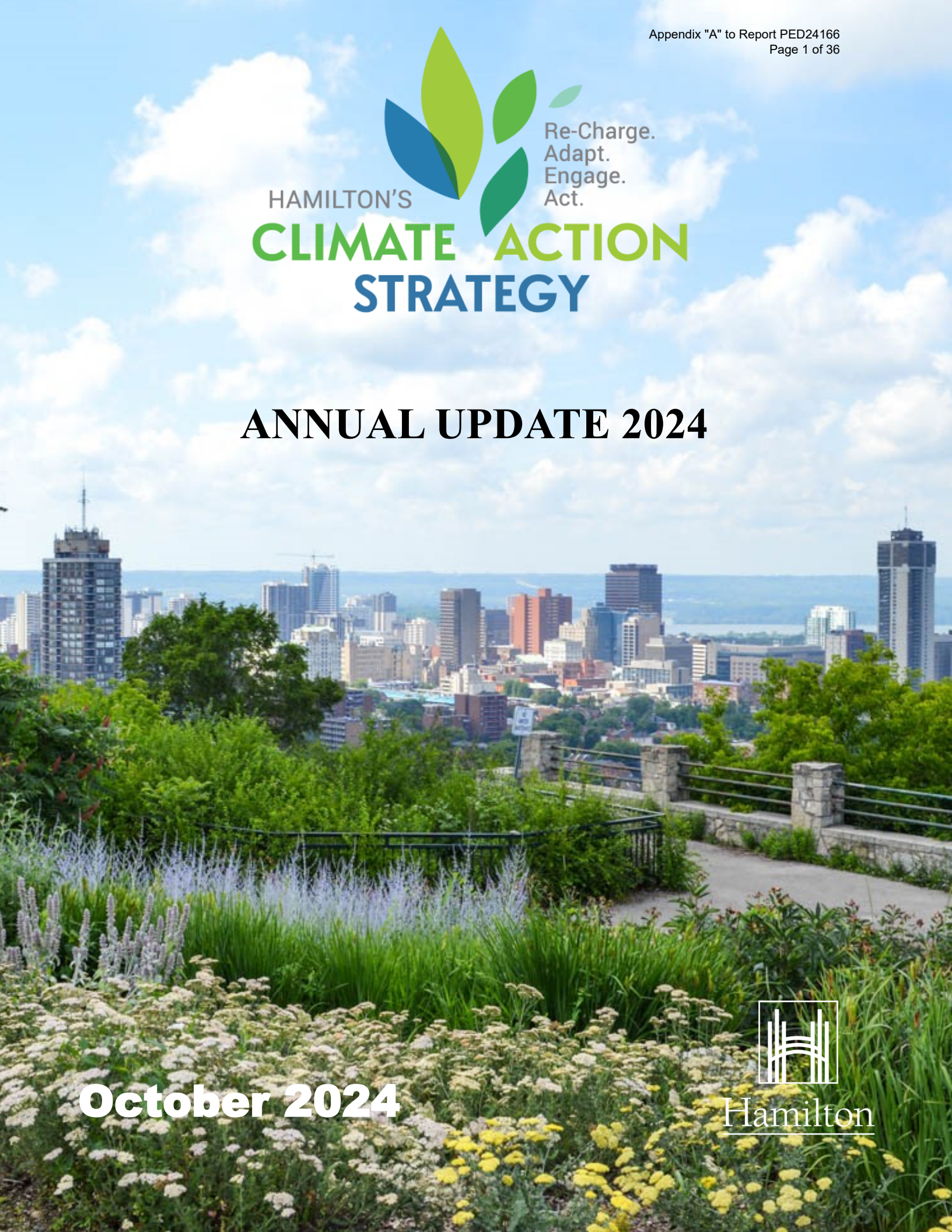
Re-Charge.
Adapt.
Engage.
Act.

HAMILTON'S
CLIMATE ACTION STRATEGY

ANNUAL UPDATE 2024



October 2024

Hamilton

LAND ACKNOWLEDGMENT

We acknowledge the City of Hamilton is situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee, and Mississaugas. This land is covered by the Dish With One Spoon Wampum Belt Covenant, which was an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes. We further acknowledge that this land is covered by the Between the Lakes Purchase, 1792, between the Crown and the Mississaugas of the Credit First Nations.

Today, the City of Hamilton is home to many Indigenous people from across Turtle Island (North America) and we recognize that we must do more to learn about the rich history of this land so that we can better understand our roles as residents, neighbours, partners, and caretakers.

Hamilton

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City of Hamilton Announced as the National Winner of World Wildlife Fund's One Planet City Challenge

The City of Hamilton has been selected as the National Winner of World Wildlife Fund's (WWF) One Planet City Challenge (OPCC). OPCC is one of the largest and longest-running climate challenges for cities in the world, and this year, 359 cities participated from 48 countries, from which 62 finalists were selected.

Based on reported climate data, Hamilton, along with other shortlisted cities, was assessed by a jury of experts from a diverse range of organizations – from C40, to the African Development Bank to ICLEI and chaired by WWF Cities lead Dr. Jennifer Lenhart.

The City of Hamilton submitted robust climate data and information on its actions through the Carbon Disclosure Project and entered into the international OPCC. The OPCC encourages cities to develop ambitious climate targets and commitments in line with the targets of the Paris Agreement. This year showed that even more cities are participating and aligning their targets to limit global warming to 1.5 ℃.

This year's jury was particularly impressed by the City of Hamilton's solid Climate Action Strategy, the active involvement of various partners and the creation of a dedicated Office of Climate Change Initiatives. The City demonstrates a strong focus on adaptation and resilience, complemented by well-defined mitigation targets.

As a national winner, the City of Hamilton is eligible to take part in WWF's We Love Cities competition – open exclusively to OPCC finalists – where Hamilton's public will be invited to vote, express their love for their city and to submit suggestions as to how their City can further improve local sustainability efforts.

WE LOVE
HAMILTON

Introduction

The World Meteorological Organization (WMO) has confirmed that 2023 was the hottest year on record, with the global mean temperature at approximately 1.45 degrees Celsius above the 1850-1900 average. As the WMO notes, the increase in temperature comes with an increase in the frequency of extreme weather events including heatwaves, floods, droughts, wildfires and rapidly intensifying tropical cyclones.

The United Nations Environment Program's 2023 annual emissions gap report sums up this current planetary warming very bluntly, with its play-on-words title '*Broken Record – Temperatures hit new highs yet world fails to reduce emissions (again)*'. The report provides an annual assessment of the emissions gap between 'pledged greenhouse gas (GHG) emissions reductions and the reductions required to align with the long-term temperature goal of the Paris Agreement'. The 2023 report recognizes the failure of high-emitting countries to stringently reduce their GHG emissions and subsequently calls for these countries to further accelerate the reduction of domestic emissions, including commitments to reaching net zero as soon as possible.

More and more Canadians are being impacted by our changing climate with each passing year. An August 2024 Leger Poll revealed that more than 1 in 3 Canadians reported being directly impacted by extreme weather events such as forest fires, heat waves, floods or tornadoes, an increase from the 1 in 4 Canadians reporting direct impacts in 2023. We are seeing and experiencing these impacts here in Hamilton, with extreme summer heat, flooding from extreme rainfall events, and climate fuelled changes like earlier and more extensive cyanobacteria (blue-green algae) blooms in our Harbour and along the Lake Ontario shoreline. The 2023 Office of Climate Change Initiatives update emphasized that there is still a window of opportunity to prevent the worst-case scenario of over 1.5 degrees Celsius increase in global temperatures. But, as the global average temperature trends are showing, that window is starting to close, making immediate action that much more urgent now, combined with the necessary financial investments and commitment to a fair transition to net zero greenhouse gas emissions.

Purpose of Report

Hamilton's Climate Action Strategy charts a pathway to reaching net zero greenhouse gas emissions by 2050 or sooner. This Annual Report provides an update on the City of Hamilton's progress with reducing its GHG emissions, and City efforts to support the broader community to do the same through the creation of actions, policies, plans, and incentives. In addition, this report provides an update on municipal efforts to prepare both the corporation and the community for the impacts of a changing climate. It is also important to acknowledge that Hamilton's Climate Action Strategy is a community-wide strategy that requires action well beyond the efforts of the City of Hamilton; businesses and industry, local educational institutions, hospitals, and residents all have an important role to play in doing what they can to mitigate and adapt to climate impacts.. This report also includes updates on the progress of those broader community efforts.

[1] See https://wmo.int/site/frontline-of-climate-action/state-of-climate

About the Office of Climate Change Initiatives

The Office of Climate Change Initiatives (OCCI) was established in November 2022 with a mandate to oversee the implementation of Hamilton's Climate Action Strategy. Hamilton's Climate Action Strategy included a recommendation that the Office be established to ensure that efforts were focused, and resources committed to initiate immediate climate action.

