



Energy Conservation and Demand Management Plan Update

June 25, 2024



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1.0 INTRODUCTION

1.1 Background

Municipal environmental, societal, and fiscal pressures accentuate the need for an Energy Conservation and Demand Management (CDM) Plan.

Environmental

Canada's total greenhouse gas (GHG) emissions in 2022 were 708 megatonnes (Mt) of carbon dioxide equivalent (CO₂eq), or 16.5% (100 Mt) above the 1990 emissions of 591 Mt. GHGs trap heat in the Earth's atmosphere, just as the glass of a greenhouse keeps warm air inside. Human activity increases the amount of GHGs in the atmosphere, contributing to a warming of the Earth's surface. This is called the enhanced greenhouse effect. Over the past 200 years, humans have released GHGs into the atmosphere primarily from burning fossil fuels. As a result, more heat is being trapped and the temperature of the planet is increasing. Sea levels are rising as Arctic ice melts, and there are changes to the climate, such as more severe storms and heat waves. The derecho storm of May 2022 many believe was caused by rising GHG emissions. All of this impacts the environment, the economy and human health.¹

Societal

The 2003 electricity blackout heightened societal concerns surrounding the stability and security of our energy supply. Energy has been imbedded into most societal practices. If energy consumption is not managed appropriately, the frequency of energy interruptions and therefore, the subsequent societal disruption associated with these interruptions will increase.

Fiscal

The fossil fuels traditionally used for the generation of energy are becoming no longer financially accessible or environmentally acceptable. This has resulted in the promotion of renewable energy generation which comes with an additional expense. The Province of Ontario's long-term energy plan released in December of 2013 projected a 42-per-cent jump in home energy bills by 2018, climbing to 68 per cent by 2032. The cost for industrial enterprises will also rise by 33 per cent in the next five years and 55 per cent in the next 20 years. Natural gas prices are also projected to trend upward in the long-term as stricter US air pollution rules aimed at

¹ Environment Canada website (<http://www.ec.gc.ca>)

reducing emissions from utility smokestacks (mainly at coal plants) will most likely prompt US electricity generators to close as many as 20% of the coal burning facilities in the US.²

With the repeal of the *Green Energy Act*, 2009, O.Reg. 397/11 (Energy Conservation and Demand Management Plans) was moved to the Electricity Act, 1998 and re-named as O. Reg 507/18 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans). No changes were made to the Regulation's requirements requiring Broader Public Sector (BPS) organizations such as municipalities to develop a CDM plan and update it every five (5) years. This updated CDM plan was developed in compliance with the regulation and covers the period from 2024 to 2028.

These recent developments set the foundation for developing a corporate Energy Conservation Demand Management (CDM) Plan.

1.2 Purpose of the Energy Conservation and Demand Management Plan

The Town of Carleton Place's CDM is a strategic plan that aims to provide a basis for the Town to move forward on implementing improvements to its facilities and operations that reduce energy use, their associated costs as well as the environmental effects of the Town's activities.

The plan aims to give the Town a leading edge in energy while enhancing its economic vitality. Therefore, it goes beyond the short-term, "least financial cost" objective and considers the Town's long-term economic, environmental and social well-being.

Energy management includes electricity and natural gas commodity management. The CDM describes the 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 updated CDM plan builds on the Town's CDM plan developed in 2019 and the experience gained in energy conservation over the last five (5) years.

In addition to energy conservation, the updated CDM plan supports our capital plan, tangible capital asset policy and resiliency plans for both the Water and Wastewater Treatment Plants.

² Local Authority Services February 2013 newflash publication

The CDM defines actions in the following key areas:

- Energy management information systems
- Energy training and awareness
- Facility operations
- Energy conservation in existing facilities
- New construction
- On-site generation and demand response
- Development of culture of energy conservation
- Financial considerations

1.3 Key Implemented Actions

1.3.1 Lighting Upgrades

Lighting was replaced with LED fixtures and lighting controls at the following facilities in the years indicated:

- 2021 Arena 2 LED fixtures and lighting controls
- 2021 Upper Hall fixtures and lighting controls
- 2021 Fire Hall Truck Bay LED fixture upgrades
- 2021 Pool area LED fixture upgrades
- 2021 Library LED fixture upgrades as part of the renovation
- 2021 Arena addition LED fixtures installed
- 2022 Pool common areas LED fixture upgrades
- 2022 Town Hall LED fixtures and motion controls as part of the renovation
- 2023 Carambeck CC gymnasium LED fixtures and motion controls
- 50% of the streetlights have been replaced with LED

Funding was received through the IESO (Independent Electrical System Operator) to help offset the cost of these lighting upgrades.

1.3.2 Natural Gas Heaters and Furnaces, and Water Heaters

Furnaces were replaced with natural gas high efficiency models at the following facilities in the years indicated:

- 2021 at the Moore House

Air Source Heat Pumps were installed at the following facilities in the years indicated:

- 2022 Town Hall installed two (2) with electrical backup
- 2023 Library installed two (2) with natural gas backup

1.3.3 Windows, Doors, Siding, Repointing and Insulation

Between 2019 and 2023, windows were replaced, and some exterior walls were repointed at the Town Hall. In addition, between 2022-2023, the Carleton Place and Beckwith Heritage Museum exterior windows were repaired and stormers added.

1.3.4. Boilers

No boilers were replaced during the last five (5) year period.

1.3.5. Roofing, Low E Ceiling, Garage Doors

In 2023, the roof over the hot pool and common areas was replaced along with the Upper Hall Roof at the Arena.

