



ENERGY CONSERVATION AND DEMAND MANAGEMENT PLAN

2023-2027

Executive Summary

The Municipality of Lambton Shores (the Municipality) has been committed to corporate energy management since the early 2000s.

In 2014, the Municipality submitted its first Corporate Energy Conservation and Demand Management (CDM) Plan to the Ontario Ministry of Energy in compliance with the former Ontario Regulation 397/11 Green Energy Act, replaced by the former Ontario Regulation 507/18 Electricity Act, and again replaced by the current Ontario Regulation 25/23 made under the Electricity Act, 1998. This regulation mandates Municipalities to document and report on the results of their CDM plans and update their CDM every five (5) years.

This report meets the regulatory requirements by:

- Documenting energy management initiatives and reporting energy and natural gas statistics throughout the Municipality; and
- Outlining the goals and initiatives to be undertaken by the Municipality over the next five (5) years.

Ontario Regulation 25/23

In February of 2023, the Provincial Government introduced Ontario Regulation 25/23 (O.Reg. 25/23) under the Electricity Act, 1998. This regulation requires certain public agencies – Municipalities, Municipal Service Boards, School Boards, Post-Secondary Educational Institutions, and Hospitals – to report on their energy consumption and greenhouse gas (GHG) emissions annually. This also mandates that public agencies develop, and update every five (5) years, an Energy Conservation and Demand Management (CDM) Plan. The intent of this regulation is to help the broader public sector (BPS) organizations better understand and report their energy consumption, help benchmark, encourage energy conservation and demand management activities within their organizations, and then ultimately make this information available to its public.

In order to comply with O.Reg. 25/23 – which supersedes the previous O.Reg. 397/11 and O.Reg.507/18 – the Municipality is required to submit annual energy consumption and GHG emissions for each calendar year for facilities that the Municipality owns or leases, that are:

- a) The building or facility is heated or cooled and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption; or
- b) The operation is related to the treatment of water or sewage, whether the building or facility is heated or cooled, and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption.

2014 Energy Conservation and Demand Management Plan Results

The Municipality's 2014 CDM Plan covered its plan to create an energy conscientious workforce and pursue energy conservation measures and best practices into all operations and facilities where possible. This plan covered a period of 2014 through to 2019 and through reporting captured the following:

- Facilities and buildings owned and operated by the Municipality; and
- Water and wastewater distribution, storage, treatment, and pumping facilities and operations.

The 2014 CDM was developed according to the Ministry of Energy's direction to provide the Municipalities annual energy consumption information to the public and set goals and actions for conserving energy and reducing GHG emissions. The goals set forth in this CDM are as follows:

- Commitments
 - Declaration of Commitment: The Municipality of Lambton Shores will allocate the necessary resources to develop and implement a strategic energy management plan in an attempt to reduce our energy consumption and its related environmental impact.
 - Vision: The Municipality of Lambton Shores will exercise stewardship in our use of finite energy resources to demonstrate leadership, optimize our delivery of services, and enhance the overall quality of life in our community.
 - Goals: To continuously improve the energy efficiency of municipal facilities and processes in order to reduce operating costs, energy consumption and the contribution of greenhouse gas emissions.
 - Overall Target: We will endeavour to create an energy conscientious workforce and pursue energy conservation measures and best practices into all operations where possible.
 - Objectives: To implement all programs and processes identified in this Plan. This will include developing advanced statistical energy tracking normalized to weather conditions.
- Organizational Understanding
 - Renewable Energy Utilized or Planned: The Municipality of Lambton Shores aspires to reduce the environmental impacts of its operations where possible. The utilization of renewable energy in the form of rooftop solar photovoltaic systems on the LEED® Certified Legacy Centre shows leadership in the promotion and development of renewable energy systems that are compatible with our asset management and land use planning objectives.
- Resources Planning
 - Energy Leader: We will clearly designate leadership and overall responsibility for corporate energy management.
- 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 time lines within the resources constraints that apply.
 - Asset Level: We use the corporate energy leader to facilitate the implementation of facility level business procedures and communication initiatives, including energy performance reporting.
- Review

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

The Municipality has been tracking and providing annual reports on corporate energy consumptions and activities since 2012 which also helps towards the Municipalities Strategic Goals through Community Growth and Support, Infrastructure Improvements, and Governance and Organizational Management.