The OCCI team includes 5 full-time staff members. The newest addition to the team is Project Manager Adam Watson, who was transferred from the City's Healthy & Safe Communities Division in 2024.

Pictured left to right: Trevor Imhoff, Lynda Lukasik, Beatrice Ekoko, Cathrin Winkelmann, Adam Watson

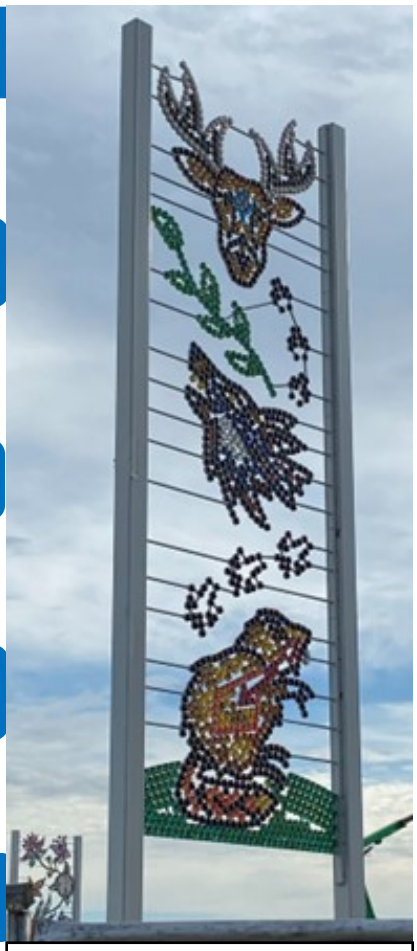
You can reach out to the Office of Climate Change Initiatives to get more information about Hamilton's Climate Action Strategy, to request a presentation, or to explore the potential to collaborate on Strategy implementation. Email the Office at: climatechange@hamilton.ca. You can also reach out directly to members of the OCCI staff team:

Name & Title	Telephone	Email
Beatrice Ekoko Project Manager	(905) 546-2424 x6885	Beatrice.Ekoko@hamilton.ca
Trevor Imhoff Senior Project Manager	(905) 546-2424 x1308	Trevor.Imhoff@hamilton.ca
Lynda Lukasik Director	(905) 546-2424 x3169	Lynda.Lukasik@hamilton.ca
Adam Watson Project Manager	(905) 546-2424 x7806	Adam.Watson@hamilton.ca
Cathrin Winkelmann Senior Project Manager	(905) 546-2424 x3916	Cathrin.Winkelmann@hamilton.ca

Office of Climate Change Initiatives Priority Focus Areas

In April 2023, the Office of Climate Change Initiatives recommended and received Council approval to focus its efforts on several key priority areas. Work on these Priority Focus Areas has continued throughout 2023 and 2024.

- Climate Change Governance and Innovation
- Carbon Budgeting
- Green Buildings
- Urban Greening
- Community Climate Outreach



Panel from 'All Our Relations' art installation created by Cree/ Metis artist Angela DeMontigny & Team

Climate Justice Priority

As OCCI Staff embarks on its implementation of Hamilton's Climate Action Strategy it includes a strong commitment to ensuring that climate action is guided by climate justice principles. Climate justice recognizes the disproportionate impacts of climate change on frontline communities (Indigenous Peoples, low- income, marginalized, racialized communities). In the fall of 2023, Staff worked with students in the CityLab Semester in Residence program to lay the groundwork for the co-design of a Hamilton-specific Climate Justice Framework intended to be used as a tool to guide the implementation of Hamilton's Climate Action Strategy and other climate-related municipal work.

This work continued into 2024 with the completion of a project charter and workplan, along with continual learning and relationship building with local groups serving frontline communities. The start of consultation with Staff across divisions is underway, and exploration efforts have begun to better understand opportunities and challenges faced internally in implementing climate justice. Resources are being collected and put into a Sharepoint Resource Hub that will be made available for Staff across the Corporation.

OCCI PRIORITY: Climate Governance and Innovation

In order to develop and align processes across the City of Hamilton, establishing several critical governance pieces was identified as a priority for the OCCI in 2023. The Office was also charged with setting up a framework for administering the City's Climate Change Reserve, a sustainably funded reserve with funding earmarked to support testing new and innovative ways to mitigate and adapt to climate change.

The table below provides a brief update on the status of the priority items under climate governance and innovation.

Table 1.0 Hamilton's Climate Action Strategy Governance and Innovation

Governance/Innovation Piece	Status Update
City of Hamilton Climate Change Initiatives Steering Committee	**ACTIVELY MEETING** - This steering committee comprised of Directors from key City departments and divisions was established in September 2023 and has been meeting monthly since then.
City of Hamilton Climate Change Initiatives Extended Leadership Group	**DELAYED** - This group of managers and other relevant staff is expected to be formed in late 2024 following the direction of the Director-Level Steering Committee and guided by the on-going identification of key staff engaged directly in monitoring or implementing climate-related efforts
Climate Change Advisory Committee-	**ACTIVELY MEETING** – See Page 9 for a full update.
Climate Change Reserve	**OPERATIONAL –** Council approved a sustainable source of funding for the City's Climate Change Reserve as part of the 2023 municipal budget. Two rounds of funding for city-led initiatives – in 2023 and 2024 – have now occurred. See GIC Report PED24165 for an update on the progress of 2023-funded projects. A recommendation report with the list of city-led projects recommended to receive Reserve funding in 2024 is going to the General Issues Committee in Q4 2024

OCCI PRIORITY: Climate Governance and Innovation Cont'd...

Community Climate Change Advisory Committee

The Climate Change Advisory Committee was created to help provide advice to Council and City Staff on the prioritization, implementation and monitoring of Hamilton's Climate Action Strategy. In October 2023, OCCI Staff developed a selection criteria tool to assist the Interview Sub-Committee of the General Issues Committee with interviewing and selecting members of the public to serve on the Climate Change Advisory Committee.

Final appointments took place in February 2024, with the CCAC's first meeting on April 30th, 2024. Since then, the committee has had four meetings, with the next one scheduled for November 2024. Six working groups, which are open to the public, were recently established and include:

Table 2.0 Hamilton's Climate Change Advisory Committee's Working Groups

Working Groups	Brief Description
Climate Governance & Technical	Focus on how and when the City of Hamilton tracks its follow through on climate action implementation and overall climate accountability/governance. Review the technical and industrial components of the City's current and proposed climate change assessments, strategies, key performance indicators, and disclosures, and provide recommendations.
Community Engagement	The Community Engagement Working Group can advance community awareness and involvement in Hamilton's Climate Action Strategy.
Transportation	Informing, supporting and reviewing progress towards climate mitigation and adaptation efforts relating to City of Hamilton transportation efforts, decisions and outcomes. Identification of how to involve affected communities in decision-making and ensure that transportation policies and projects do not unintentionally or disproportionately harm vulnerable communities.
Buildings	Informing and tracking progress towards climate mitigation and adaptation efforts relating to City of Hamilton's community building decarbonization and resilience efforts, decisions and outcomes. Advancing an equitable lens on building decarbonization efforts to identify opportunities to advance carbon and energy poverty reductions.
Nature-Based Solutions (NBS)	Inform and support service mapping and assessments, actions and policies to ensure that the City of Hamilton is advancing leading NBS and incorporating ecological knowledge and Indigenous ways of knowing.
Climate Justice	Inform how the City of Hamilton is incorporating social justice/equity principles into climate plans, ensuring that frontline community members benefit from climate actions and that the burdens and benefits are fairly distributed. Identifying alignment opportunities related to United Nations Declaration on the Rights of Indigenous People (UNDRIP) and Hamilton's Urban Indigenous People

OCCI PRIORITY: Carbon Budget & Accounting Framework

The City of Hamilton is developing its first Carbon Budget and Accounting Framework (CBAF). The carbon budget, similar to a municipal budget, will include tools and calculators for the proper quantification of carbon emissions and corporate-wide processes to systematically track and report on carbon emissions, which will allow senior leadership and City Council to make informed decisions to better manage surplus or deficits.

Globally recognized organization C40, published a report *Deadline 2020: How cities will get the job done*. This report assessed the contribution of major high emitting, high GDP cities to the Paris Agreement's aspirations of limiting climate change to within 2 degrees and, ideally, 1.5 degrees Celsius average global temperature increase. The approach for a carbon budget is to allocate a fair portion of the global carbon budget, that aligns with the safe levels of warming below 1.5 and 2 degrees. It uses a global contraction-and-convergence approach, in which high emitters reduce emissions to a common per capita emission rate and low emitters increase to that rate by a set date (i.e. 2030).