1.3.6. Pump Replacements and Upgrades

The following pumps were replaced and upgrades made during the past five (5) year period:

- Newly constructed pumping station (Bridge Street) in 2021 including a natural gas generator (25kW)
- Newly constructed pumping station (Joseph Street) in 2023 including a natural gas generator (25kW)
- Replaced all check valves on Sewage Lift Pumps (Wastewater Treatment Plant)
- New secondary clarifier scum collector rings installed in 2022
- New polymer pump purchased for Water Treatment Plant

- New Actiflo recirculation pump installed in 2022 (WTP)
- Cleanout of Raw Water Well and diver inspection of Low Lift Pumps and Raw Water Plant intake
- New 12.5 HP pump installed at Mississippi Quays' Pumping Station

1.3.7. Miscellaneous

- The Building and Fire Departments have replaced vehicles with Electric Vehicles
- EV charging stations were installed at the Arena, Library and Police/Fire Station facilities

2.0 CARLETON PLACE'S COMMITMENT

2.1 Declaration of Commitment

The Town of Carleton Place will use existing resources and leverage outside agencies where appropriate to reduce our energy consumption and its related environmental impact.

This report has received the approval of the Town's Senior Management as required by O. Reg 507/18.

2.2 Vision

We 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.

2.3 Policy

We will attempt to incorporate energy efficiency into all areas of our activity including our organizational and human resources management procedures, procurement practices, financial management and investment decisions, and facility operations and maintenance.

2.4 Goals

Consistent with the vision of this plan, the Town of Carleton Place's goal is to be viewed as a leader in energy management and conservation in the BPS. We are also committed to working with other BPS organizations to better manage energy use across our community. The Town establishes the following triple bottom line goals:

Economy:	1. Manage energy costs.
Society:	2. Support a vibrant, prosperous community.
Environment	3. Reduce greenhouse gas (GHG) emissions.

2.5 Objectives

Implementation of the CDM will achieve the following objectives aligned with the above goals:

1. To create a culture of energy efficiency and sustainability.
2. To promote sustainable use of resources through:
• Energy conservation
• Energy efficiency
• Renewable energy
3. To reduce energy operating costs through implementation of best practices and advanced technologies.
4. To increase the comfort and safety of occupants in Town facilities.
5. To increase equipment reliability and reduce maintenance costs.
6. To be seen as a leader in the community for energy conservation in the hopes that it will generate interest in the community to reduce its GHG emissions

2.6 Overall Target

Concerns over sharp increases in energy prices and the negative environmental impact of fossil fuel consumption have raised interest in energy conservation, sustainability, local control and predictable energy rates.

The Town of Carleton Place’s CDM includes comprehensive actions to manage the Town’s energy use.

Using 2023 as a baseline, the following targets are established with this five-year CMD:

1. 10% overall reduction of electricity consumption
2. 5% overall reduction of natural gas consumption
3. Integrating the energy conservation plan with the capital plan, tangible capital asset policy and any resiliency plans for the Water and Wastewater Treatment Plants.

2.7 Establishing a Green Team:

We have appointed the following positions to act as the green team members:

1. Town's Chief Administrative Officer (CAO)
2. Property and Project Manager
3. Director of Roads and Public Works
4. Recreation Manager
5. Library CEO
6. Manager of Childcare Services
7. Treasurer
8. Director of Protective Services

3.0 CARLETON PLACE'S ORGANIZATIONAL UNDERSTANDING

3.1 Our Municipal Energy Needs:

We need reliable, low-cost, sustainable energy sources delivering energy to the most efficient facilities and energy-consuming technology feasible.

3.2 Stakeholder Needs:

Internal stakeholders (Council, Committees of Council, CAO, staff) need:

- a) An up-to-date and relevant energy management plan with clear vision, goals, and targets in order to clearly communicate the corporate commitment to energy efficiency;
- b) Time, regular reports and information on energy use from the Treasury Department to persons responsible for Town facilities to maintain awareness of energy use; and
- c) Training and support to develop the skills and knowledge required to implement energy management practices and measures.

External stakeholders (residents, community organizations, businesses, Province) need:

- a) The Town is to be accountable for energy performance and to minimize the energy component of the costs of municipal facilities and services; and,

b) The Town to reduce the carbon footprint associated with its corporate energy use.

3.3 Current Municipal Energy Situation

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 Town's 2022 annual energy report as required under the Regulation, we have also included and considered our 2023 annual energy consumption information which helped us to report on our achievements and inform the development of new measures.

Energy Consumption and Demand:

The total annual energy consumption, cost and greenhouse gas emissions for the years 2022 and 2023 are outlined in the chart below:

Facility Name	Address	Facility Total Area (m2)	Fuel Types	Consumption in 2022	Total Annual Energy Cost in 2022	Green House Gas Emissions (tonnes CO2e/year) 2022	Consumption in 2023	Total Annual Energy Cost in 2023
Town Hall	175 Bridge Street	7,000	Natural Gas	18,325 m3	\$7,366		16,500 m3	\$7,732
Town Hall	175 Bridge Street	7,000	Electricity	725,645 kWh	\$21,941	55.7	745,178 kWh	\$27,242
Moore House	170 Bridge Street	700	Natural Gas	1,843 m3	\$982		1,649 m3	\$1,030
Moore House	170 Bridge Street	700	Electricity	6,844 kWh	\$1,203	3.8	6,455 kWh	\$1,325
Train Station	132 Coleman Street	5,200	Natural Gas	6211 m3	\$3,654		5,813 m3	\$3,467
Train Station	132 Coleman Street	5,200	Electricity	10,419 kWh	\$1,072	12.3	13,063 kWh	\$2,583
Facility Name	Address	Facility Total Area (m2)	Fuel Types	Consumption in 2022	Total Annual Energy Cost in 2022	Green House Gas Emissions (tonnes CO2e/year) 2022	Consumption in 2023	Total Annual Energy Cost in 2023
Library	101 Beckwith St	10,800	Natural Gas	11,871 m3	\$5,205		10,028 m3	\$4,898
Library	101 Beckwith St	10,800	Electricity	43,055 kWh	\$5,909	24.1	57,033 kWh	\$9,606
Museum	267 Edmund St	2,325	Natural Gas	10,056 m3	\$4,759		7,530 m3	\$3,939
Museum	267 Edmund St	2,325	Electricity	17,170 kWh	\$2,344	19.1	21,241 kWh	\$4,106