The 2014 CDM also set forth the following programs, processes, and projects that were to be worked on during that four (4) year period:

Programs		
Energy Awareness in Staff Meetings	A program that would add energy awareness and consumption data to team meetings.	In Progress
Employee Participation Program	Staff are invited to engage in providing comments on existing process or new ideas.	In Progress
Case Studies Success	Detailed records are kept on energy initiatives with case study done and presented.	In Progress
Processes		
Energy Reporting	Energy consumption reports would be created and distributed to department heads on a regular basis to allow appropriate action to be taken.	Completed Yearly
Projects		
Energy Auditing of Facilities	Utilize services of AMO-LAS energy specialists to complete energy audits of municipal administrative and operational facilities.	In Progress
Forest STP UV System	Investigate implementing control measures to reduce UV usage.	Not Completed
Arkona STP Improved Temperature Control	Replace thermostats with programmable thermostats to control temperature setbacks.	Not Completed
PS2 – wet well pumps	Investigate implementation of smaller pumps.	Completed
Arkona STP Aeration Diffusers	Investigate replacing existing diffusers with fine bubble diffusers.	Not Completed
LED Streetlight Replacement Program	Investigate if an LED streetlight replacement program would be possible.	In Progress – Largely Complete.

For full coverage between 2014 to 2020, as reporting until O.Reg. 25/23 was on a two (2) year reporting lag, the following Figure A and Figure B detail energy and natural gas usage results that shows a general reduction over time (noting that reporting requirements changed over this duration).

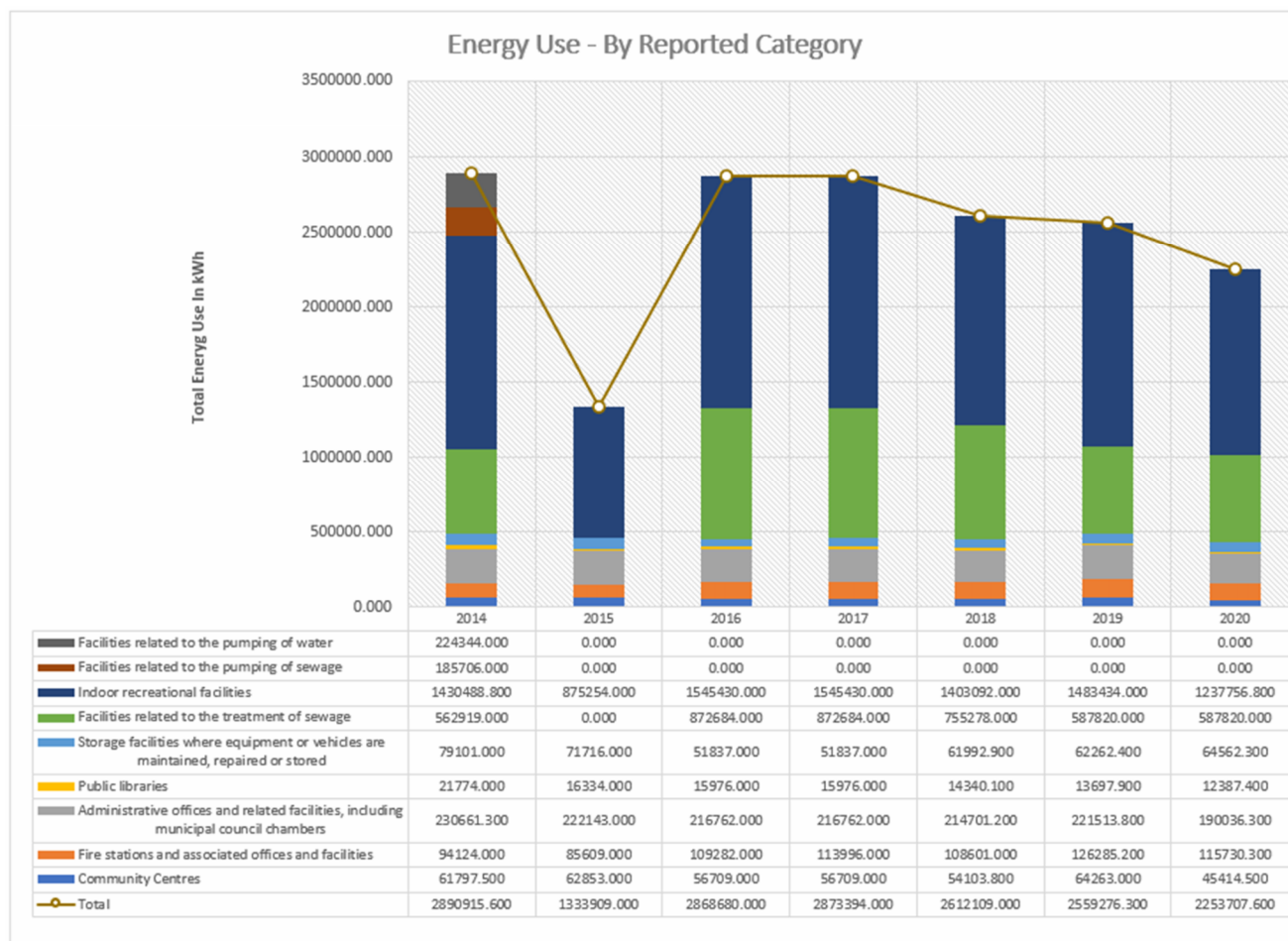


Figure A – Total Energy Use – By Reported Category (Between 2014-2020)