City of Hamilton's Goals for Carbon Budget and Accounting Framework:

Goal 1 - To develop a corporate carbon budget and accounting framework that systematically integrates climate action policies, including a carbon credit policy, and develops the tools and resources necessary to implement robust GHG emission calculations into existing budget reporting processes and templates; and

Goal 2 – To develop a community carbon budget broken down by sectors, and subsectors where possible, with an annual reporting methodology and reporting plan created which provides education and awareness that allows the community to make informed actions to reduce GHG emission.

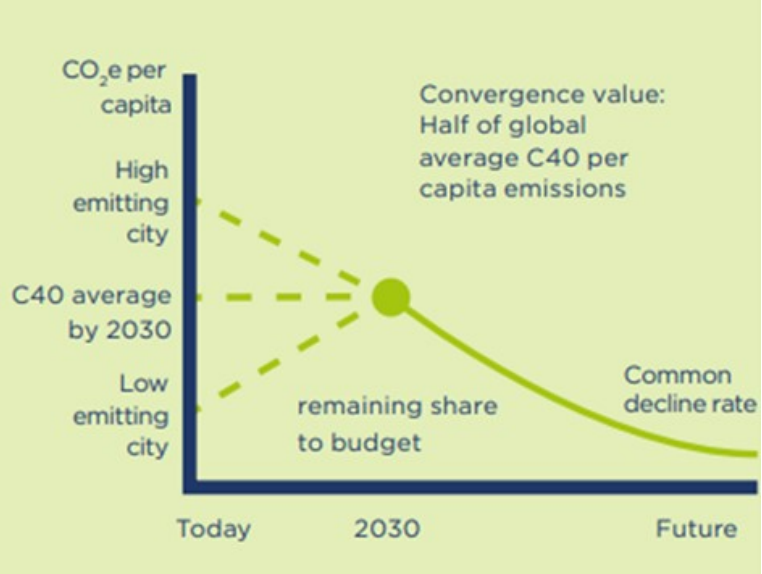


Figure 1.0 Emissions reduction trajectories using C40 Cities Convergence and Contraction Method

Status Update:

City Staff in the OCCI leading the development of the CBAF have retained a leading expert consultant in carbon budgeting and have formed an internal Technical Advisory Committee comprised of key divisions across the City from Corporate Finance, Public Works and Planning and Economic Development.

The community and corporate carbon budgets will be completed by the end of 2024. These carbon budgets, along with a detailed accounting framework and implementation plan are expected to go to Council in Q2 2025. If approved, a corporate-wide education and training plan will commence.

OCCI PRIORITY: Green Buildings

The OCCI is piloting a residential energy efficiency retrofit program called Better Homes Hamilton (BHH), which launched on December 1, 2023. The program provides property owners low barrier access to upfront capital for them to retrofit their homes, in order to reduce GHG emissions, improve energy efficiency, and live more comfortably. Eligible property types were single detached houses, semi-detached houses, and town homes. Over 150 homeowners applied for an opportunity to be selected for a loan of up to $20,000 at the introductory rate of zero-percent interest to be paid back to the City annually through property taxes. Fifty (50) successful applicants were accepted in 2024 and are currently participating in the pilot program.

Based on extensive research and engagement, tenant rights and important equity considerations have been embedded into the BHH program, which is being implemented with applied climate justice principles, including:

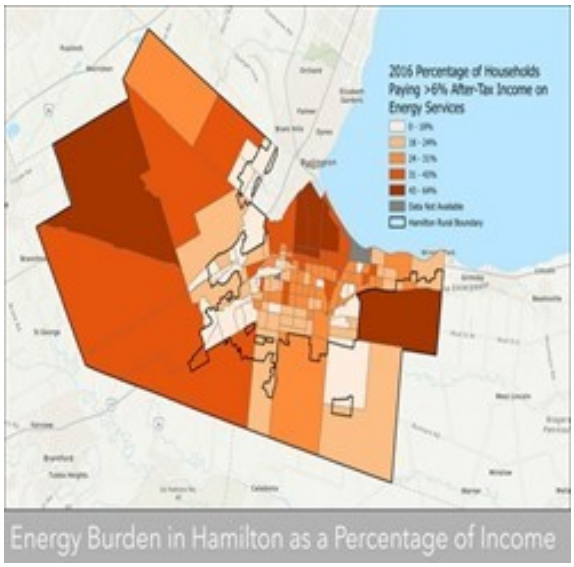


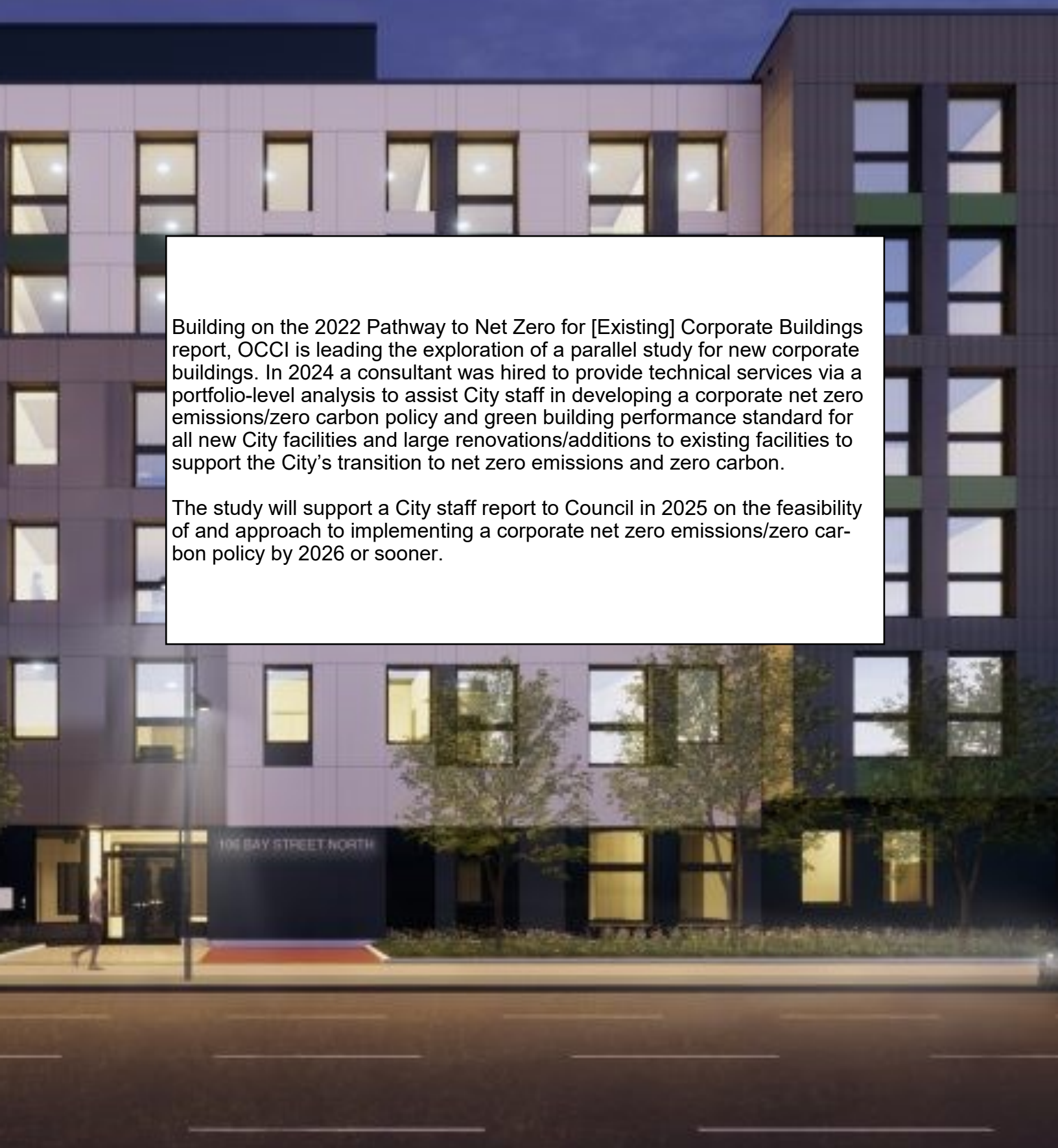
Figure 2.0 CUSP Energy Poverty Mapping Tool

- Prioritization of Hamilton homes located within neighbourhoods that have been identified as having high rates of energy poverty through the Canadian Urban Sustainability Practitioners (CUSP) Energy Poverty Mapping Tool;
- A robust methodology with equitable selection criteria was used to select the successful applications, resulting in the participation of homes with a diverse mix of building characteristics and a broad geographic distribution, with extra focus on those neighbourhoods identified as having high rates of energy poverty;
- Ensuring that any retrofits that lead to the displacement of tenants will be deemed ineligible; and
- Providing low-barrier access to upfront capital for those who may not otherwise qualify for traditional financing.

For full details on the BHH program, including a list of eligible retrofit measures, helpful resources and energy-efficiency rebate programs, see Better Homes Hamilton Program | City of Hamilton.