Fire / Police Station	15 Coleman Street	18,000	Natural Gas	21,904 m3	\$8,088		18,527 m3	\$8,703
Fire / Police Station	15 Coleman Street	18,000	Electricity	250,660 kWh	\$35,178	49.3	247,845 kWh	\$41,203
Public Works	95 Franklin Street	6,500	Natural Gas	39,592 m3	\$16,789		37,981 m3	\$17,377
Public Works	95 Franklin Street	6,500	Electricity	42,349 kWh	\$7,751	77.7	57,654 kWh	\$9,715
Water Tower	Nelson Street	1,200	Electricity	13,355 kWh	\$2,083	0.4	12,676 kWh	\$2,007
Water Treatment Plant	John Street	5,300	Electricity	1,357,037 kWh	\$181,399	38	1,171,824 kWh	\$182,622
Pumping Station No. 1	Sussex Street	200	Electricity	13,151 kWh	\$2,064	0.4	9,057 kWh	\$1,562
Pumping Station No. 2	Charles Street	200	Electricity	24,888 kWh	\$3,738	0.7	24,889 kWh	\$3,714
Pumping Station No. 3	Princess Street	200	Electricity	10,903 kWh	\$1,711	0.3	7,996 kWh	\$1,292
Pumping Station No. 4	Joseph Street	200	Electricity	20,931 kWh	\$3,421	0.6	24,773 kWh	\$3,699
Pumping Station No. 5	Findlay Avenue	200	Electricity	14,668 kWh	\$2,238	0.4	15,688 kWh	\$2,400
Pumping Station No. 6	Patterson Crescent	200	Electricity	29,846 kWh	\$4,732	0.8	33,170 kWh	\$4,811
Pumping Station No. 7	Ferrill Crescent	200	Electricity	26,565 kWh	\$3,787	0.7	29,212 kWh	\$4,254
Pumping Station No. 8	Industrial Avenue	200	Electricity	20,964 kWh	\$3,027	0.6	26,428 kWh	\$3,867
Pumping Station No. 9	Johnston Street	200	Electricity	24,876 kWh	\$3,737	0.7	24,909 kWh	\$3,717
Facility Name	Address	Facility Total Area (m2)	Fuel Types	Consumption in 2022	Total Annual Energy Cost in 2022	Green House Gas Emissions (tonnes CO2e/year) 2022	Consumption in 2023	Total Annual Energy Cost in 2023
Pumping Station No. 10	Joseph Street	200	Electricity	19,290 kWh	\$2,842	0.5	24,105 kWh	\$3,542

Carambeck Community Centre	351 Bridge Street	31,000	Natural Gas	40,019 m3	\$12,692		71,853 m3	\$16,509
Carambeck Community Centre	351 Bridge Street	31,000	Electricity	121,312 kWh	\$18,240	82.5	127,522 kWh	\$23,770
Indoor Pool	359 Bridge Street	16,200	Natural Gas	122,850 m3	\$46,123		119,998 m3	\$48,592
Indoor Pool	359 Bridge Street	16,200	Electricity	349,185 kWh	\$50,123	247.1	320,982 kWh	\$55,281
Childcare Centre	3 Francis Street	18,000	Natural Gas	25,569 m3	\$10,706		22,224 m3	\$11,404
Childcare Centre	3 Francis Street	18,000	Electricity	240,969 kWh	\$30,424	56.2	264,657 kWh	\$47,132
Wastewater Treatment Plant	122 Patterson Crescent	9,500	Natural Gas	42,082 m3	\$20,986		37,655 m3	\$18,744
Wastewater Treatment Plant	122 Patterson Crescent	9,500	Electricity	1,521,149 kWh	\$183,483	123.9	1,808,430 kWh	\$184,629
Streetlights	All over	N/A	Electricity	79,794 kWh	\$117,481	2.2	78,756 kWh	\$128,622
Traffic Lights	All over	N/A	Electricity	30,690 kWh	\$15,941	0.9	30,134 kWh	\$18,569
Neelin Street Arena	75 Neelin Street	90,410	Natural Gas	88,108 m3	\$32,298		85,953 m3	\$34,529
Neelin Street Arena	75 Neelin Street	90,410	Electricity	1,029,400 kWh	\$133,423	199.1	1,107,343 kWh	\$147,192
596								
Canoe Club	179 John Street	5,000	Electricity	91,466 kWh	\$12,441	2.6	82,864 kWh	\$11,752
TOTAL					\$1,021,381	1,001.4		\$1,107,138

