2025
ANNUAL ENERGY REPORT

City of Mississauga - Corporate Buildings

Prepared by
Energy Management Section
Facilities & Property Management Division

MISSISSAUGA

2025 Highlights

2.6%

Energy Reduction

0.1%

Water Reduction

$2,500

Total Utility Bill of $24,419,000

Management of 926 Utility Accounts

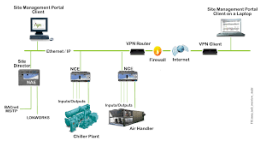
20 Incentive Applications

$195,360

170 EV Connections

Implementation of Green Building Standards in 8 Facilities

Energy Star Certification Paul Coffey Arena & City Hall



Implementation of BAS Standardization in 36 Buildings

Executive Summary

City of Mississauga continues to make strides in positioning itself as a leader in the environmental stewardship space with, among other things, the declaration of a Climate Emergency in 2019. This has served to formalize the direction the City is taking over the next 20-30 years and has resulted in the development of important guidance documents and standards including the Climate Change Action Plan and the Corporate Green Building Standard. The City has been preparing for this greater focus on the environment and has been building the required 'bench strength' to undertake the necessary tasks, through the development of its Team, Policies, Procedure, Standards and Systems.

This annual report provides an update on the progress of the current 5 Year Energy Conservation Plan (2024-2028)[1]. That plan focusses on electricity and natural gas consumption and targets 1% reduction in energy use and greenhouse gas emissions (GHGs), each year over the period. Beyond that, the report provides an update on the water utility and outlines some of the key initiatives implemented and currently in process in our facilities. Many projects are underway, and these have begun to deliver the anticipated improvements, with reduction in consumption for energy of 2.6% and water 0.1% in 2025.

The City's BAS Standard & Master Specification and the Corporate Green Building Standard is having a positive impact on the general mindset, and approach to all City projects. Our current BAS implementations are more streamlined and the interface easier to navigate. The associated building systems integration which facilitates data sharing for a more effective and efficient building operation is far advanced.

The City of Mississauga's first Net Zero Energy Building, Fire Station 125, is now operational and Fire Station 123 is almost completed. We have integrated several advanced systems, including heat pump technologies and solar photovoltaics, which are increasingly becoming common in our other developments, where applicable, in order to reduce our carbon emissions.

The executed energy efficiency measures, life cycle replacement projects and operational optimization programs shows City of Mississauga's commitment to achieving the energy and GHG reduction targets set by the 5-year Energy Conservation Plan, along with reducing use of other resources. Further, we continue to use the comprehensive and structured "Plan-Do-Check-Act" approach to energy management.

Beyond projects and initiatives, good management of energy use begins with an understanding of the drivers of that use. City of Mississauga has therefore continued to expand its real-time monitoring of the utilities as well as improving its analytical tools, including fault detection, and capabilities to process the higher volume of available data, towards actionable information. We have also continued to increase the awareness of facility managers and operators, of their utility cost relative to budget and assisting them in identifying opportunities for improvement. The Utilities Management processes employed at City of Mississauga played an important role in the overall reduction in utilities cost through management of over

[1] https://www.mississauga.ca/wp-content/uploads/2024/06/26113131/5-year-energy-conservation-plan-2024-2028.pdf

900 accounts to optimize the rate classifications, identify and resolve billing errors and promote storm water best practices resulting in avoided costs.

Despite minor deviations along the way, we remain highly optimistic that the City is on the right path. As more projects benefit from the established standards, and with the continued expansion of analytical tools across the city's portfolio, along with increased visibility of BAS and energy usage in its facilities, we are confident that the results will continue to align with the intended trajectory.

Table of Contents

Energy & Water Conservation - The Big Picture

The 5-Year Energy Conservation Plan 2024-2028, requires that the City-owned facilities portfolio achieves an overall annual energy reduction target of 1% each year compared to the 2023 baseline. The target reduction for 2025 is therefore 2% when compared to the 2023 consumption. City of Mississauga has surpassed the target in 2025 achieving 2.6% reduction in overall energy use, with a 4.2% increase in electricity use, 8.9% reduction in gas consumption and an overall 3.5% reduction in green house gas (GHG) emissions. Water use reduced marginally by 0.1%. Total annual utilities increased in 2025 by $377,758, partly due to increased service levels and partly due to fuel-switching to the cleaner electricity grid.

Adjusted Consumption*	2023**	2025+	Change	Change (%)	Utility Savings ($)
Electricity (kWh)	85,955,404	89,553,265	3,597,861	4.2%	($697,535)
Natural Gas (m3)	8,778,963	7,996,102	(782,861)	-8.9%	$317,295
Total Energy (ekWh)	178,134,519	173,512,340	(4,622,179)	-2.6%	
Water (m3)	1,140,083	1,139,344	(740)	-0.1%	$2,481
GHG Emissions (kg of CO_2)	19,443,051	18,763,537	(679,514)	-3.5%	
Total Utility Savings					**($377,758)**

* Adjusted for differences in weather and facility occupancy. Sites where major renovations were in progress were adjusted in this analysis. Emissions factors for the respectiv years were used

** 2023 consumption adjustment to the baseline due to (1) bill corrections from utility after reporting and (2) switching to Power BI for reporting

\+ This data may be subject to minor adjustments due to utility bill corrections

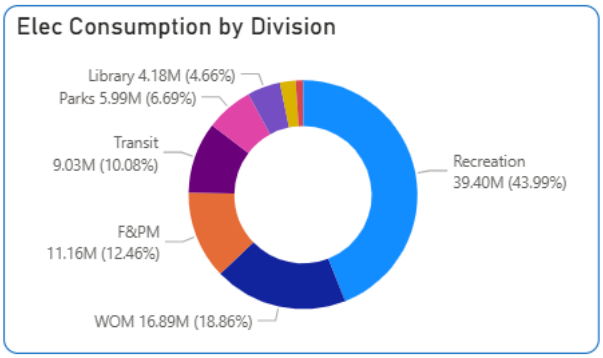
The drive to decarbonization is expected to increase our portfolio's consumption of the cleaner electricity grid, tempered by efficiency gains, and reduce our consumption of the carbon-intensive natural gas fuel. Therefore, while our portfolio experiences a reduction in energy and GHG emissions, the shift to the cleaner electricity grid may result in higher utility cost pressures. This is because policy tools like the industrial carbon tax or the now ceased federal fuel charge do not entirely account for the social cost of carbon (SCC)[2] in the price of fuel.

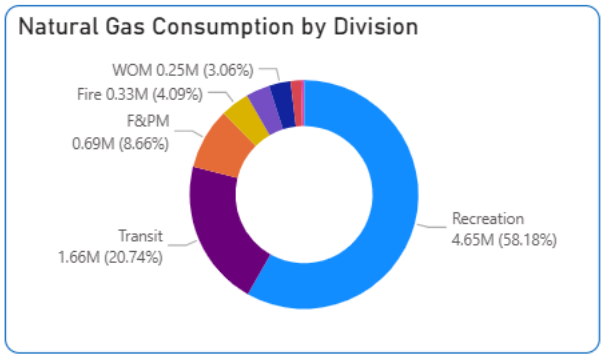
The aforementioned results were achieved through City of Mississauga's diligent execution of its projects and key initiatives over the period and these have contributed to more efficient use of energy. Our fault detection system and our building tune-up program have identified many of challenges that would normally have gone undetected for longer periods. These projects and key initiatives are detailed further in this report, and project progress can be found in the appendix.

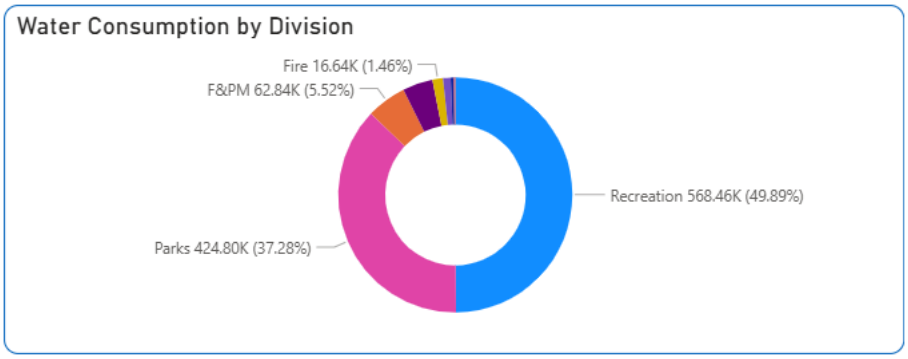
[2] The SCC is the monetary value applied to climate change's social costs – including impacts on health, agriculture, infrastructure, and ecosystems.