OCCI PRIORITY: Green Buildings Cont'd...

Corporate Net Zero Emissions and Zero Carbon Policy



Building on the 2022 Pathway to Net Zero for [Existing] Corporate Buildings report, OCCI is leading the exploration of a parallel study for new corporate buildings. In 2024 a consultant was hired to provide technical services via a portfolio-level analysis to assist City staff in developing a corporate net zero emissions/zero carbon policy and green building performance standard for all new City facilities and large renovations/additions to existing facilities to support the City's transition to net zero emissions and zero carbon.

The study will support a City staff report to Council in 2025 on the feasibility of and approach to implementing a corporate net zero emissions/zero carbon policy by 2026 or sooner.

OCCI PRIORITY: Urban Greening

Greening urban areas is an essential way to adapt to climate impacts and to also help mitigate those impacts. The OCCI has worked in several ways to help to advance urban greening efforts in our community. During 2023 and into 2024 the OCCI has administered funding to enable community partner Green Venture to implement depave projects along Barton Street. The OCCI also helped to facilitate a collaboration between the City's Forestry and Horticulture Division and community partner the Hamilton Naturalists' Club to enable the implementation of a more efficient and effective delivery approach for the 2024 Free Tree Giveaway.

In 2024, the OCCI also created a framework for tracking community-wide tree planting efforts, to determine whether our community succeeded in 2023 in meeting the Climate Action Strategy target of planting 50,000 trees per year. Preliminary results indicate that the target was likely achieved, but efforts will continue into 2025 to improve the tracking framework to get a more accurate count for 2024 and subsequent years.

Staff in the OCCI also support the expanding network of community gardens located on City of Hamilton property and beyond. This work is done as part of the larger collective efforts of the Hamilton Community Gardening Network. Enhancing urban food growing and raising awareness about climate change and local food security is an important element of urban greening.

Finally, OCCI staff are in the early stages of convening a working group of City staff to explore innovative approaches to urban green infrastructure, including elements like depave projects and the urban 'sponge park' concept as a method for greening urban areas and creating functional stormwater features at the same time.

Forestry Division's Free Tree Giveaway at the Gage Park Greenhouse - 2024

OCCI PRIORITY: Climate Communications and Outreach

Communicating with and engaging the broader community around climate action is key to OCCI's mandate. Meaningful engagement involves reciprocal interactions, respectful listening to understand, and transparent communication.

Establishing relationships with local community organizations and maintaining these relationships has been a strong focus throughout 2023 and 2024.

Climate Communications and Climate Engagement Strategies

Climate Communications and Climate Engagement Strategy project charters were developed for both external and internal purposes, with support from the City's Corporate Communications, Engagement Team, Marketing Team, and diverse local community groups. In 2023-2024, some actions found in the workplan were implemented.

Between October 2023 and September 2024, OCCI engaged audiences from diverse sectors, including youth, faith groups, frontline communities and Indigenous community groups. OCCI did so by conducting outreach, attending events, offering presentations, talks, tours, webinars, tabling and pop-ups. Moving forward, OCCI will be looking to expand engagement to include the business community.

As well, OCCI has been working to understand best practices in educating Staff across the corporation and raising awareness about climate change and will be designing a survey to this end.

By the Numbers:

- **1,100+ residents** reached via 17 community presentations;
- **60+ applications** received from residents to serve on City's Climate Change Advisory Committee;
- **150+ applications** from homeowners to participate in the Better Homes Hamilton Energy Retrofit

Communications

Raising awareness about Hamilton's Climate Action Strategy and action the broader community can take, occurred in the form of social media messaging, and content in newsletters and written articles. Internally, OCCI continues to assist Staff across various departments and divisions with incorporating climate context and wording in their messaging.

Content for the revamping of the Hamilton's Climate Action Strategy webpage was developed and is being implemented. Discussions for a climate dashboard are underway.

The OCCI will continue to refine its communications and engagement techniques and ongoing tracking methodology.

OCCI PRIORITY: Climate Communications and Outreach Cont'd...

Internal Climate Communication and Engagement

In 2024, an internal Traditional Ecological Knowledge (TEK) interest group of Staff from various departments emerged after City Staff attended two gatherings at Six Nations of the Grand River. OCCI Staff is working with the Indigenous Relations Office to explore how this interest can be supported, as well as better ways to align and collaborate on various shared interests.

OCCI continues to work with the Climate Team in Public Works, Corporate Facilities and Energy Management (CFEM), Asset Management, Public Health and Light Rail Transit (LRT) teams, learning lessons to apply in our internal engagement methodology.

OCCI Engagements, Working Groups, Projects and Committees.

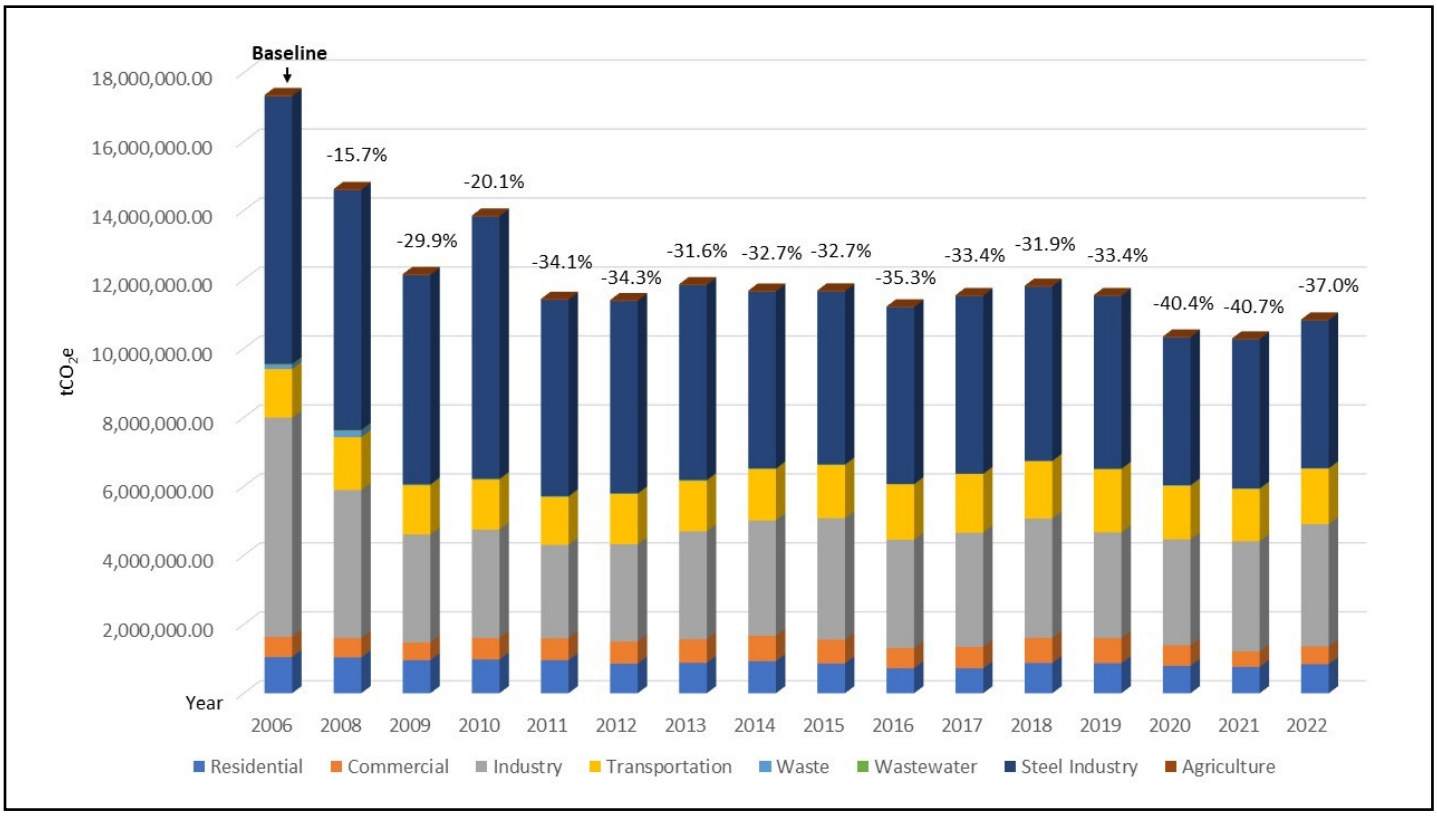
Climate change is impacting and influencing the work of almost every department and division across the City of Hamilton, as well as across the community. Beyond the OCCI's core work, we also have participated and collaborated with many internal and external partners to help ensure Hamilton's Climate Action Strategy is effectively implemented. This includes but is not limited to:

- Climate Change Initiatives Steering Committee
- Community Climate Change Advisory Committee
- LRT Steering Committee
- EV Strategy Working Group
- Urban Forest Strategy Working Group
- Extreme Heat Working Group
- Stormwater Utility Fee Steering Committee and Communications Working Group
- Natural Areas Inventory Steering Committee
- McMaster SCORE Project - Policy Roundtable
- Global Covenant of Mayors & ICLEI Local Governments for Sustainability Implementation Cohort
- Annual Carbon Disclosure Project (CDP) Reporting
- Watershed Action Plan Steering Committee
- Environmental Assessment Working Group
- Twenty Road and Red Hill Valley Parkway Extension Environmental Assessment Technical Advisory Committee
- Green Building Standards Internal Working Group
- Ex-Officio Members Bay Area Climate Change Council
- Bay Area Climate Change Council Implementation Teams
- Hamilton Community Enterprises Energy Harvesting Technical Steering Committee
- Clean Air Hamilton
- Clean Air Partnerships Green Development Standard Community of Practice
- Efficiency Canada's Mandatory Building Performance Network
- Buildings Ontario Transformation Hub
- Advisor on McMaster's MacChangers
- Annual Environment, Social, Governance (ESG) Reporting for Finance Standard and Poor's (S&P) Global Ratings
- Annual Reporting for Top 100 Greenest Employers
- Planning and Economic Development Engagement Committee
- Traditional Ecological Knowledge (TEK) Advisory Committee at McMaster University
- Bayfront Industrial Area Strategy Steering Committee
- McMaster University Energy Mapping Research Project

HAMILTON'S COMMUNITY-WIDE GREENHOUSE GAS INVENTORY 2006 – 2022

Since 2008 the City of Hamilton has been tracking and annually reporting community-wide Greenhouse Gas (GHG) emissions from sectors including: Buildings (broken down by Residential, Commercial and Industrial), Transportation, Industrial Process Emissions, Waste, Wastewater, and Agriculture. Using the year 2006 as a baseline and the most recent GHG inventory year of 2022, it is estimated Hamilton's community-wide emissions have been reduced by approximately 37.0%. This equates to 10,928,239 $tCO2_e$ in 2022 compared to 17,349,813 $tCO2_e$ in 2006.

Figure 3.0 Hamilton's Community-Wide Greenhouse Gas Emission 2006-2022



Major Sources of Community-Wide Greenhouse Gases

The City of Hamilton follows the Global Protocol for Community-Scale Greenhouse Gas Inventory and includes tracking emissions from the major sources across Hamilton.

Table 3.0 to the right shows the breakdown of GHG emissions by major sectors including both the tonnes of carbon dioxide equivalent (tCO_2e) and as a percent of the total.

Table 3.0 Hamilton's GHG Emissions Breakdown 2022

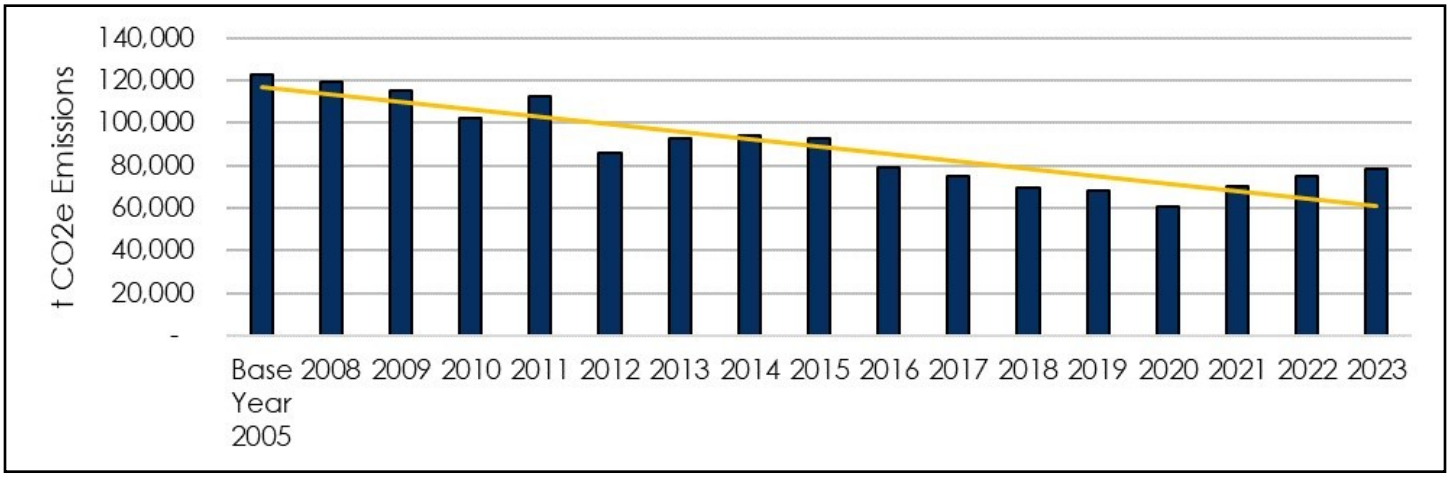
Sector	GHG (tCO_2e)	Percent (%) of Total *
Industry	7,910,056	72.4%
Transportation	1,604,167	14.8%
Buildings	1,369,784	12.6%
Wastewater	561	0.01%
Solid Waste	16,169	0.15%
Agriculture	27,502	0.25%
Total	10,928,239	*Totals may not equal 100% due to rounding

HAMILTON'S CORPORATE GREENHOUSE GAS INVENTORY 2005 – 2023

Through the Corporate Facilities and Energy Management Division, City Staff report on Corporate GHG emissions and have recently completed the inventory for both 2022 and 2023.

Overall Hamilton's corporate emissions have seen a total reduction of 39% in 2022 and 36% in 2023 based on the 2005 baseline.

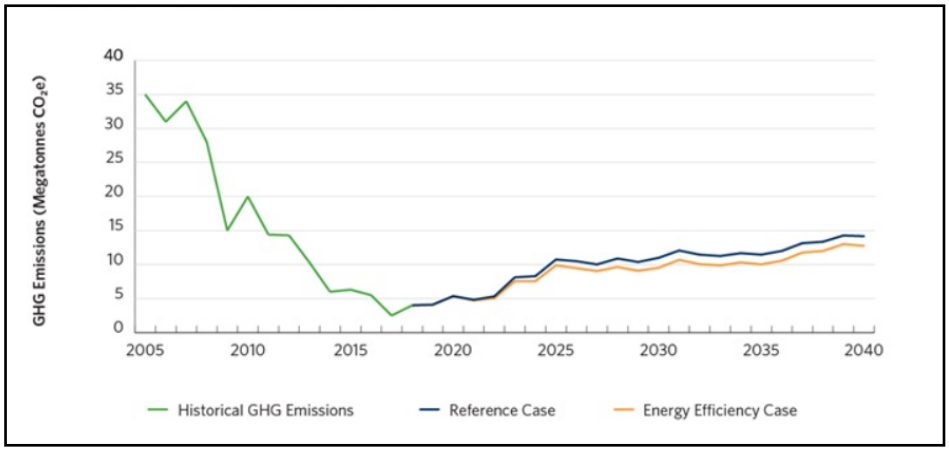
Figure 4.0 Hamilton's Corporate Greenhouse Gas Emissions 2005-2023



The 2023 inventoried results show a 4.9% increase in corporate greenhouse gas emissions and this comes following an increase of 6.5% in 2022 compared to 2021. As reported by the City's Office of Energy, these increases are due to the following factors:

- Corporate progress reducing emissions by improving energy efficiency in corporate buildings, street and traffic lighting has been cancelled out by a 40% increase in the provincial electricity emissions factor from 2021 to 2023. This is the direct result of increased reliance on natural gas generation in Ontario.
- Transit fleet emissions have increased as service levels increase with new routes and more frequent service on existing routes. The bus fleet has grown by 15% in the last two years.
- Hamilton Water's Woodward biosolids processing facility, which began operations in 2020, has increased processing levels each year, driving higher electricity and natural gas consumption each year.