Figure 3.3 Facilities Energy Breakdown by Source for 5 Years

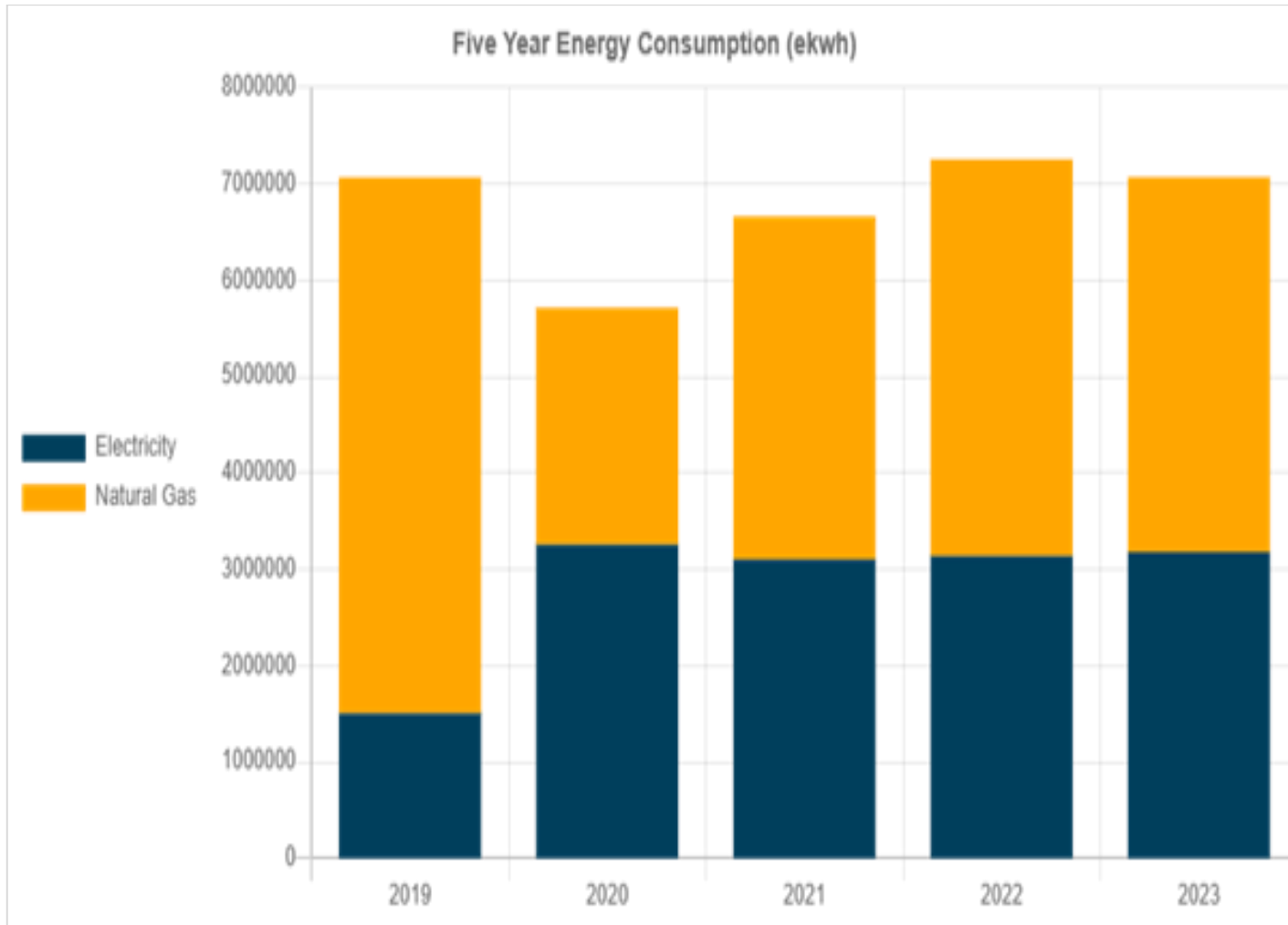


Figure 3.4 Facilities GHGs by Source for 2023

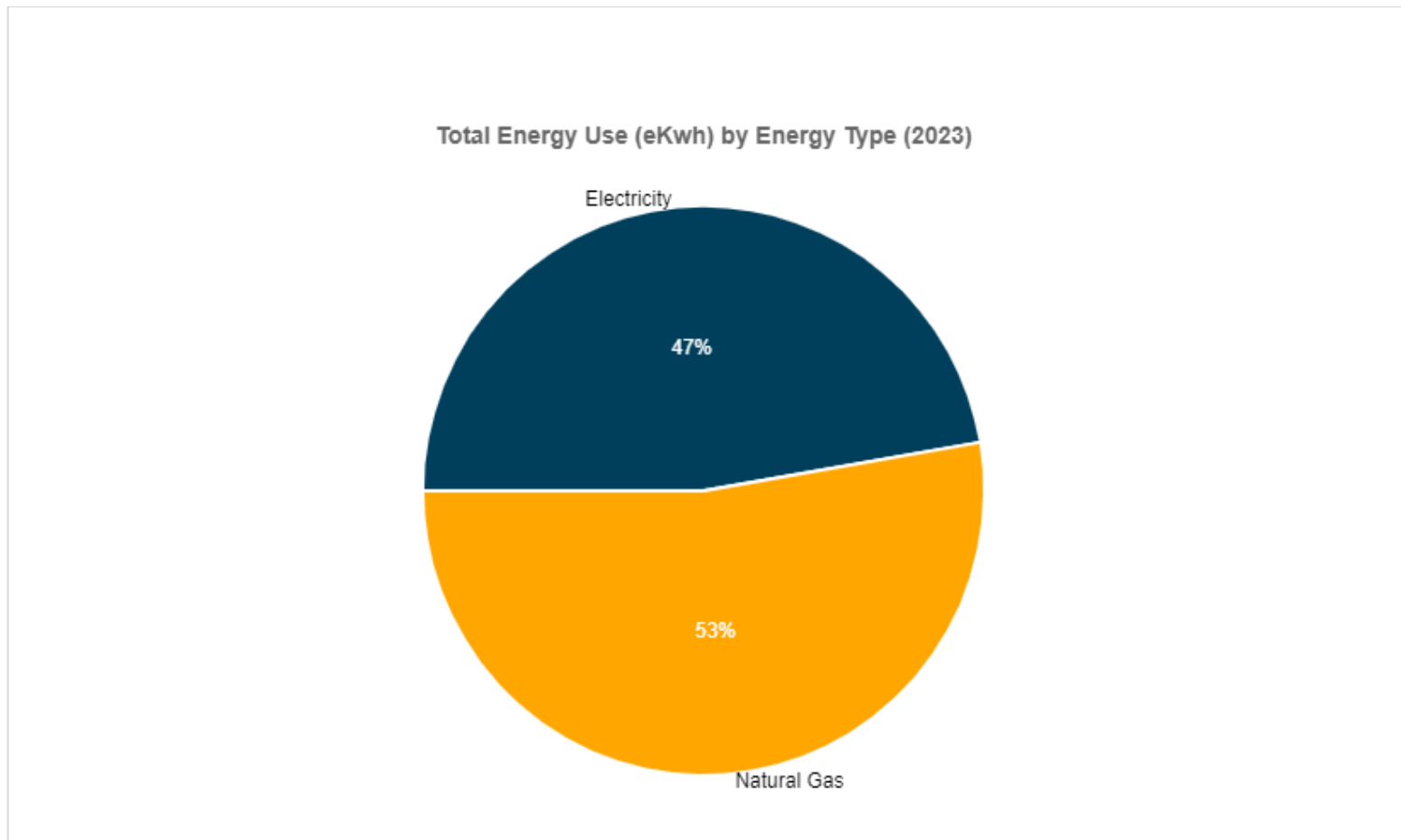
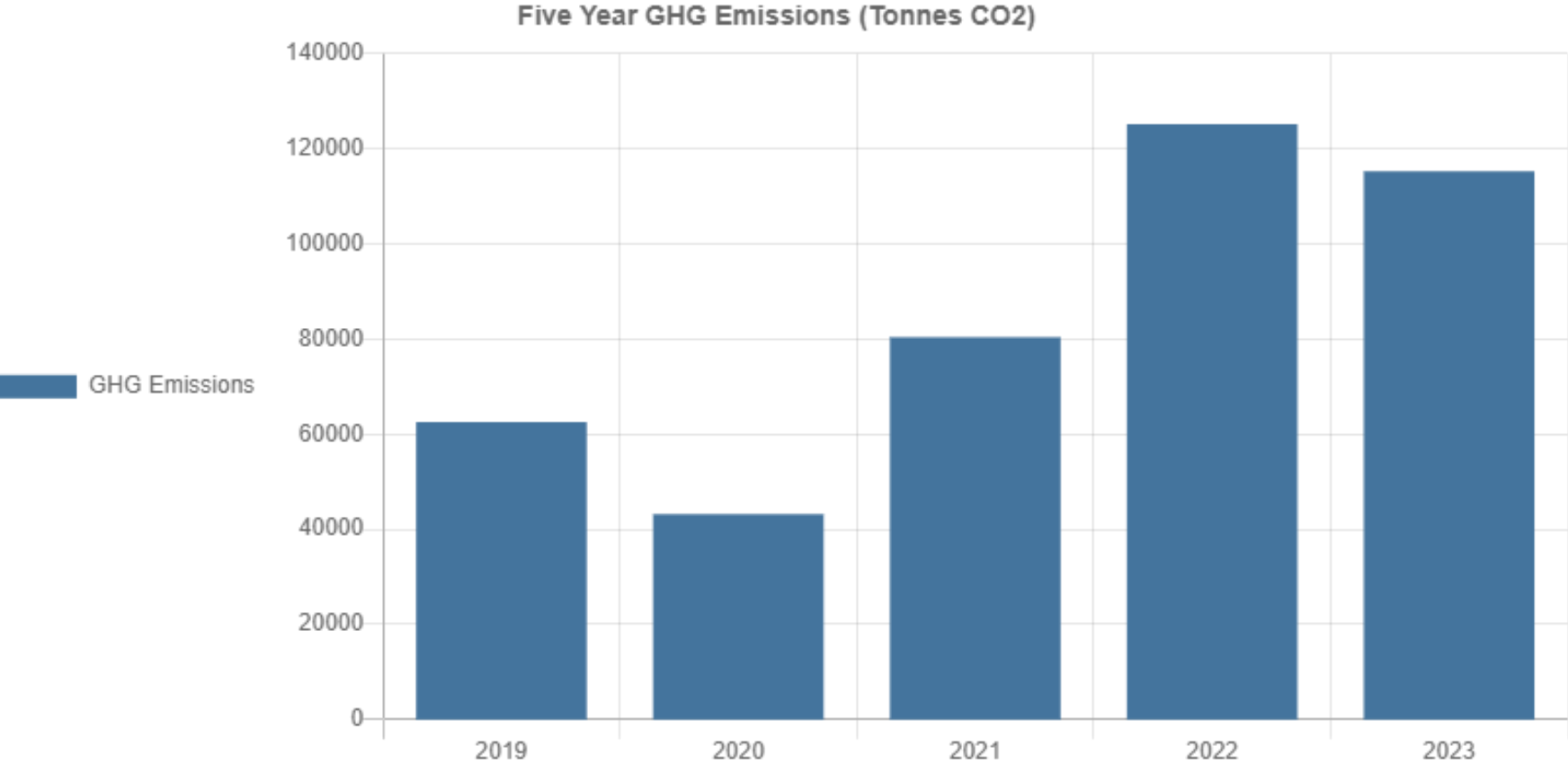


Figure 3.5 GHG Comparison of Emissions for Town Facilities for 2019 and 2023



Energy Supply:

The types of energy used in the operation of the Town of Carleton Place's facilities and delivery of services include:

- Electricity – provided by Hydro One
- Natural Gas – provided by Enbridge Gas

3.4 How Energy is Currently Managed

The management of our energy is a combination of energy data management, energy supply management, and energy use management.