Utility Consumption

In 2025, City of Mississauga had a total Energy Use (Electricity & Gas) of 173,512,340 e-kWh of which Electricity accounted for the marginally larger portion (52%) relative to Natural Gas (48%). In the same period, approximately 1,139,300 cubic meters of water was consumed. At the division level, the consumption apportionment varies across all three (3) utilities.



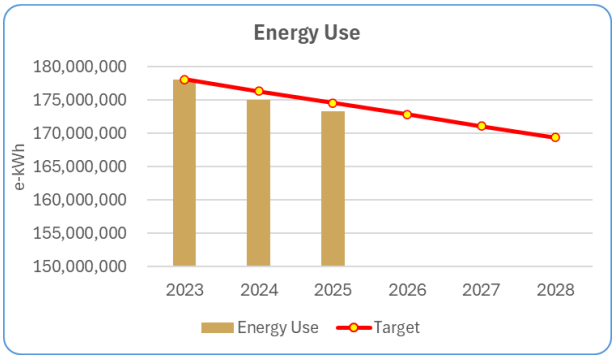


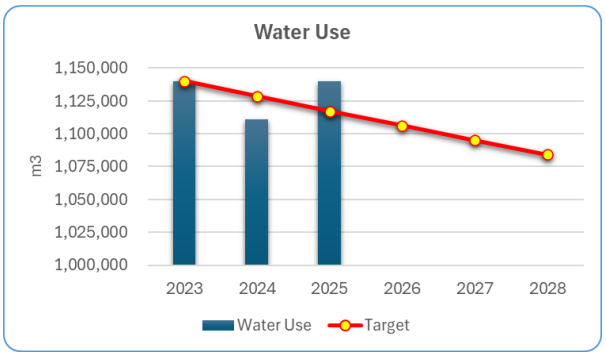


Recreation which provides services to the community via the Community Centres and Arenas, is the biggest consumer for all three utilities. For electricity, the second largest user is Works Operations and Maintenance (WOM), followed by Facilities & Property Management (F&PM). For natural gas, the second largest user is Transit, followed by buildings falling under the F&PM Division. For water, the second largest user was Parks, primarily due to the significant number of green spaces under that portfolio, followed by the F&PM Division.

Utility Consumption Trend

Overall, the energy use has reduced in 2025 relative to the baseline year of 2023. This was due to the cumulative effect of multiple measures implemented throughout the facilities. As depicted in the chart below, the total energy use in 2025 was 173,512,340 e-kWh as compared with 178,134,519 e-kWh in 2023, a 2.6% reduction.

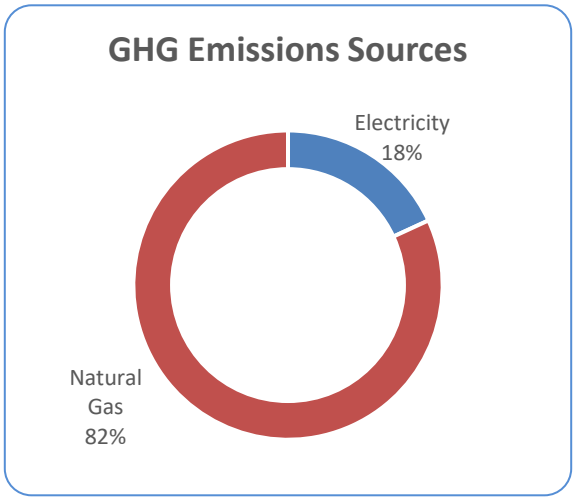




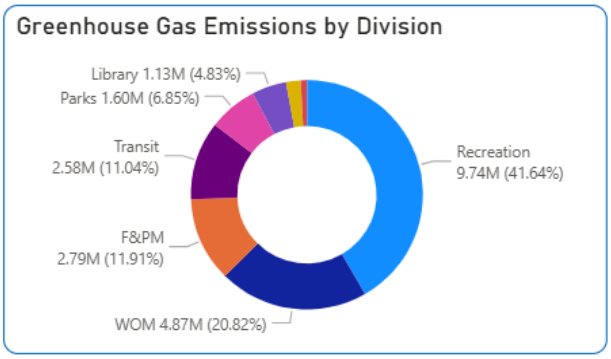
In 2025, of the total Energy Use, electricity consumption was 89,553,265 kWh, which is an increase of 4.2% when compared to the adjusted baseline period (2023), realizing approximately 3,597,900 kWh in increase. For natural gas the 2025 consumption of 7,996,102 cubic meters, is a reduction of 8.9%, when compared to the adjusted baseline period; this is approximately 782,900 cubic meters of reduced consumption. During the same period, water consumption was 1,139,344 cubic meters, which is a reduction of 0.1%, when compared to the adjusted baseline period, achieving approximately 740 m3 in savings.

GHG Emissions

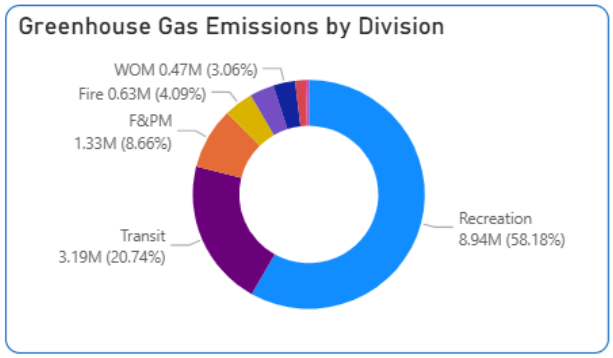
GHG Emissions has been deliberately targeted by the City of Mississauga, more so since a Climate Emergency was declared by Council in 2019, resulting in the development and promulgation of a Climate Change Action Plan which identified mitigation and adaptation as the two main goals to becoming a low carbon and resilient community.



In 2025, the GHG Emissions was 18,763,537 kg of CO_2 (equivalent) of which Natural Gas accounted for the larger portion (82%) relative to Electricity (18%). City of Mississauga was still able to surpass the target even though the emissions factor for electricity went from 0.030 kg of CO2 (2023) to 0.038 kg of CO2 (2025) representing a 26% increase.



(a) Electricity

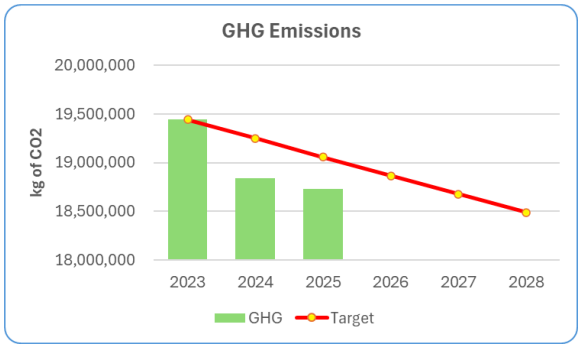


(b) Natural Gas

When broken out by Division along the lines of source, Recreation was the biggest user, followed by Transit, then buildings under Works Operations & Maintenance (WOM). GHG from Transit was driven by natural gas while that from F&PM was driven by electricity usage.