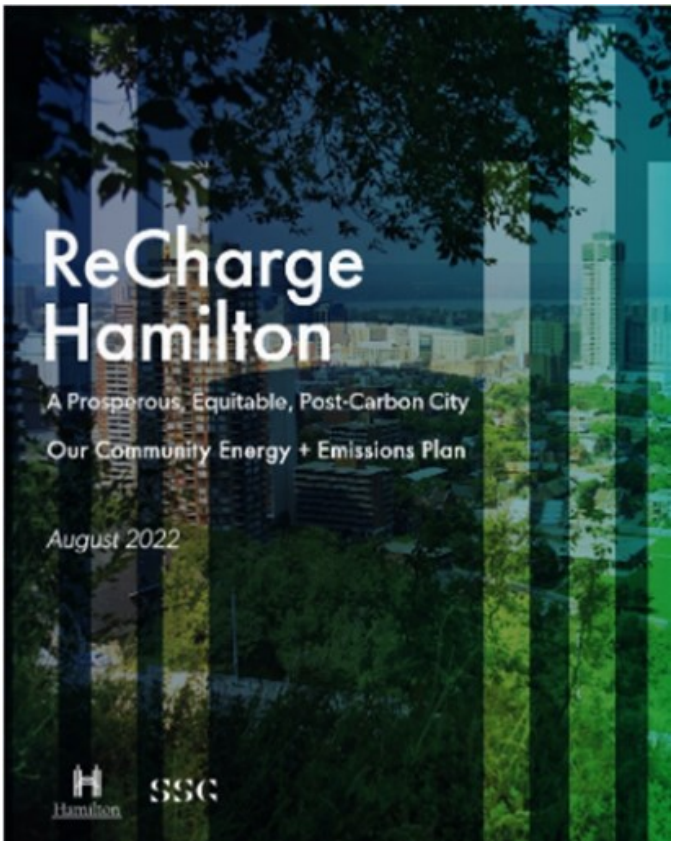
Figure 5.0 IESO Electricity Emissions Forecast



(Graph Adapted from: https://www.ieso.ca/Powering-Tomorrow/2020/The-IESOs-Annual-Planning-Outlook-in-Six-Graphs)

HAMILTON'S CLIMATE ACTION STRATEGY

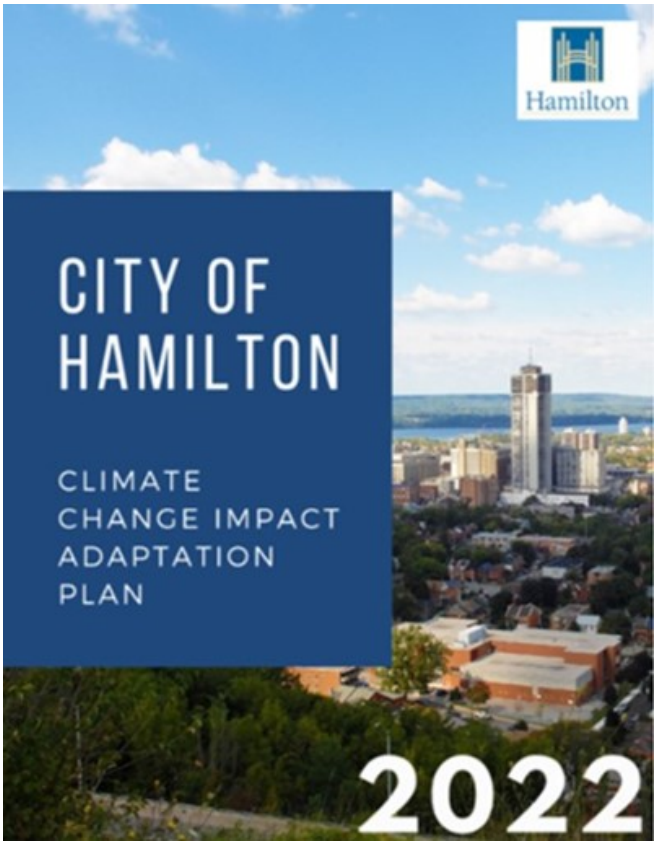
Hamilton's Climate Action Strategy (HCAS) is the City's most ambitious and detailed climate strategy to date. It was developed between 2018 and 2022 through extensive research, technical modelling, community-wide engagement, and consultation. The HCAS includes both a climate mitigation plan to achieve net zero GHG emissions by 2050, and a climate adaptation plan to help our entire community reduce, prepare, and recover from the unavoidable impacts of climate change.



"ReCharge Hamilton – Our Community Energy and Emissions Plan"

Vision:

"ReCharge Hamilton identifies a pathway to net zero GHG emissions by 2050 that increases the resilience of the energy system and improves economic prosperity for all. Drawing on a history of work, policies, and initiatives in this area, ReCharge Hamilton builds on Hamilton's historic and current strengths as an industrial leader in the midst of a rich natural environment, and as a caring community."



"Hamilton's Climate Change Impact Adaptation"

Vision:

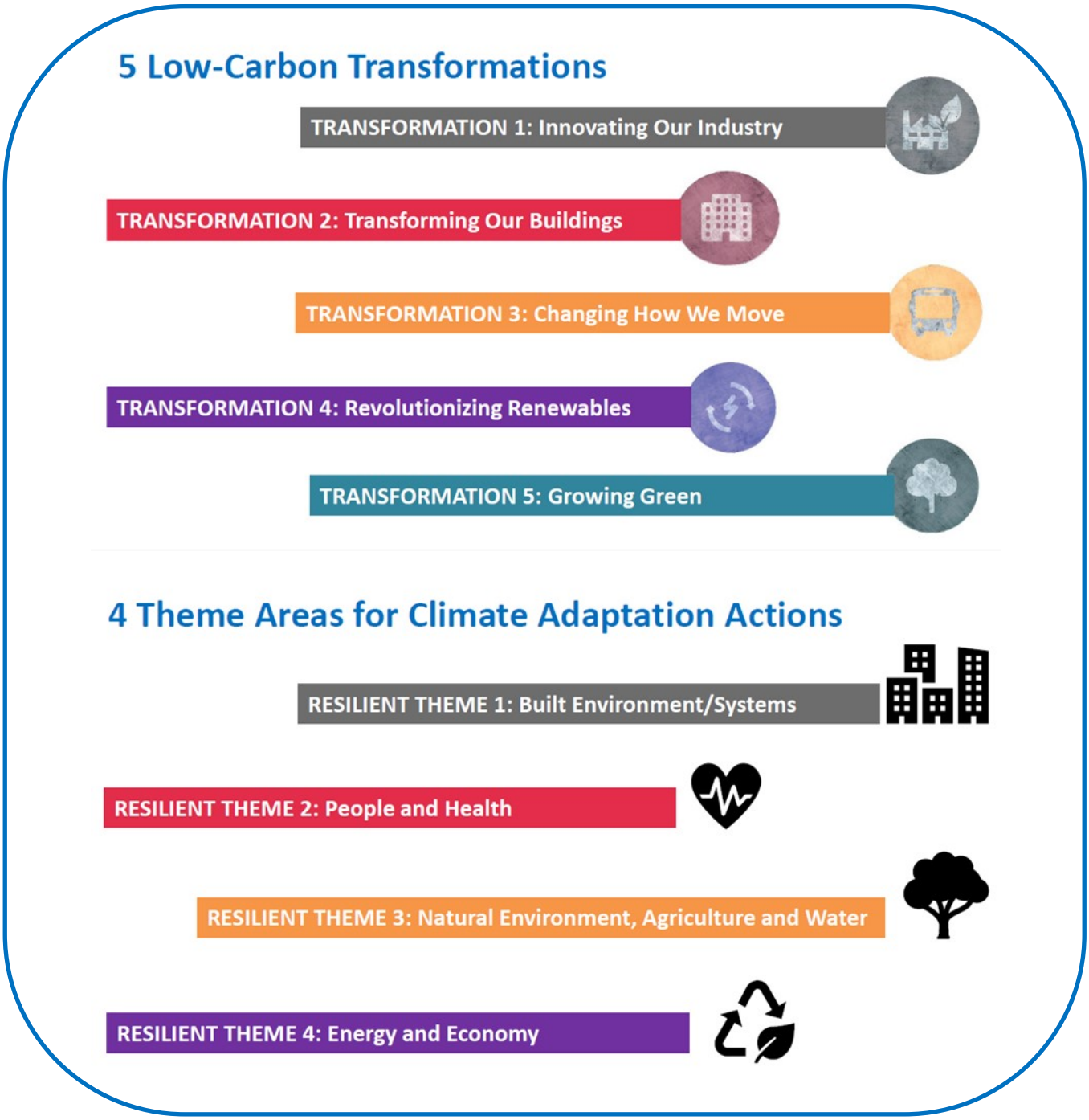
"The City of Hamilton will be a national leader on climate adaptation: a healthy, equitable, vibrant, and sustainable community that responds to the needs of residents, businesses and institutions, and is resilient in the face of a changing climate"

Low-Carbon Transformations and Resilient Themes

The remaining sections of this report are broken out into the Low-Carbon Transformations and Resilient Themes as outlined and approved within 'ReCharge Hamilton' and 'Hamilton's Climate Change Impact Adaptation Plan'.

The following sections include major and impactful actions within each Low-Carbon Transformation and Resilient Theme. For a complete list and status update for all of HCAS's specific actions see Appendix "B" to Report PED24166.