Energy Data Management: Our municipal energy data is managed through the Treasury Department. The data on our energy usage is obtained from our hydro and natural gas invoices and well as from reports received through Local Authority Services for natural gas and hydro purchases.

Energy Supply Management: Our municipal energy is supplied via providers as outlined below:

- Electricity: Carleton Place purchases its electricity directly through Hydro One. In 2019, the Treasurer registered Town facilities into the Local Authority Services' bulk electricity program so that purchases of electricity will be made through Local Authority Services bulk electricity program. The Town has adopted a hedging strategy.
- Natural Gas: Carleton Place purchases our natural gas through Local Authority Services bulk gas purchasing program with other municipalities across the province.

Energy Use Management: Day-to-day management of energy has been primarily the responsibility of Property and Project Manager. The Town needs to put practices in place to better monitor and adjust energy usage throughout the year and/or consider implanting additional facility measures to help reduce energy usage.

3.5 Changes from Previous Plan to Achieve our Goals and Objectives

While the Town met its conservation objectives from the 2019 plan, we recognize other measures could take place to ensure savings continue and that new conservation measures are identified and acted upon. Our key change to ensure the success of our updated plan includes ensuring staff are trained in energy conservation and building operations.

The CDM plan will be reviewed by our Green Team on an annual basis to review the results of the proposed measures and determine if adjustments to the plan are required. Initiatives may be added to the plan as new opportunities arise. Updates to the plan will be posted on the Town's Energy Management page on its website <https://carletonplace.ca/town/municipal-services-info/by-laws-and-significant-town-policies>

3.6 Renewable Energy Utilized or Planned

The Town of Carleton Place aspires to show leadership in the promotion and development of renewable energy systems that are compatible with our asset management and land use planning objectives. As a result, we will consider the potential to develop solar photovoltaic systems on the rooftops of all corporate facilities with sound, south-facing roofs and evaluating the Town's fleet (cars and light duty trucks) to determine which vehicles are suitable for replacement with electric vehicles (EV).

4.0 STRATEGIC PLANNING

4.1 Long-term strategic issues

We will develop and implement energy policies where necessary, develop the required skills and knowledge to help address energy management, manage energy information, communicate with our stakeholders, and invest in energy management measures.

4.2 Links with other municipal plans and management processes:

As an integral component of the management structure, the energy management plan is to be coordinated with the Town's budget planning process, preventative maintenance plans, and the Town's overall asset management plan.

4.3 Benchmarking

Benchmarking is a measurement which compares a building's energy use to its indoor floor area. The Broader Public Sector (BPS) reporting portal develops energy benchmarks by converting the energy used in a building to equivalent kilowatt hours of electricity (ekWh) and then divides it by the floor areas of the building. The resulting value is the energy intensity for a building. As weather can

impact the energy use of buildings (e.g. more energy is required to heat buildings in colder weather), the Ministry has provided weather normalized data on its website.

Benchmarking will be used to assess changes in energy performance of buildings over time, especially when energy conservation measures have been implemented in those buildings. As we have been reporting energy use data since 2011, the energy intensity in 2011 for a building can be used as a benchmark to compare with the energy intensity of the same building in more recent years. Benchmarking also allows an organization to compare the energy used in its buildings to the median for that building type to help determine if there are energy conservation opportunities.

Benchmarking can also identify potential data errors in the Town's energy reporting. If the energy intensity is significantly higher or lower in a particular year, the building's energy use should be reviewed.

4.4 Departmental responsibilities

We will incorporate energy budget accountability into departmental responsibilities.

4.5 Behavioural Measures

We will incorporate low to no cost behavioural measures into our practices to assist in achieving energy savings. Behavioural measures will include, but not be limited to: informing staff of the savings associated with shutting off lights; not re-adjusting the temperature in rooms; and using shades to take advantage of daylight harvesting, solar heat gain in the winter and cooling in the summer.

4.6 Working with Other Organizations

Where feasible, we will work with other municipalities to identify conservation issues and opportunities for different types of facilities and develop common measures to address those issues (i.e. hiring a consultant or coordinating the procurement of green products, etc.) that will benefit all participants.

4.7 Consideration of energy efficiency for all projects

We will incorporate life cycle cost analysis into the design procedures for all capital projects.

4.8 Resources Planning

We will incorporate energy efficiency into standard operating procedures and the knowledge requirement for operational jobs.

4.9 Staff Training and Communication

- **Communication programs:** We will develop a communication strategy that creates and sustains awareness of energy efficiency as a corporate priority among all employees and conveys our commitment and progress to our stakeholders.
- **Energy Awareness Training:** We will develop and deliver training focused on the energy implications of employees' job functions and the day-to-day opportunities for conserving energy found in the workplace and at home.
- **Energy Skills Training:** We will develop and deliver skills training for operators, maintainers and other employees that have "hands-on" involvement with energy consuming systems in order to improve the team's ability to achieve energy efficiency improvements.
- **Business Procedures:** We will carry out a comprehensive review of all business processes and modify them as necessary in order to incorporate any energy efficiency considerations.

4.10 Development of Energy Projects

- **Internal assessments:** We will develop a methodology for the internal assessment of energy performance of Town facilities and their energy loads. In addition, a process will be developed for identifying and cataloguing energy efficiency improvements.
- **Staff suggestions:** We will implement a process for submitting and processing staff suggestions for energy efficiency improvements.
- **Energy audits:** We will establish the criteria for the requirement and frequency of municipal facility energy audits. The energy audits will be carried out based on the developed policy.