GHG Emissions Trend

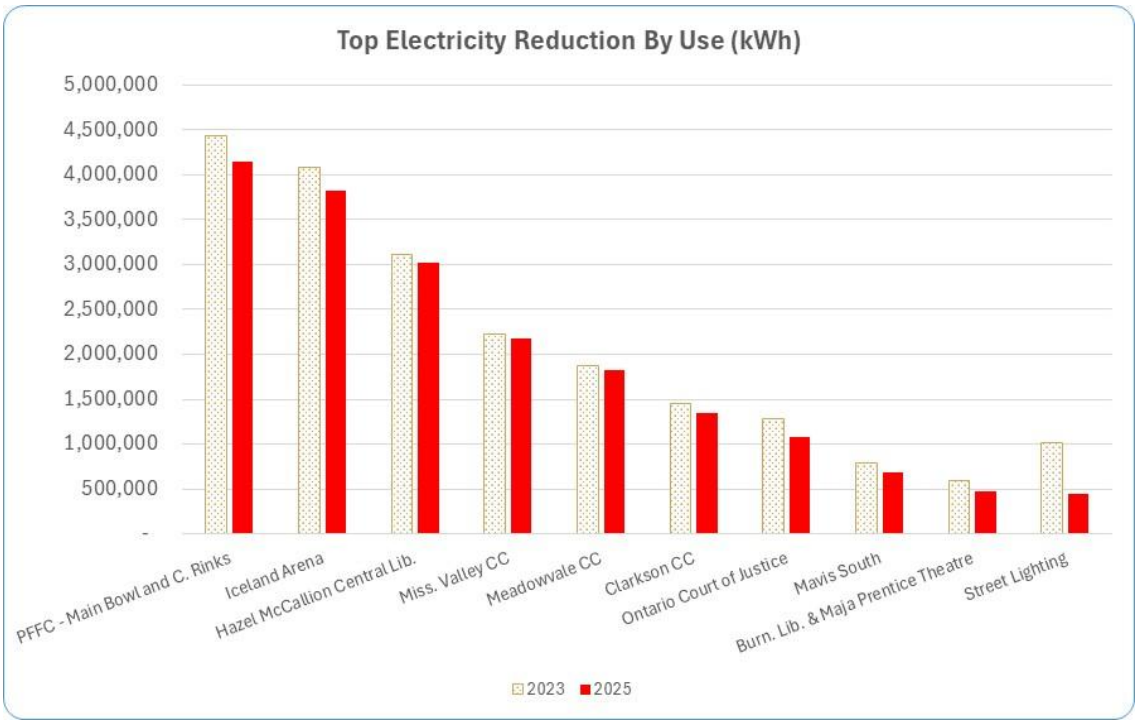
In 2025, GHG Emissions reduced by 3.5% when compared to the adjusted baseline period of 2023, which is above our 1% per year target.

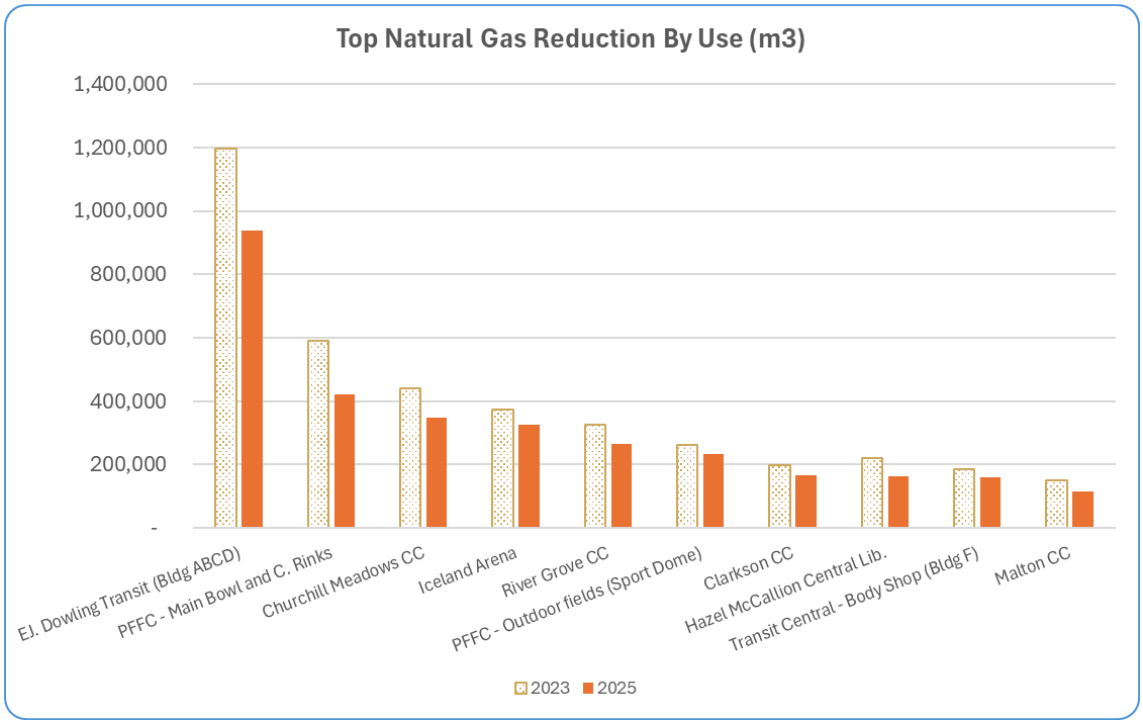


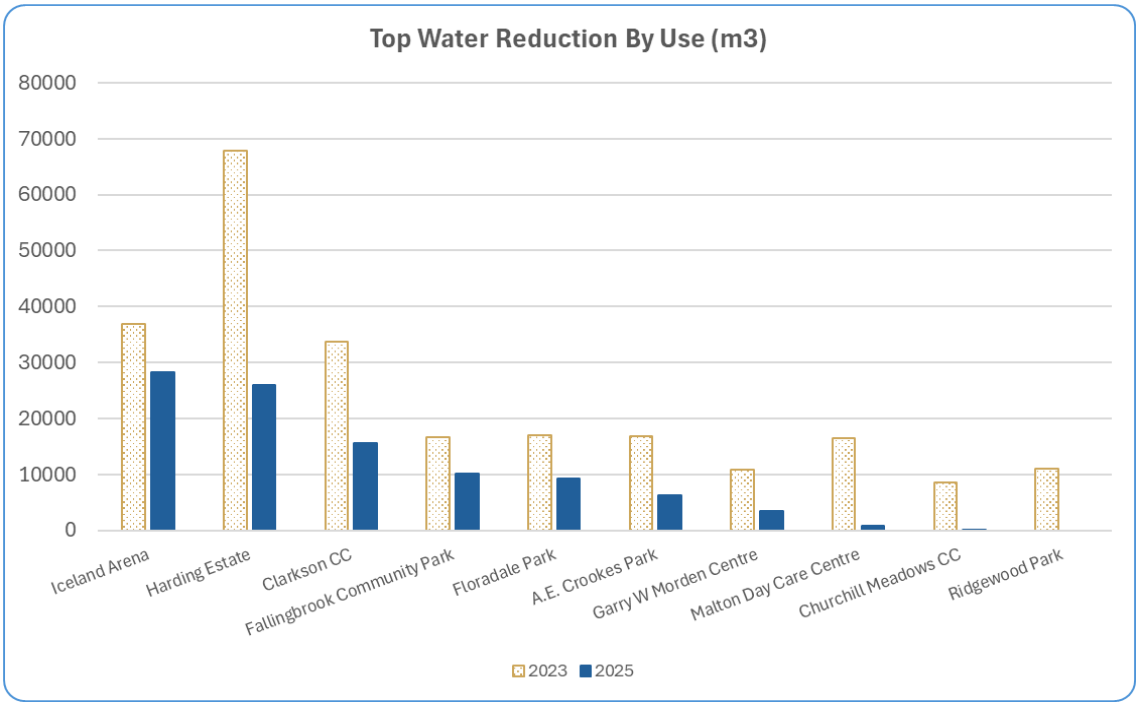
City of Mississauga through its Energy Design Guidelines, Corporate Green Building Standards and Climate Change Action Plan has been signaling the shift towards cleaner fuel sources with each new build, renovation or lifecycle replacement project. For example, electric heat pumps have become more mainstream for space heating and domestic hot water applications.

