THEREFORE BE IT RESOLVED THAT** As stewards of care for the Safe Drinking Water Act, 2022, Council of Loyalist Township urges the provincial government to			

	take caution against acting on the recommendations stated in the aforementioned audit report. **AND FURTHER THAT** this motion be circulated to Honourable Sylivia Jones, Minister of Health, Shelby Kramp-Neuman MP of Hastings-Lennox and Addington, Ric Bresee MPP of Hastings-Lennox and Addington. **CARRIED**			
10.2	Blue Box Program Non-Eligible Sources - Request for Support			
	Resolution #2024-167 **Moved By: Angele Rochon** **Seconded By: Dan Alie** **BE IT RESOLVED THAT Whereas** under Ontario Regulation 391/21: Blue Box, producers are fully accountable and financially responsible for their products and packaging once they reach their end of life and are disposed of, for 'eligible' sources only; **AND WHEREAS** 'ineligible' sources which producers are not responsible for including businesses, places of worship, daycares, campgrounds, public-facing and internal areas of municipal-owned buildings and not-for-profit organizations, such as shelters and food banks; **AND WHEREAS** should a municipality continue to provide services to the 'ineligible' sources, the municipality will be required to oversee the collection, transportation, and processing of the recycling, assuming 100% of the costs; **THEREFOR BE IT RESOLVED THAT** the Council of the Corporation of the Town of South Bruce Peninsula hereby request that the province amend Ontario Regulation 391/21: Blue Box, so that producers are responsible for the end-of-life management of recycling products from all sources. **AND FURTHER THAT** Council hereby request the support of all Ontario municipalities; **AND FURTHER THAT** this resolution be			

	forwarded to the Honourable Doug Ford, Premier of Ontario, the Honourable Andrea Khanjin, Minister of the Environment, Conservation and Parks, the Honourable Rick Byers, MPP Guy Bourgouin. **CARRIED**			
10.3	Resolution from the Municipality of Calvin regarding provincial and national fire fighting strategy			
	Resolution #2024-168 **Moved By: Leslie Gagnon** **Seconded By: Angele Rochon** **BE IT RESOLVED THAT** the resolution from the Municipality of Calvin regarding provincial and national fire fighting strategy be received. **CARRIED**			
11.	**Resolutions**			
12.	**By-Laws**			
12.1	2024-11; Being a By-Law to adopt schedules of user fees and service charges for the Town of Smooth Rock Falls			
	Resolution #2024-169 **Moved By: Angele Rochon** **Seconded By: Dan Alie** **BE IT RESOLVED THAT** By-Law 2024-11; Being a By-Law to adopt schedules of user fees and service charges for the Town of Smooth Rock Falls be given a second and a third and final reading and hereby passed this 21st day of May 2024. **CARRIED**			
12.2	2024-15; Being a By-law to licence, govern and regulate food vending vehicles			
	Resolution #2024-170 **Angele Rochon** **BE IT RESOLVED THAT** 2024-15; Being a By-law to license, govern and regulate food vending vehicles for the Town of Smooth Rock Falls be given a first reading this 21st day of May 2024. **CARRIED**			
13.	**Other Business**			

13.1	Concession Lease RFP (Arena Canteen)			
	Resolution #2024-171 **Moved By: Dan Alie** **Seconded By: Angele Rochon** **BE IT RESOLVED THAT** Council accepts the Terms and Conditions of the Concession Lease and direct administration to proceed with the issuance of the Request For Proposal of the Concessions Lease. **CARRIED**			
13.2	Northern Chamber of Commerce Golf Tournament			
	Resolution #2024-172 **Moved By: Leslie Gagnon** **Seconded By: Angele Rochon** **BE IT RESOLVED THAT** council accepts the report and provides further direction. **AND FURTHER THAT** 3-4 municipal employees will be participating. **CARRIED**			
13.3	Inclusive Community Grants			
	Resolution #2024-173 **Moved By: Angele Rochon** **Seconded By: Dan Alie** **BE IT RESOLVED THAT** council provides direction to apply to the Inclusive Community Grants for $27,245.35 at 100% funding. **CARRIED**			
14.	**Announcements**			
	Public Works Coordinator advised Council that the start up meeting for the Catherine Street Project will commence May 23, 2024.			
	Councillor Gagnon attended LCC Meeting and will bring back the updated minutes.			
	Councillor Rochon would like to bring a request to Council for a donation/sponsorship regarding a resident that is joining the world cup. Councillor Rochon requested that administration brings back the Jake Brake By-Law for discussion.			

	Councillor Rochon requested for administration to review having a “question period” added on to the agenda.			
	Councillor Alie will not be present at the June 3, 2024 Regular Council Meeting.			
15.	**Closed Session**			
	Resolution #2024-174 **Moved By: Leslie Gagnon** **Seconded By: Denise Pelletier** **BE IT RESOLVED THAT** this meeting move into Closed Session at 8:19 p.m. for the following items: • Minutes • Labour relations or employee negotiations as per section 239 (2) (d) of the Municipal Act 2001. **CARRIED**			
	Resolution #2024-175 **Moved By: Denise Pelletier** **Seconded By: Leslie Gagnon** **BE IT RESOLVED THAT** Council reconvenes at 9:30pm for procedural matters. **CARRIED**			
	Resolution #2024-176 **Moved By: Denise Pelletier** **Seconded By: Leslie Gagnon** **BE IT RESOLVED THAT** this meeting move into Closed Session at 9:31p.m. for the following items: • Labour relations or employee negotiations as per section 239 (2) (d) of the Municipal Act 2001. **CARRIED**			
4.	**Meeting Reconvene**			
	Resolution #2024-177 **Moved By: Denise Pelletier** **Seconded By: Dan Alie** **BE IT RESOLVED THAT** this meeting reconvene at 9:40 p.m.			

	CARRIED			
5.	**Report from Closed Session**			
	During Closed Session, Council discussed the hiring of the Municipal Clerk and reviewed the salary grid for the CA0-Treasurer which will be brought back in open at the June 3, 2024 Regular Council.			
16.	**Adjournment**			
	Resolution #2024-178 **Moved By: Leslie Gagnon** **BE IT RESOLVED THAT** this meeting adjourn at 9:40 p.m. **CARRIED**			

APPROVED
Mayor
Clerk