4.11 Investment in Energy Projects

- **Investment criteria:** We will develop and/or clarify as necessary the financial indicators that are applied to investment analysis and prioritization of proposed energy projects, taking due consideration of the priority given to energy efficiency projects versus other investment needs (life cycle versus simple payback).
- **Consideration of energy efficiency for all projects:** Life cycle cost analysis will be incorporated into the design procedures for all energy projects.

- Budgetary resources for energy projects: Energy projects will be integrated into our capital planning and budget development procedures.
- Capital: Savings and incentives from previous energy efficiency projects will be incorporated into our annual capital planning procedures as a separate envelope.
- Other sources of funds for energy projects: the Green Team will be mandated to investigate, document, and communicate funding sources for energy projects, including government and utility grant incentives.

4.12 Procurement

- Energy purchasing: The Town uses Local Authority Services which is a division of the Association of Municipalities of Ontario to negotiate energy purchase contracts that appropriately address our cost considerations, available energy services, energy quality and reliability, and other performance factors.
- Consideration of energy efficiency of acquired equipment: Our purchasing procedures will be modified as required to incorporate energy efficiency into the criteria for selection and evaluation of materials and equipment.
- Standards for new buildings: We will develop criteria for the design and/or acquisition of new buildings that include energy performance factors and that use as appropriate, the principles embedded in performance standards such as Leadership in Energy and Environmental Design (LEED) and the Model National Energy Code for Buildings.

5.0 CURRENT AND PROPOSED ENERGY CONSERVATION MEASURES

Energy conservation projects can be categorized as technical (i.e. switching street lighting from high pressure sodium to LED), organizational (i.e. establishing a green team) or behavioural (i.e. a turning off the lights program).

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). In addition, more costly conservation projects will be bundled with more cost-effective ones to lever their development.

6.0 EXECUTION OF ENERGY MANAGEMENT PLAN

Implementation of the proposed projects depends on:

- Funding allocated by Council;
- Using savings from previous conservation projects to help fund new projects;
- Incentives from the Independent Electricity System Operator and/or natural gas utilities;
- Availability of qualified staff; and
- Retaining a qualified contractor to implement initiatives.

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

The projects proposed to be completed over the next five (5) years include:

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2024	Every	All	All facilities	Organizational Program	Awareness	Add energy awareness to management meetings	N/A	CAO
2024	Every	All	All facilities	Organizational Process	Awareness	Energy reports to be distributed to building managers on an annual basis	N/A	Treasurer/Property and Project Manager
2024	Every	Treasury	All facilities	Organizational Process	Awareness	Incorporate life-cycle costing into procurement process	N/A	Treasurer
2024	Q2	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Replace Arena No. 1 Brine Pump	\$40,000.00 Simple payback is 15 years	Property and Project Manager
2024	Q2	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Replace Arena No. 2 Brine Pump	\$40,000.00 Simple payback is 15 years	Property and Project Manager

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2024	Q2	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Replace Dehumidifier in Arena No. 1	\$74,000.00 Simple payback is 15 years	Property and Project Manager
2024	Q2	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Replace Dehumidifier in Arena No. 2	\$74,000.00 Simple payback is 15 years	Property and Project Manager
2024	Q4	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Building Automation System	\$150,000.00 Simple payback is 10 years	Property and Project Manager
2024	Q4	Childcare	3 Francis Street Childcare Centre	Technical Project	Energy Efficiency	Replace one furnace	\$13,000.00 Simple payback is 10 years	Property and Project Manager
2024	Q3	Recreation	Pool	Project	Energy Efficiency	Replacing Windows	\$33,000.00 Simple payback is 10 years	Property and Project Manager
2024	Q3	Recreation	Pool	Technical Project	Energy Efficiency	Building Automation System	\$150,000.00 Simple payback is 10 years	Property and Project Manager
2024	Q4	Library	Library	Technical Project	Energy Efficiency	Replace furnace No.3 with Air Source Heat Pump (ASHP)	\$24,000.00	Property and Project Manager
2025	Q3	Culture	Museum	Project	Energy Efficiency	Replace windows	\$67,000.00	Property and Project Manager

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2025	Q2	Recreation	Neelin St. Community Centre	Project	Energy Efficiency	Low flow water fixtures	\$101,500.00 Annual 68.1 CO2e Savings	Property and Project Manager
2025	Q4	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Arena No. 1 Refrigeration Plant Controller Replacement	\$30,000.00 Simple payback is 8 years	Property and Project Manager
2025	Q4	Recreation	Neelin St. Community Centre	Technical Project	Energy Efficiency	Arena No. 2 Refrigeration Plant Controller Replacement	\$30,000.00 Simple payback is 8 years	Property and Project Manager
2025	Q2	Recreation	Neelin St. Community Centre	Project	Energy Efficiency	Replace 2 Roof Top Unit's (RTUs) with ASHP	\$534,000.00 Annual 68.1 CO2e Savings	Property and Project Manager
2025	Q3	Recreation	Pool	Project	Energy Efficiency	Low flow water fixtures	\$25,900.00 Simple payback is 6 years	Property and Project Manager
2025	Q3	Recreation	Pool	Project	Energy Efficiency	Pool cover	\$240,600.00 Annual 56.1 CO2e Savings	Property and Project Manager
2025	Q3	Recreation	Pool	Project	Energy Efficiency	Replace Main Pool Dehumidifier with efficient and low refrigerant charge units	\$1,027,200.00 Annual 8.2 CO2e Savings	Property and Project Manager
2025	Q3	Recreation	Carambeck CC	Project	Energy Efficiency	ASHP Replacement for Gymnasium RTU	\$240,600.00 Annual 6.8 CO2e Savings	Property and Project Manager