The Five (5) Low-Carbon Transformations and Four (4) Resilient Theme Areas are broken out as follows:



Low-Carbon Transformation #1: Innovating Our Industry

Monitoring Trends of Large Industrial Emitters of Greenhouse Gases

Hamilton's greenhouse gas emissions profile is dominated by industrial emitters. That is why our Climate Action Strategy includes a focus on innovating our industry to mitigate greenhouse gas emissions from this sector. Part of this work involves tracking industrial greenhouse gas emission trends. In Canada, industries emitting greater than 10,000 tCO2e annually must report these emissions to the federal Greenhouse Gas Reporting Program (GHGRP). In Hamilton, 19 industrial facilities are included on this list in 2022, the most recent year for which verified reporting data is publicly available through the GHGRP. The levels of emissions from these facilities range from 10,078 tCO2e to 3,960,611 tCO2e. Three of the facilities on the list reduced their emissions to below the 10,000 tCO2e threshold in 2022.

Table 4.0 Industrial GHGRP Reporting Trends in Hamilton 2017—2022

Facility Name	2022 GHG Emissions (*tCO2e)	GHG Emissions Trend 2017 - 2022
ArcelorMittal Dofasco – Main Plant	3,960,611	**19.4% DECREASE**
Carmeuse Lime	434,050	**8.0% DECREASE**
Stelco Inc (now Cleveland Cliffs)	279,095	**9.6% INCREASE**
Birla Carbon	202,082	**13.9% DECREASE**
Bunge Canada	49,866	**0.5% INCREASE**
RAIN Carbon	30,080	**4.8% INCREASE**
**Bartek Ingredients – Plant #2	30,037	**18.2% INCREASE**
Baycoat	29,303	**14.0% INCREASE**
Darling Ingredients (Rothsay)	23,416	**4.0% INCREASE**
Max Aicher North America	19,242	**47.1% INCREASE**
Maple Leaf Foods – Heritage Plant	16,243	**10.3% DECREASE**
ArcelorMittal Long Products	15,380	**42.4% DECREASE**
***Bimbo/ Canada Bread	12,110	**2.3% DECREASE**
NATT Tools Group Inc	11,103	**7.7% INCREASE**
Air Liquide Canada	10,548	**10.1% DECREASE**
Modelez Foods	10,078	**0.9% INCREASE**
Bartek Ingredients – Plant #1	8,694	**27% DECREASE**
BIOX Canada Limited	3,049	**76% DECREASE**
GFL Stoney Creek Landfill	1,394	**97% DECREASE**

*For reference, 1 tCO2e represents the greenhouse gases emitted from driving an average internal combustion engine vehicle 2,500 miles or 4,023 kms.
**Bartek Ingredients Plant #2 started reporting to GHGRP in 2019 – increase is since 2019.

***Bimbo/Canada Bread plant opened in 2011 and started reporting to GHGRP in 2020, decrease reported is since 2020.

**** Total emissions stated here are different than total industrial emissions stated on page 16 due to methodology.

Low-Carbon Transformation #1: Innovating Our Industry

The City's Office of Climate Change Initiatives will continue to track annual GHG emission levels from facilities required to report to the federal Greenhouse Gas Reporting Program. In addition, the Office is requesting information from large emitters regarding current or emerging efforts to develop plans for achieving net zero on or before 2050 at their local industrial operations. This information will be used to inform the collaborative efforts emerging through the Hamilton Regional Decarbonization Hub to support and, ideally, accelerate industrial decarbonization in our community.

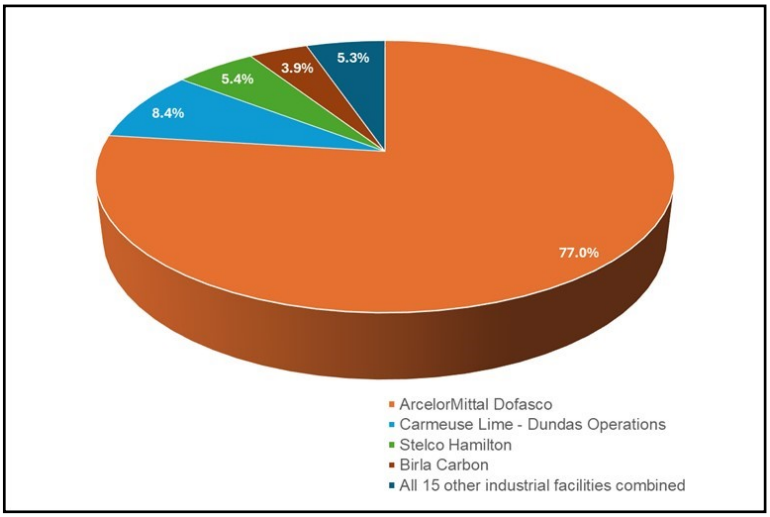


Figure 6.0 Facility Contributions GHGRP Reporting, 2022

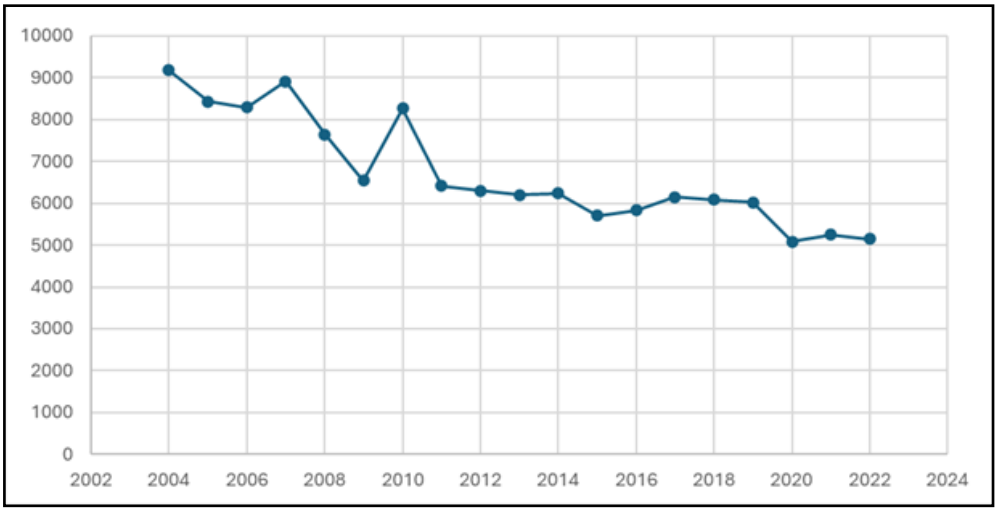


Figure 7.0 Hamilton Facilities Reporting to GHGRP 2004-2022 (kt CO_2e)

Additional Large Emitters in Hamilton

Although not classified as industrial, there are four (4) additional large emitters in Hamilton that report to the federal Greenhouse Gas Reporting Program.

Table 5.0 Non-Industrial Large Emitters Hamilton, 2022

Facility	2022 Emissions (tCO_2e)	GHG Emissions Trend 2017 - 2022
McMaster University	41,975	79.5% INCREASE
Woodward Ave Sewage Treatment Plant	25,687	34.8% INCREASE
Glanbrook Municipal Landfill Site	16,169	44.7% DECREASE
Juravinski Hospital Co-Generation Plant	11,293	42.5% DECREASE

Low-Carbon Transformation #2: Transforming Our Buildings

City-wide Green Building Standards are being created to guide new private development in a manner that considers principles of environmental, social and economic sustainability. Features proposed in Hamilton's Green Building Standards include enhanced energy efficiency, on-site greening, electric vehicle charging infrastructure, bike parking, and bird friendly building design. The draft Green Building Standard will be brought forward in Q4 2024, followed by the development of a detailed implementation strategy, including incentives, in 2025.

HAMILTON COMMUNITY ENTERPRISES

Focus on Smart Buildings — In 2024, HCE and the City of Hamilton (Public Works) initiated a collaborative pilot project intended to install state-of-the-art automated control systems for heating, cooling and electricity in two signature buildings owned by the municipality. The goal is to compare before and after performance data to determine the viability of incorporating smart building technologies into additional city facilities community wide.

Experience shows that optimization through digitization can improve a building's energy efficiency by between 10-20 percent and reduce the cost of building envelope upgrades. Equally important, affordable, smart building automation systems designed to communicate across multiple networks have become increasingly available to communities on the path to net zero. These systems enable buildings to act as distributed energy resources and virtual power plants in a dynamic, two-way power grid.

Results of the pilot are expected in late 2025 and will be shared with the OCCI, Hamilton City Council, and the community at large.

Contact Ryan Rogers, Vice President, Corporate Development, Hamilton Community Enterprises at ryan.rogers@hce.net to learn more.

Source: Electrical Contractor Magazine

Low-Carbon Transformation #2: Transforming Our Buildings

Community Spotlight—LiUNA and Fengate Asset Management

An exciting green development project is in the works at 500 Upper Wellington Street. The Laborers' International Union of North America (LiUNA) and Fengate Asset Management (Fengate) are the project leads of this six-story rental building, in partnership with The Hi-Rise Group (development manager) and Ingenuity (construction manager).