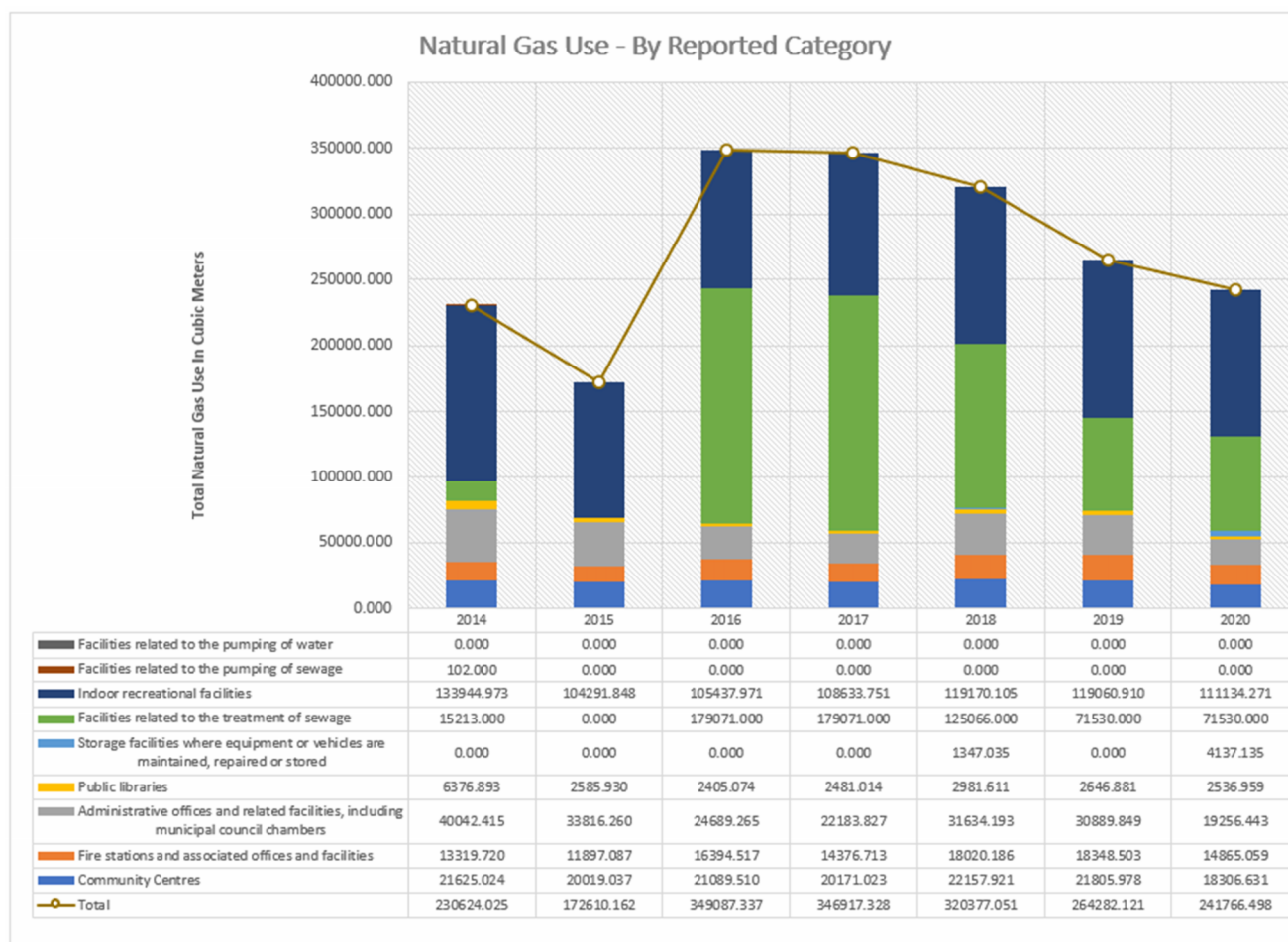


Figure B – Total Natural Gas Use – By Reported Category (Between 2014-2020)

2023-2027 Energy Conservation and Demand Management Plan

This 2023-2027 CDM Plan is built upon the foundation laid by the 2014 CDM Plan and supports the Municipalities Strategic Goals.