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2026	Q3	Recreation	Neelin Street Community Centre	Project	Energy Efficiency	Demand Control Ventilation through RTU's	\$51,800.00 Annual 11.5 CO2e Savings	Property and Project Manager
2026	Q3	Recreation	Neelin Street Community Centre	Project	Energy Efficiency	Add Energy Recovery Ventilation (ERV) to Upper Hall, Arena 2 Hall, and office RTU's	\$158,100.00 Annual 16 CO2e Savings	Property and Project Manager
2026	Q4	Recreation	Neelin Street Community Centre	Project	Energy Efficiency	Suspended Low E Ceiling	\$130,000.00 Simple payback is 7 years	Property and Project Manager
2026	Q4	Childcare	3 Francis Street Childcare Centre	Project	Energy Efficiency	Low flow water fixtures	\$94,500.00 Annual 1.2 CO2e Savings	Property and Project Manager
2026	Q4	Childcare	3 Francis Street Childcare Centre	Project	Energy Efficiency	Split Heat Pumps to Replace Forced Air Furnaces and AC Units	\$437,300.00 Annual 33.1 CO2e Savings	Property and Project Manager
2026	Q4	Recreation	Carambeck CC	Project	Energy Efficiency	Low Flow Water Fixtures	\$5,000.00 Simple payback is 10 years	Property and Project Manager
2026	Q4	Recreation	Carambeck CC	Project	Energy Efficiency	Nighttime Temperature setback (requires a control system)	\$71,500.00 Annual 4.2 CO2e Savings	Property and Project Manager
2026	Q4	Administration	Town Hall	Project	Energy Efficiency	Low Flow Water Fixtures	\$25,600.00 Annual 0.2 CO2e Savings	Property and Project Manager

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2026	Q3	Administration	Town Hall	Project	Energy Efficiency	ASHP Boiler Replacement	\$233,800.00 Annual 18.7 CO2e Savings	Property and Project Manager
2027	Q4	Protective Service	Police/Fire	Project	Energy Efficiency	Low Flow water fixtures	\$53,800.00 Annual 2.4 CO2e Savings	Property and Project Manager
2027	Q4	Protective Service	Police/Fire	Project	Energy Efficiency	Nighttime temperature setback (requires a control system)	\$81,300.00 Annual 1.3 CO2e Savings	Property and Project Manager
2027	Q4	Protective Service	Police/Fire	Project	Energy Efficiency	Condensing domestic hot water heater	\$38,800.00 Annual 0.9 CO2e Savings	Property and Project Manager
2027	Q4	Administration	Town Hall	Project	Energy Efficiency	Complete LED Retrofit	\$84,900.00 Annual - 0.7 CO2e Savings	Director of Public Works / OCWA
2028	Q4	Recreation	Neelin Street Community	Project	Energy Efficiency	ASHP replacement of furnaces	\$68,800.00 Annual 23.0 CO2e Savings	Property and Project Manager
2028	Q4	Childcare	3 Francis Street Childcare Centre	Project	Energy Efficiency	Provide ventilation through ERV units	\$114,100.00 Annual 4.0 CO2e Savings	Property and Project Manager
2028	Q3	Protective Service	Police/Fire	Project	Energy Efficiency	ASHP Boiler Replacement	\$302,500.00 Annual 17.0 CO2e Savings	Property and Project Manager

Year	Quarter	Department	Location	Type	Objective	Action	Cost/Savings Estimate (if applicable)	Owner
2028	Q4	Protective Service	Police/Fire	Project	Energy Efficiency	Electric Unit Heaters	\$43,100.00 Annual 4.5 CO2e Savings	Property and Project Manager
2028	Q3	Administration	Town Hall	Project	Energy Efficiency	ASHP Replacement of fuel fired Air Handling Units (AHU) with	\$211,800.00 Annual 10.8 CO2e Savings	Property and Project Manager
2028	Q3	Administration	Town Hall	Project	Energy Efficiency	ASHP split unit to replace fuel-fired furnace and Air Conditioner pairs	\$56,300.00 Annual 1.7 CO2e Savings	Property and Project Manager
2024-2028	Every	All	All facilities	Organizational Project	Energy Efficiency	As lights in facilities are replaced, replace with LED fixtures	Unknown Cost depends on type of light fixture	Property and Project Manager
2024-2028	Every	All	All	Behavioural	Awareness	Celebrate successful projects and initiatives with pizza lunches	\$500.00	CAO
2024-2025	Every	All	All	Behavioural	Awareness	Encourage staff to lower shades in the summer to keep heat out and raise them in the winter to let heat in	None Simple payback is immediate	All Facility Managers
2024-2028	Every	All	All	Organizational	Awareness	Adopt a train-the-trainer policy where staff complete courses such as Dollars to Sense Energy Management Workshops, Certified Energy Managers, and Certified Building Operators Programs	\$5,000.00 Simple payback is 5 years	All Facility Managers

*simple payback is defined as project cost/annual energy savings

7.0 EVALUATION OF ENERGY CONSERVATION DEMAND MANAGEMENT PLAN

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

Monitoring Progress

Measurement and verification of energy projects: Standard methods for savings verification will be adopted.

Review & Reporting

Reporting for the *Green Energy Act* (GEA): Reporting requirements for the Green Energy Act and other pertinent provincial legislation will be factored into our reporting procedures.

Reports to accountable staff: The Green Team will be provided with timely and regular energy consumption reports.

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