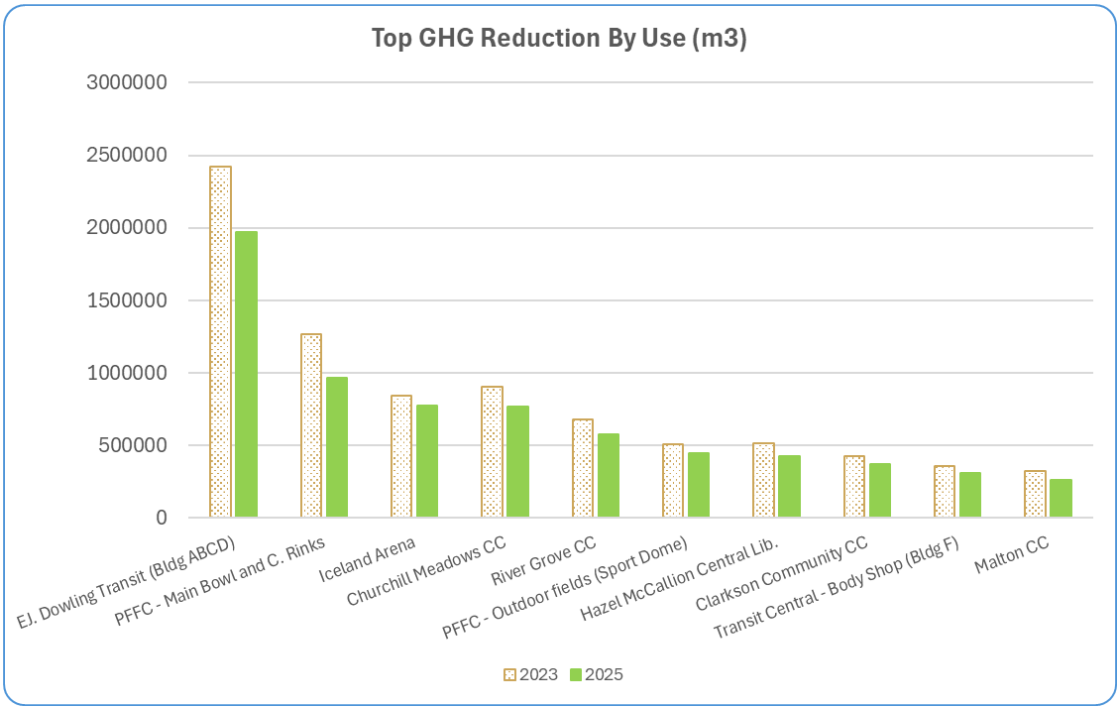
Changes in Consumption

Below is a shortlist of the facilities with the largest absolute reduction in consumption and GHG.




Top Natural Gas Reduction By Use (m3)
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
EJ. Dowling Transit (Bldg ABCD)
PFFC - Main Bowl and C. Rinks
Churchill Meadows CC
Iceland Arena
River Grove CC
PFFC - Outdoor fields (Sport Dome)
Clarkson CC
Hazel McCallion Central Lib.
Transit Central - Body Shop (Bldg F)
Malton CC
2023
2025


Top Water Reduction By Use (m3)
80000
70000
60000
50000
40000
30000
20000
10000
0
Iceland Arena
Harding Estate
Clarkson CC
Fallingbrook Community Park
Floradale Park
A.E. Crookes Park
Garry W Morden Centre
Malton Day Care Centre
Churchill Meadows CC
Ridgewood Park
2023
2025



On the other end of the spectrum, there are a few facilities for which increase in consumption were observed. Energy Management is already working with the facilities to ascertain the specific reasons and implement solutions to bring the consumption in line. Some of the reasons already identified include:

- Addition of new equipment
- Equipment performance deviating from expected at one of our larger consuming facilities
- Addition of Services
- Operational Changes

New Facilities & Renovations

As population grows in the City, so does the need to expand the City's services and facilities. Since it would be inequitable to compare year-to-year energy consumption as significant deviations in operations occur, such deviations/anomalies were adjusted for in the statistics. A list of the facilities for which adjustments were made is shown Appendix A.

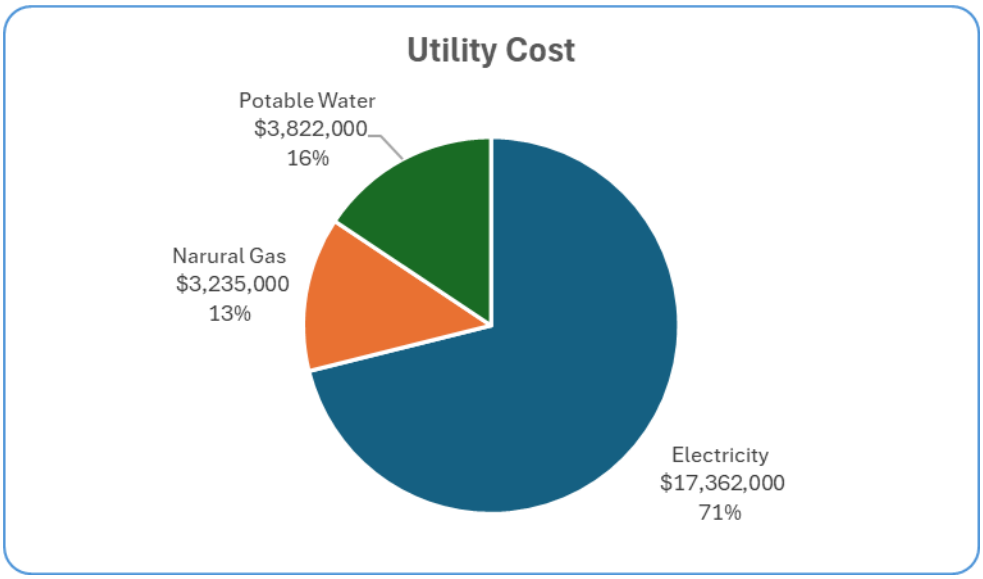
Financials

In 2025, City of Mississauga realized the following financial performance for Utility Savings, Cost Avoidance and Incentives. Utility Savings relates to cost savings due to a reduction in consumption – this can be negative depending on the relative change between consumption reduction and rate increase; Cost Avoidance is based on strategies implemented which prevents the City from incurring costs in future time periods; and Incentives relates to funds collected from utility partners incentivising improvement in consumption.

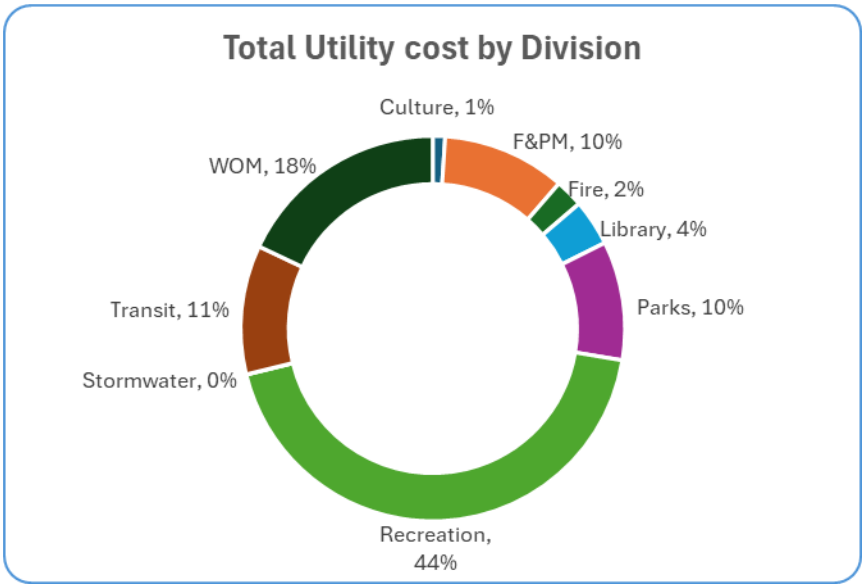
Utility Savings	Cost Avoidance	Incentives in 2025
($377,758)	$164,170	$195,360

Utility Cost

The utility cost in 2025 of $24,425,010 was largely driven by electricity, which accounted for 71% of the total, natural gas accounting for 13% and water accounting for the balance.



Overall, the recreation division accounts for the greater portion of this cost (44%), followed by WOM which accounts for 18%. The overall utility cost is significant, leading to City of Mississauga providing the requisite focus to manage those costs.



Utility Cost Avoidance

City of Mississauga employs different strategies to manage and reduce its utility costs. These costs can be lowered through reduction in consumption as well as other strategies such as bill validations, sanitary sewage rebate programs and storm water management best practices.

An annual savings of approximately $164,170 for Sanitary sewer charge appeals due to diversion measures.

Incentives

Incentives were provided through the Independent Electricity System Operator's (IESO) Save On Energy Retrofit Program as well as Enbridge's Retrofit and Custom Projects Incentives and Conservation Program. A summary of the 2025 application processing is provided in the table below.

Incentive Aplications	Quantity	Saving			
		Incentive ($)	Demand (kW)	Energy (kWh)	Natural Gas (m3)
Started in 2025 and closed	2	$ 5,761	-	-	12,435
Started in 2025 but not closed	3	$ 1,354,010	1,024	2,092,700	10,443
Brought forward to 2025 and closed	18	$ 189,600	119	914,271	45,601
Brought forward and active in 2025 but not closed	3	$ 23,283	3	61,029	-
Total	**26**	**$ 1,572,654**	**1,146**	**3,068,000**	**68,479**

In 2025, with the introduction of the Independent Electricity System Operator (IESO) Solar PV Incentive Program, the Energy Management team strategically shifted its focus toward pursuing larger-scale solar photovoltaic (PV) incentive projects. This approach was intended to maximize returns by prioritizing high-value incentive opportunities while managing other incentive opportunities in parallel. As a result of this strategy, the City of Mississauga submitted applications for incentives totaling approximately $1,350,000 in 2025.