The goals set forth in this CDM were developed by inter-departmental consultation, reviewing those actions undertaken as part of the 2014 CDM, and analysing energy use and costs in the last five (5) years. The 2023-2027 CDM proposes the following key initiatives, energy standards, and achievable measures and commitments:

- Improving energy efficiency within Municipality owned and operated facilities where possible;
- Reducing GHG emissions and energy consumption in day-to-day operations where possible;
- Extending the lifecycle of Municipal assets where possible;
- Maximizing fiscal resources through direct and indirect energy cost avoidance;
- Continually monitoring energy consumption and utility usage for Municipality owned and operated assets;

- Demonstrating leadership and awareness within the Municipality by creating a culture of conversation and designating overall leadership for corporate energy management; and
- Setting achievable measures and targets to reach.

This CDM will be a live document that is continually monitored and updated, providing a roadmap to continue to develop and improve the Municipalities approach to energy conservation and demand management, all while continuing to comply with the requirements of O. Reg 25/23 and any future revisions.

Part of development of these goals was benchmarking the Municipalities 2014 CDM results, in addition to other surrounding entities results, to understand whether the goals and targets were on par with others, to understand if there were any industry innovations that are worth considering, and to capture lessons learned for continuous improvement.

As such, the Municipality is looking to implement the proposed measures while continuing to promote successful conservation practices. The Municipality is aiming to reduce its energy consumption within its facilities by 1-4% between 2023 through to the end of 2027. Proposed measures to support this are as follows:

Programs		
Energy Awareness in Staff Meetings	A program that would add energy awareness and consumption data to team meetings.	Ongoing
Employee Participation Program	Staff are invited to engage in providing comments on existing process' or bring forward new ideas.	Ongoing
Case Studies Success	Detailed records are kept on energy initiatives with case study(ies) done and presented.	Ongoing
Processes		
Energy Reporting	Energy consumption reports would be created and distributed to department heads on a regular basis to allow appropriate action to be taken.	Ongoing
Continuous Improvement	Encourage staff to look at new/existing continuous improvement tools and processes and potential areas for improvement.	Ongoing
Projects		
LED Streetlight Replacement Program	Complete remaining streetlight LED conversion program.	Ongoing
Construction and Occupancy of New Municipality Office	Construction completion and amalgamation of all Municipality of Lambton Shores offices to a centralized location. The new building is a net-zero structure that includes features such as solar panels and automated HVAC infrastructure.	Completed
Thedford Booster Station Rehabilitation	Rehabilitation of the Thedford Booster Station will be taking place in 2023 that will include replacement of existing pumps with vertical turbine pumps, infrastructure, structural, and electrical upgrades.	Ongoing
HVAC Replacement	Includes replacement of seven (7) existing units with fully automated system that includes remote access at the Port Franks Community Centre.	Ongoing

HVAC Replacement	Two (2) rooftop units for replacement at the Shores Recreation Centre completed in 2021/2022.	Completed
LED Lighting Conversion	Shores Recreation Centre completed LED conversion in 2020 and 2022.	Completed
LED Lighting Conversion	Legacy Recreation Centre completed LED conversion in 2019 and 2023.	Completed
LED Lighting Conversion	Arkona Community Centre completed LED conversion in 2022.	Completed
LED Lighting Conversion	Port Franks Community Centre and Thedford Village Completed to be completed in 2023.	Ongoing

The proposed measures will be reviewed during annual budget review and discussions. These measures may change as priorities of Council are altered, better opportunities come forward, or technologies become available that could be an improvement.

Plan Preparation, Approval, and Energy Leader

This plan was prepared and will be maintained by the Infrastructure Manager. The Infrastructure Manager is also the designated Energy Leader.

The Municipality of Lambton Shores Council and Staff are committed to energy conservation and demand management. This plan was adopted by Council at the June 6, 2023 Council meeting.

Public Availability

The Municipality of Lambton Shores Plan will be made available to the public on the Municipal website, www.lambtonshores.ca.

Physical copies will be made available at the municipal office located at 9577 Port Franks Road, Thedford, ON N0M 2N0.

Conclusion

The 2023-2027 Energy Conservation and Demand Management Plan for the Municipality of Lambton Shores will assist the Municipality in meeting energy related goals, reporting requirements as per O.Reg. 25/23, and striving for continuous improvement related to both industry best practices and internal practice improvements. These goals will be established annually through Council's approved budget.