Key Initiatives

City of Mississauga's 5 year Energy Conservation Plan (2024-2028) follows the principles of ISO 50001 and its Plan-Do-Check-Act continual improvement framework. It outlines the program of work being undertaken to improve our environmental footprint and ensure the city remains on the path to sustainability. These measures have contributed to City of Mississauga's goal of meeting and exceeding its goal of 1% reduction in energy consumption and greenhouse gas (GHG) emissions each year over 2023 levels and positions the corporation for continued success. Some of the key initiatives that have been pursued or are in the development stage include:

- Equipment Upgrades and other Energy Conservation Measures
- Decarbonization projects
- Implementation of the Corporate Green Building Standard (CGBS) for New Construction and Major Renovation
- Implementation of the BAS Standard and Master Specification
- Further roll out of Energy Analytics and Fault Detection
- Renewal / maintenance of ISO 50001 certification

Equipment Upgrades and Energy Conservation Measures

Throughout this period there have been numerous projects centered around maintaining and improving the energy profile of our facilities. Some of these include the following, with a detailed Gantt chart included in Appendix B.

Pool Energy Measures

- New regenerative pool filter, pool drain heat recovery and pool dehumidifier heat recovery system at Frank McKechnie Community Centre. Pool Drain Heat Recovery System at Churchill Meadows Community Centre
- Benefits include reduced energy consumption, efficient equipment operation, improved user comfort

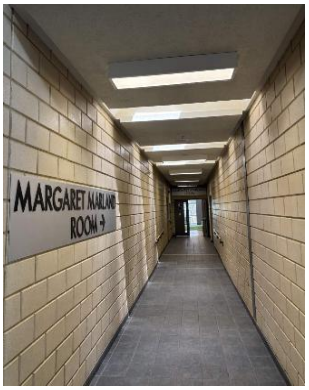
Pool Drain Heat Recovery

Regenerative Filter

Pool Dehum Heat Recovery

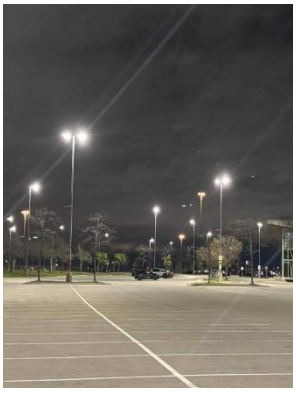
Lighting Upgrades

- Ongoing upgrade to high performance lighting and controls at various facilities including Parking Lots, Libraries, Sports Facilities and Recreational Hall
- Benefits include improved lighting, reduced electricity consumption and maintenance cost



LED Interior Lighting

LED Exterior Lighting



LED Parking Lot Lighting

Energy Efficient Lifecycle Upgrades

- High efficiency boilers and water heaters, refrigeration equipment and VFD at various facilities
- Benefits include improved equipment and operational efficiency, reduced energy consumption and operating cost

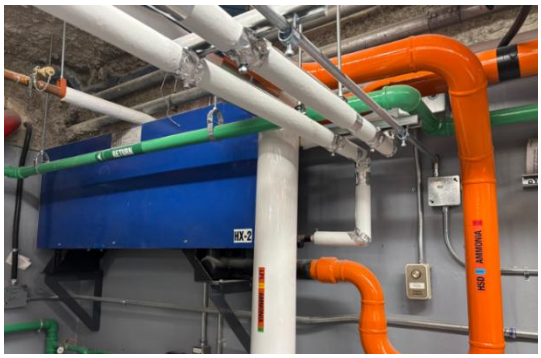
Condensing Boiler

High Efficiency Water Heater

Ice Plant Compressors

Heat Recovery Upgrades

- Installation of heat recovery systems to recover heat generated from the refrigeration plant to preheat water heating systems in the building. This has been completed at Paul Coffey Arena, Iceland Arena, Tomken Twin Arena, and Clarkson Community Centre.
- Installation of pool heat recovery systems to recover heat from pool dehumidification process and pool drainage to reheat the pool. This has been completed at various pools.



Refrigeration Plant Heat Recovery Unit

Decarbonization Projects

To advance its decarbonization objectives, City of Mississauga has proactively looked ahead of its budget cycle at upcoming life cycle replacements. Studies are done in advance of the budget validations process to assess decarbonization alternative to the systems to be replaced. In situation where building electrical capacity becomes a limiting factor, efforts are made to implement hybrid solutions which provides a reduction in the carbon footprint while satisfying the required service. In that regard, there are major renovations underway that focussed on decarbonization such as:

Hybrid Heat Pump RTUs: This includes the replacement of standard gas heating RTUs with Hybrid Heat Pump Style RTUs. This has been completed at Lorne Park Library, Malton CC, and Clarkson CC.

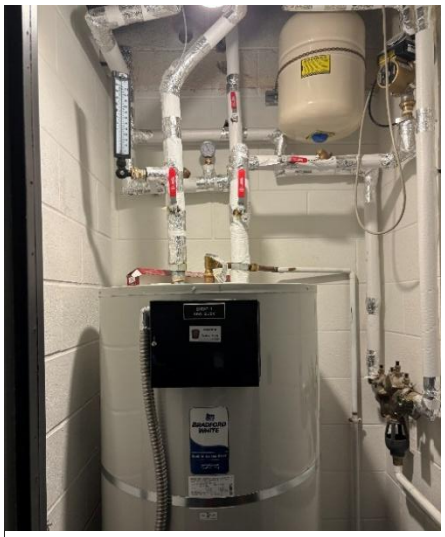
Hybrid Heat Pump Roof Top Unit

Cold Climate VRF Unit

Cold Climate Variable Refrigerant Flow (VRF) Heat Pumps: This includes the addition of cold-climate VRF heat pumps. This has been completed at existing Fire Station renovations of FS102, FS108, FS114 & FS115.

Heat Pump or Electric water heater: This includes the replacement of gas DHW water heater with electric heater or Heat Pump Water Heater: This has been completed at Tomken Arena, OCJ, Mavis Yard, FS102, FS108, FS114 & FS115.

Heat Pump Water Heater



Electric Boiler

Hybrid Boiler Heating System: This includes the replacement of standard gas heating boiler with a combination of electric and high efficiency gas boilers. This has been completed at Living Arts Centre, Erin Mills Twin Arena, FS102, FS108, FS114 & FS115.

Building Tune-up

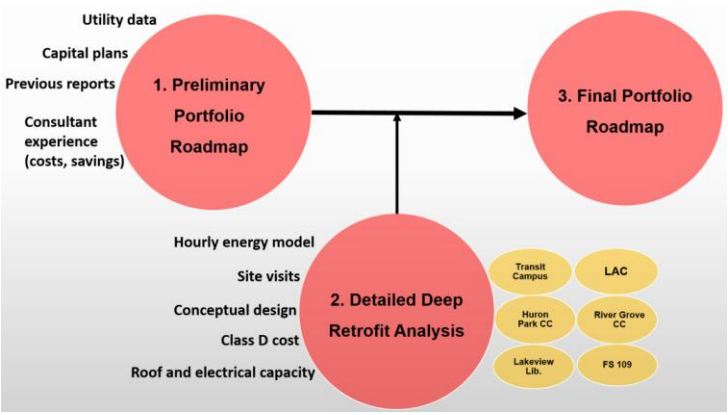
The real-time Energy Management System (described further in the Energy Analytics and Fault Detection software section) that brings multiple data sources together for more detailed and streamlined building analytics is the backbone for the Building Tune-up Program. Building Tune-up is an ongoing commissioning program that seeks to restore and sustain equipment as close as possible to optimal operation. Its goal is to deepen the awareness of energy efficiency, uncover inefficient operation, and develop action items to improve performance. It will improve collaboration with facility operating and maintenance staff, and involves 6 phases as follows:

- Phase 1: Data Gathering
- Phase 2: Energy Analysis
- Phase 3: Diagnostics Monitoring & Functional Testing
- Phase 4: Maintain a Findings Log
- Phase 5: Action Plan
- Phase 6: Ongoing Monthly Cx

Essentially, on a weekly basis, performance deviations that are flagged are analysed and resolved either through a controls intervention or the issuance of work orders if maintenance is required. On a longer-term basis, sites whose quarterly performance statistics show the highest variances from the utility budgets, are identified and assigned for detailed analysis and resolution.

Climate Action Roadmap of Existing Municipal Buildings

Following the City's Climate Change Action Plan to reduce total emissions across its different portfolios by at least 40% by 2030 and 80% by 2050 below 1990 levels, a roadmap for City-owned and operated buildings portfolio was developed to reach the targets. The study investigated 56 facilities in total to help the City make informed decarbonization decisions for its existing portfolio of buildings.



The study explored 5 decarbonization pathways for each building namely:

1. **Business As Usual (BAU):** Minimum upgrades for end-of-life equipment replacement such as condensing boiler vs. non-condensing boiler, LED upgrades, regular controls upgrade
2. **Measured Retrofit:** The main additional components of this pathway are electrification of heating and PV installation for the buildings that can accommodate those changes without significant changes of the building envelope or energy distribution systems.
3. **Deep Retrofit:** The changes in Heating, Ventilation, and Air Conditioning (HVAC) of the buildings are more aggressive than the second pathway. As such, using equipment such as centralized heat pumps and solar PV and electrification for sites that will require structural and electrical upgrades are included.
4. **Integrated Retrofit:** This pathway explores the most innovative technologies such as ground source heat pumps and VRF technology. Moreover, envelope upgrades are more aggressive in this pathway.
5. **Preferred Retrofit:** This pathway is a selection of the best options for implementation from pathway 1 – 4, taking into consideration measures which most closely align with the City's capital renewal plans

The study identified the most optimal pathway compared to the capital cost is the fifth pathway, which is a mixture of the Measured Retrofit and Deep Retrofit pathway. The results of the study has provided the following guidance for natural gas fired equipment/system replacement going forward:

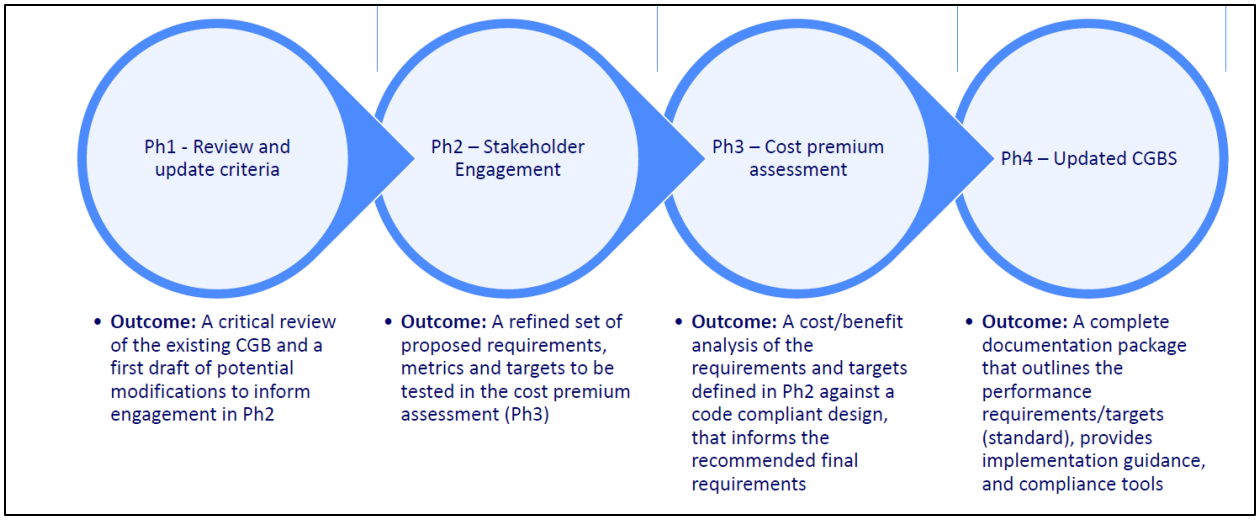
1. RTUs with gas heating - Replace with air sourced heat pump RTU with back up gas heating as the first replacement option
2. Gas fired Boiler - replace with hybrid heating system consisting of a primary electric boiler and secondary gas boiler
3. Gas fired Domestic Water Heating System - replace with an air source heat pump where applicable.

Corporate Green Building Standards

City of Mississauga has been implementing its **Corporate Green Building Standard (CGBS)** to its own buildings and facilities. This standard represents a comprehensive set of environmental performance requirements that establishes City of Mississauga as a leader in sustainable buildings in Canada, and that complement existing policies such as the Green Building Standard for New Construction and Major Renovation (that require the facility to be shutdown).

CGBS was developed to allow design teams flexibility, with respect to the level of environmental performance that can be achieved on a given project. The Standard sets three (3) increasing levels of performance that design teams can elect to pursue according to a specific project's characteristics and constraints. Targets have been set for seventeen (17) key environmental performance credits grouped in six (6) categories.

In 2025, an update to the CGBS got underway to evaluate and refine the existing performance and compliance requirements across all categories. The purpose of this update is to ensure alignment with the current industry trends, the evolving sustainability frameworks adopted across the Canadian public sector, and City of Mississauga policies and/or by-laws. This work is being support by a highly experienced consulting team, whose portfolio includes contributions to the Region of Peel's Net Zero framework, the City of Toronto's Green Standard Version 4.0, and Metro Vancouver's Green Building Standards. The update has been structured into four implementation phases to support a comprehensive and methodical review process.



Completed CGBS Projects

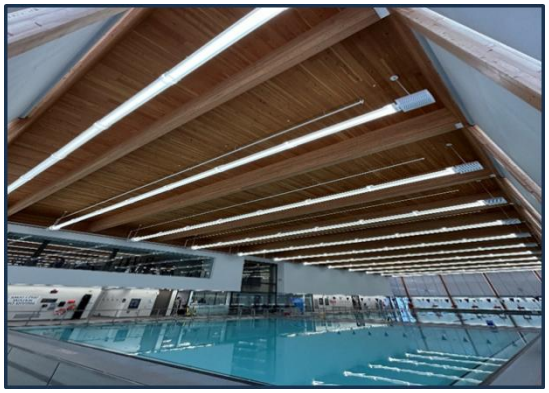
The following projects are the first to have been completed under the CGBS and are within the first year of operation. City is excited about reviewing the performance metrics once sufficient time has passed, but it is clear that there are significant improvements and standardization in the implementation processes and outcomes of important sustainability metrics for City of Mississauga. Additionally, there are lessons learned that are serving to improve future implementations of the various standards and systems. The completed CGBS projects include:

- Hazel McCallion Central Library new extension (Level 1)
- Burnhamthorpe Community Centre new extension (Level 1)
- Fire Station 125 new building (Level 3 for Energy and level 1 for remaining categories)
- Carmen Corbasson Community Centre (Level 1)
- Fire Station 123 new building (Level 3 for Energy and level 1 for remaining categories)

Fire Station 125

Burnhamthorpe CC

Hazel McCallion Central Library

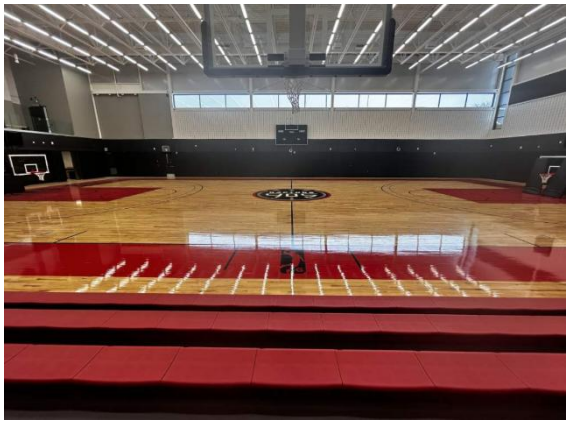


Carmen Corbasson Community Centre

Fire Station 123

CGBS Projects in various Stages of Completion

Paramount Fine Food Centre Sportsplex Gymnasium Expansion (Targeting Level 1)



Parameter	*Target*	*Modelled*
EUI (kWh/m2/year)	160	128
TEDI (kWh/m2/year)	45	43.9
GHGI (kgCO2/m2/year)	20	13.5
81 kW Solar PV System, R26.3 Walls (effective), R35.7 Roof (effective)		

Project Status: Construction started April 2024 and is expected to be completed in 2026

Project Summary: This project involves expansion to the existing building basketball field and associated equipment. A Solar PV System is also being added. The CGBS Standard is only being applied to the addition.

Fire Station 124 (Targeting Level 3 - Energy)

Parameter	*Target*	*Modelled*
GHGI (kgCO2/m2/year)	5	4
VRF system with Fan coil units, Energy Recovery Ventilation system, Main Electric Boiler with CO2 Heat Pump for the Domestic Hot water Heater. R20 Walls (effective), R40 Roof (effective), 4 Bike Racks, 4 EV Charging Station Infrastructure, Bifold Door, Solar PV system		

Project Status: The project started in 2023, and it is currently in the Construction Phase with expected substantial completion by May 2026.

Project Summary: Fire Station 124 is a new development that is targeting Net Zero Building Status. It is one of six new fire stations planned over the next few years to optimize emergency response times.

South Common Community Centre (Targeting Level 2)

Parameter	*Target*	*Modelled*
EUI (kWh/m2/year)	294	283
GHGI (kgCO2/m2/year)	35	8.5
VRF Heat Pump, Air source heat pump with heat recovery, R21 Walls (effective), R36.2 Roof (effective), 13 Bike Racks, 14 EV Charging Station Infrastructure, Solar PV system		

Project Status: The project is currently in the construction phase and is expected to be completed in 2027.

Project Summary: Teardown and redevelopment of the South Common Community Centre. Includes modernizing and increasing the library size, improving accessibility and energy efficiency, improve the indoor aquatic center, mechanical components and change rooms, modernize and expand the fitness center.

Building Automation System Standard Implementation

The Building Automation System (BAS) is primarily used to control building HVAC, lighting, ice-making and other systems. Standardization of BAS provides the minimum requirements to design, configure, install, label and operate BAS, and includes the effective control algorithms for energy efficient operation of equipment. Point naming conventions and unified Graphical User Interface (GUI) across all City facilities enables the seamless transition of staff between facilities and promotes on-going optimal operation. Trend logs & alarms settings allow easier troubleshooting, minimize downtime and increases energy conservation in City's facilities.

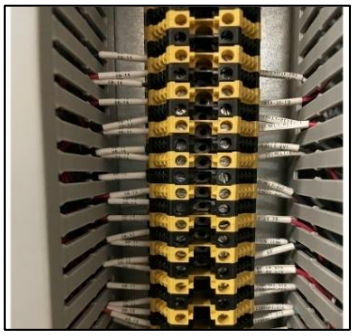
There are approximately 40 city buildings currently equipped with BAS. Since the last report City of Mississauga has completed or started upgrading the BAS in a number of them in keeping with our 5 year plan to replace all existing BAS with systems that follows the new Master Specifications. BAS replacements have been completed or is in progress in the following buildings:

No.	Building	Status and Completion
1	Animal services	Completed
2	Burnhamthorpe Community Centre	Completed
3	Burnhamthorpe Library (Partial)	Completed
4	Carmen Corbasson Community Centre	Completed
5	Hazel McCallion Central Library	Completed
6	Clarkson Community Centre	Completed
7	Clarkson Yard	In progress
8	Erin Mills (Partial)	Completed
9	FS125	Completed
10	Frank McKechnie Community Centre	Completed
11	Gary W. Morden Centre	Completed
12	Huron Park Recreation Centre	Completed
13	Iceland (Partial)	In progress
14	Lake Front Promenade Marina	Completed
15	Living Arts Centre	Completed
16	Lorne Park Library	Completed
17	Malton Community Centre	Completed
18	Malton Youth Hub	Completed
19	Mavis Yard	Completed
20	Meadowvale 4 Rinks	Completed
21	Meadowvale Theatre	Completed
22	Senior's Center	Completed
23	Transit (ABCDEF)	Completed
24	Ontario Court of Justice	Completed

No.	Building	Status and Completion
25	Paramount Fine food Community Rinks	Completed
26	Paramount Fine Foods Sports Zone	Completed
27	Paul Coffey Arena	Completed
28	Tomken Arena	Completed
29	South Common	In progress
30	Meadowvale CC	In progress
31	Meadowvale Yard	In progress
32	Civic Centre	In progress
33	Harding Estate	In progress
34	River Grove Community Centre	In progress
35	Woodlands Library	In progress
36	Mavis West	In progress

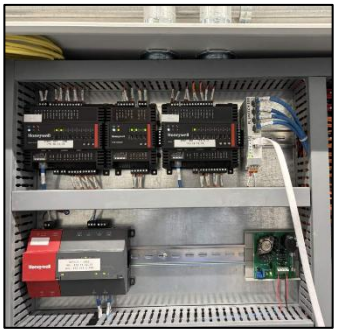
The new Niagara N4 front-end has a modern 'look and feel', which is more user friendly and standardized across all sites delivering many benefits and contributing to an improved BAS system.

City of Mississauga (CoM) anticipates energy savings, Green House Gas (GHG) emission reductions, and operational cost savings to be associated with the BAS upgrades and replacements. These savings will be realized through the many features including timed override, global scheduling for statutory holidays or other events, easier troubleshooting, availability of longer trend logs for easy diagnostics as well as interoperability, among other things.



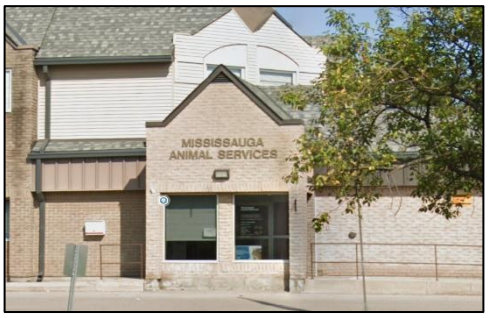
BAS Terminations

BAS Panels



BAS Controllers

The BAS projects completed in 2025 include:



Animal Services

Gary Morden

Burnhamthorpe Community Centre

Carmen Corbasson Community Centre

FS125

Frank McKechnie Community Centre

Huron Park Recreation Centre

Iceland (Partial)

Lake Front Promenade Marina

Lorne Park Library

Renewable Energy

City of Mississauga has continued to ensure that where suitable, all future major renovations within the city are planned to have either a renewable energy system installed or the required infrastructure to facilitate installation of the renewable energy system at a future date. The table below shows all existing systems and planned developments on the horizon:

Site	Status	Type	Solar PV Size (kW)	Comments
Burnhamthorpe CC	Completed 2024	Solar PV	165	
Burnhamthorpe CC	Existing (Leased)	Solar PV	175	Owned by others
Carmen Corbasson CC	Completed	Solar PV	TBD	Solar Ready
Clarkson CC	New 2025 - Design	Solar PV	375	Planned Completion 2026
Duncairn Solar Pathway Lighting	Existing	Solar PV	4	Off-Grid Pathway Lighting
Fire Station 123	Completed 2025	Solar PV and Solar Cladding	90	
Fire Station 124	Design 2024	Solar PV and Solar Cladding	110	Planned Completion 2026
Fire Station 125	Completed 2024	Solar PV and Solar Cladding	85	
Hazel McCallion Central Library	Completed	Solar PV	TBD	Solar Ready
Huron Park CC	Existing (Leased)	Solar PV	150	Owned by others
Lion Club of Credit Valley Pool	Existing	Solar Water Heater		47,000 ekWh p.a.
Paramount Fine Foods Centre	Existing	Solar PV	25	
Paramount Fine Food Centre	Design 2024	Solar PV	920	Planned Completion 2026
South Common CC	Design 2024	Solar PV	300	Planned Completion 2027
Transit Campus	Completed 2024	Solar PV	~1,000	

Energy Analytics and Fault Detection

City of Mississauga's real-time Energy Management System (EMS) has expanded to monitor energy and water consumption across 24 buildings, with additional facilities in progress for integration as part of the ongoing Building Automation System (BAS) upgrades. Notably, the system includes main utility metering, equipment-level metering and BAS integration in select facilities to track high electricity demand and irregular building operations.

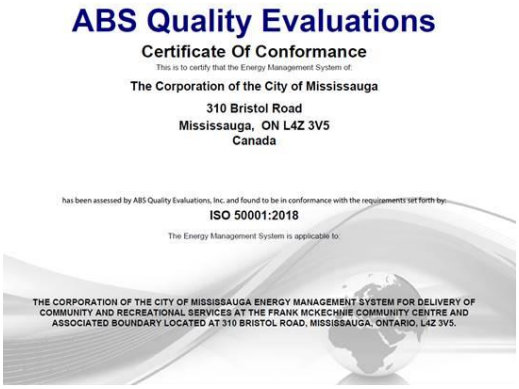
The City of Mississauga's real-time Energy Management System (EMS) now monitors energy and water consumption across 33 buildings, with more facilities being added through ongoing BAS upgrades. By combining main utility metering, equipment level metering, and BAS data, the system provides detailed analytics and leverages real time fault detection to identify irregular operations, high electricity demand, and inefficiencies. The EMS is also being used as part of monitoring-based commissioning (MBCx) for newly built or recently renovated sites such as Fire Station 125 and Fire Station 123 ensuring new systems operate as designed and that deficiencies are identified early during post-construction performance verification.

A key feature of the EMS is its use of automated rulesets that detect abnormal trends in equipment performance, scheduling, and energy use. When issues arise, the system generates alerts ("sparks") that prompt Energy Management Representatives to investigate and classify them as BAS Controls Issues or Mechanical Issues. These findings are then routed as work orders to the appropriate team, enabling fast and coordinated resolution. This structured workflow strengthens building tune-ups, monitoring-based commissioning efforts, and long-term operational efficiency by allowing teams to proactively address issues before they escalate, ultimately reducing energy waste and supporting sustained high-performance operation across municipal facilities.

Facility Integration to Sky Spark			
Facility	**Main Utilities**	**Equipment-level Metering**	**BAS**
Burnhamthorpe CC	✓	✓	✓
Carmen Corbasson CC	✓	✓	✓
Clarkson CC	✓	✓	✓
Churchill Meadows CC	✓		✓
EJD Transit Complex (Solar)	✓	✓	✓
Erin Mills Twin Arena	✓	✓	✓
Frank McKechnie CC	✓	✓	
Fire Station 125	✓	✓	✓
Fire Station 123	✓	✓	✓
Hazel McCallion Central Library	✓	✓	✓
Huron Park CC	✓	✓	✓
Malton CC	✓	✓	✓
Meadowvale 4 Rinks Arena	✓	✓	✓
Meadowvale Theatre	✓		✓
Mississauga Valley CC	✓	✓	✓
Paramount Fine Foods Centre	✓	✓	✓
Paramount Fine Foods Centre –Sports Zone	✓	✓	✓

Facility Integration to Sky Spark			
Port Credit Arena	✓	✓	✓
River Grove CC	✓	✓	✓
Tomken Twin Arena	✓	✓	✓
Garry W Morden Centre	✓	✓	✓
Mavis South Yard	✓	✓	✓
Living Arts Centre	✓	✓	✓
Ontario Court of Justice (Heating Plant)	✓		✓
Iceland Arena	✓		✓
Paul Coffey Arena			✓
Lorne Park Library	✓		✓
3240 Mavis Road	✓		
Clarkson Yard	✓		

ISO 50001 Certification



City of Mississauga's Energy Management System follows the principles of ISO 50001 by applying a systematic and data-driven approach to energy performance within the "Plan-Do-Check-Act" continual improvement framework used for our 5 year Energy Conservation Plan. The System incorporates the tools and technologies that are essential in implementing management strategies to support energy performance improvements, reducing energy costs, and reducing greenhouse (GHG) emissions at City facilities. The ISO 50001 certification first achieved by the City of Mississauga's Frank McKechnie Community Centre in 2022 has been maintained during 2024 demonstrating that the City is progressing along its vision of becoming a leader in environmental stewardship as it continues to drive energy and climate sustainability efforts transparently.

ISO50001 is the governance structure used to manage City of Mississauga Facilities. Using a holistic approach to energy management is fundamental in driving the Corporation to maximize asset value, utilize more energy efficient technologies, and to continue to make strides in the City's commitment to combating climate change and towards achieving the City's long term vision of creating resilient and low-carbon communities.

APPENDIX A

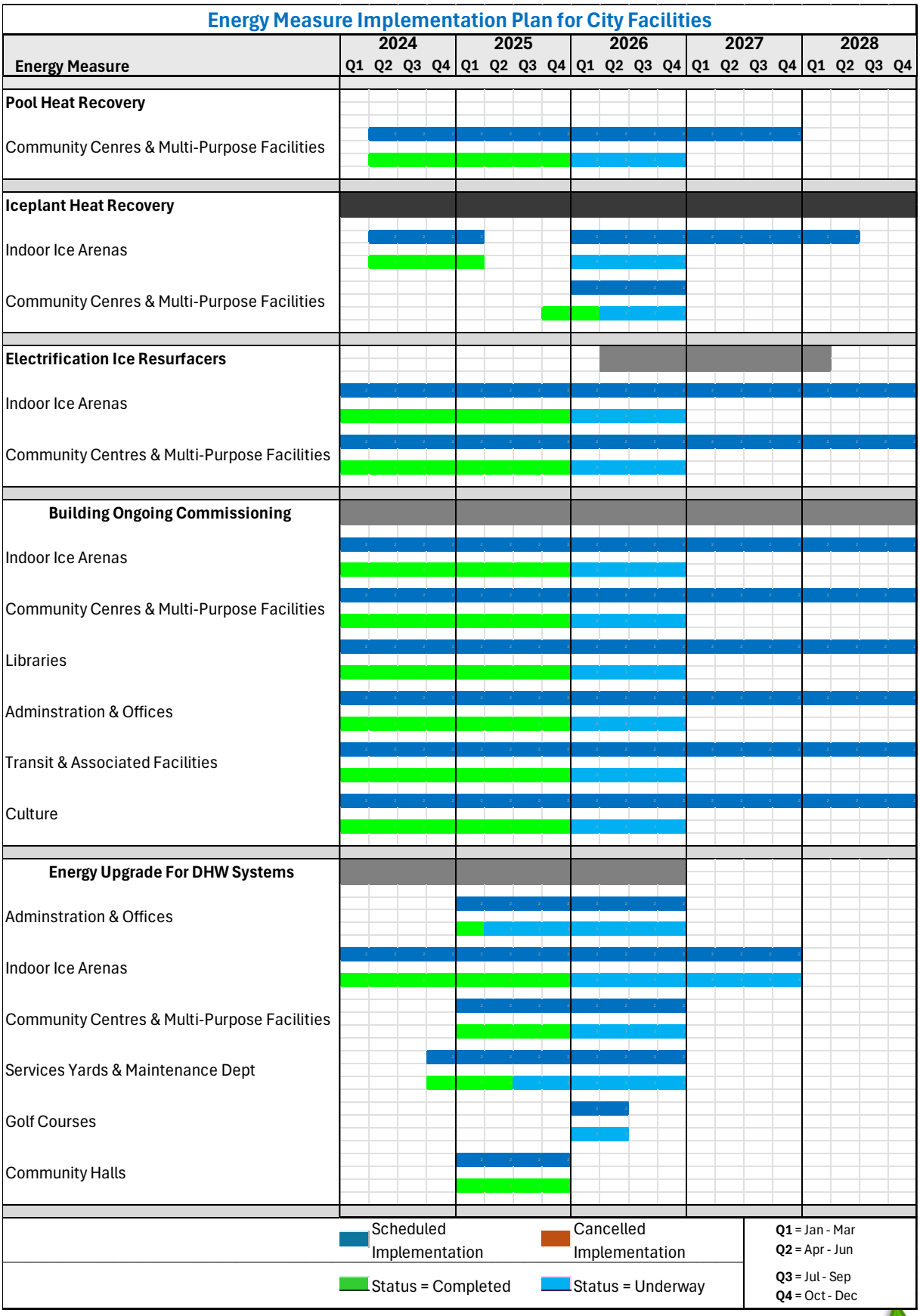
New Facilities & Renovations

Facility	2025 Annual Consumption (post adjustment)
Mavis West New facility after baseline year 	1,734,661 kWh 90,489 m3 NG 8,720 m3
Fire Station 125 New facility after baseline year 	236,909 kWh 80 m3 NG 462 m3
Malton Youth Hub New facility after baseline year 	196,069 kWh 23,711 m3 NG - m3
Fire Station 114 Major Renovation 	69,501 kWh 12,762 m3 NG 142 m3
Carmen Corbasson Community Centre Major Renovation 	468,619 kWh 96,569 m3 NG 3,343 m3
South Common Community Centre Major Renovation 	1,113,399 kWh 120,266 m3 NG 11,470 m3
Fire Station 115 Major Renovation 	62,514 kWh 13,564 m3 NG 248 m3

APPENDIX B

Schedule of Energy Measures

Energy Measure Implementation Plan for City Facilities



Energy Measure Implementation Plan for City Facilities