“The building will deliver long-term sustainable value for its occupants,” said Victoria Mancinelli, LiUNA’s Director of Public Relations, Marketing and Strategic Partnerships, pointing to the low carbon technology that is incorporated throughout the building’s 261 residential suites and over 6,000 square feet of commercial space. Technology includes:

⇒ In-suite energy recovery ventilators (ERVs),

⇒ Heat recovery systems (HRS); and

⇒ A geothermal system comprising 94 deep geothermal wells that each reach about 600 feet.

“In combination, a **total energy saving of 42.4% compared to the National Energy Code of Canada for Buildings 2017 standards** is anticipated,” Mancinelli said.

Low-Carbon Transformation #3: Changing How We Move

Active and Sustainable Mobility

The City of Hamilton's Transportation Planning and Parking Division, Planning and Economic Development is supporting Hamilton's shift to more sustainable travel options.

SMART COMMUTE HAMILTON is a Greater Toronto Hamilton Area (GTHA) program that helps individuals and organizations travel efficiently and sustainably. Hamilton's shared Micro-mobility Program comprises two complementary programs:

Hamilton Bike Share Initiative (HBSI)	Shared Commercial E-Scooter Pilot Program
	
2023 STATS: • 900 bikes available • 245,364 trips were taken • 567,479 km of total travel	**2023 STATS:** • 450 e-scooters available • 119,283 trips were taken • 269,614 km of total travel

City Council approved additional funding from the Climate Change Reserve to pilot 100 e-bikes as part of Hamilton Bike Share. E-bikes are currently being procured and delivery is expected in fall 2024

Equity-Based Programming

Throughout the 2023 e-scooter season, Bird Canada, the private operator of the e-scooter system offered subsidized rates for users starting and ending their trips in identified priority zones in geographic areas of the city where it is recognized that there is a need to consider cost and accessibility to shared micromobility systems. There was a total of 2,462 trips that started or ended in these priority neighbourhoods. Bird increased promotion of the discount in October 2023 and saw a large increase in rides as a result. Bird's trip data also showed a steady increase in monthly trips that started/stopped in priority neighbourhood zones.

HBSI's Everyone Rides Initiative continues to grow with an increase in funding from various sources. One of the fees included in the Bird contract is the 'E-Scooter Equity Fee' which goes directly into funding ride passes for members of the Everyone Rides Initiative and has enabled Hamilton Bike Share to increase the number of subsidized passes they can offer community members from 100 to 300 passes.

Low-Carbon Transformation #3: Changing How We Move

Electric Vehicles on the Rise in Hamilton

The City of Hamilton has committed to reducing corporate GHG emissions and achieving net zero emissions by 2050. A big part of the City's corporate emissions are from its fleet of vehicles.

The City is tackling this, in part, through its Green Fleet Strategy with a target to transition 89 internal combustion vehicles to battery all-electric by 2024.

Fleet has surpassed this target with the latest order of **51 SUVs**, and **25 pickup trucks** anticipated to be in service by the end of Q4 2024.

Currently, the Building Division is in the process of acquiring 25 electric vehicles (EVs) of this total, with the goal of being fully electric by 2025 with 19 more. SUVs were also acquired this year by:

- Licensing & By-Law Services (10),
- Environmental Services (5),
- Water (4),
- Transportation (3),
- Transportation Planning and Parking (2),
- Engineering (1); and
- Waste Management (1).

Beyond EV replacement, Fleet is also investing in biodiesel options—with 10 CNG garbage trucks by the end of 2024—and other alternative fuel solutions such as EcoDiesel and Hydrogen. As well, 47 'Level 2' charging stations (slow-fill, over-night charging) and 2 'Level 3' charging stations (direct charge, fast-fill, that top up batteries faster) have been installed at 14 City facilities. Ongoing challenges exist however with necessary infrastructure for charging and parking spaces—especially within the downtown core. These challenges will be further investigated as part of the City's emerging EV Strategy.

Year	Counts
2016	132
2017	287
2018	633
2019	929
2020	1,250
2021	N/A
2022	2,906

Table 6.0 Ministry of Transportation EV Registrations in Hamilton 2016 - 2022

Community-wide Electric Vehicle Registrations in Hamilton

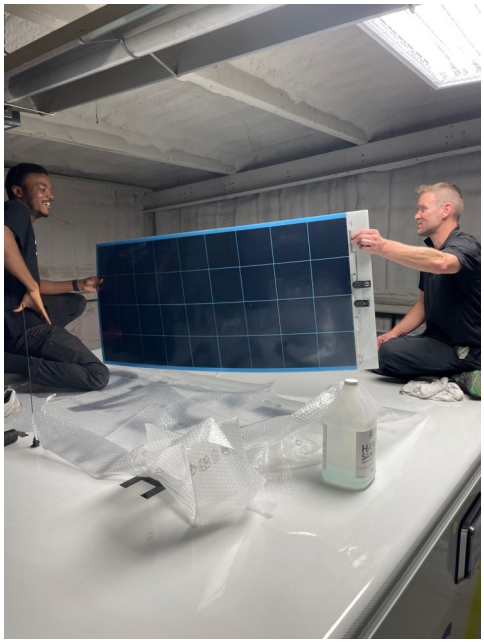
Publicly accessible data is now available on Electric Vehicle uptake rates across Ontario. Information is provided in Table 6.0 and links below:

- Clean Air Partnership's EV Proliferation by Municipality; and
- Ontario's Electric Vehicles by Forwards Sortation Area

Low-Carbon Transformation #4: Revolutionizing Renewables

Solar-Powered Ambulances

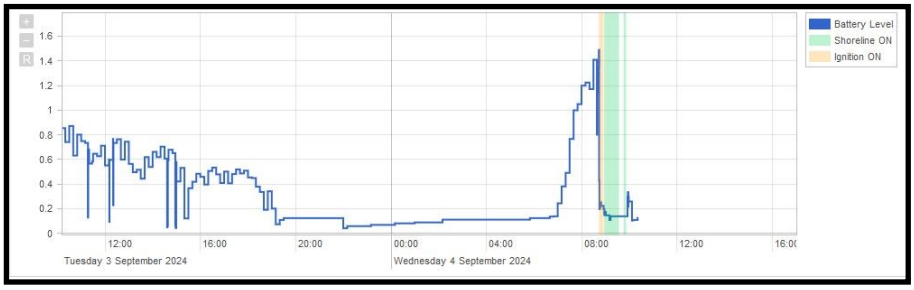
Hamilton Paramedic Service (HPS) is reaching for the sun! Six months into a pilot project in partnership with the company ACETECH, HPS has three (3) of its sixty -two (62) ambulance fleet outfitted with solar panels. Since ambulances draw continual power to keep pharmaceuticals and medical diagnostic equipment within a temperature-controlled environment, as well as for patient comfort, these vehicles must be plugged in or running to maintain battery capacity. When inside a designated station, shoreline power plugs are provided for this purpose, but when outdoors, shoreline power is not available.



“Installing solar panels on vehicles enables the auxiliary batteries to continue to run on solar power rather than on fuel—saving fuel, improving efficiency and reducing greenhouse gas emissions from constantly idling vehicles,” said Deputy Chief, Cliff Eggleton, who is leading this innovative initiative.

Other benefits from solar-powered ambulances include extended battery life and vehicle downtime, lower maintenance costs, and decreased noise and air pollution in hospital areas from non-idling ambulances

Figure 8.0 Paramedic Solar Power (Amp) Detailed Report



With over 307 daily responses to calls from the community and 83,965 transported to hospital in 2023 from across the City of Hamilton, utilizing technological advancement such as solar-powered ambulances is part of HPS’s first 10-year Master Plan. Given the reality of our changing climate, the Master Plan is responding to the diverse and dynamic needs of people in Hamilton with the goal of establishing the groundwork towards transformative paramedic service.

Low-Carbon Transformation #4: Revolutionizing Renewables

Low-Carbon Building Heating Solutions

Hamilton Community Enterprises (**HCE**) — an award-winning, purpose-driven technology company owned by the City of Hamilton — is helping local residents, businesses and institutions benefit from low-carbon, high-efficiency building heating.

Through its energy division, HCE operates extensive thermal networks in downtown Hamilton and at McMaster Innovation Park. HCE's goal is to partner with the public, private and nonprofit sectors to modernize and expand these systems using clean energy sources, including waste heat harvested from heavy industry, data centres, and other sources.

To this end, HCE is leading the Energy Harvesting Study to determine the technical feasibility and commercial viability of a proposed thermal corridor that would heat buildings in neighbourhoods across lower city Hamilton using residual energy from manufacturers operating in Hamilton's Bayfront Industrial Area. This pathway to decarbonization is well established in the northern regions of Europe and is gaining strength throughout North America.

(Photo Courtesy of HCE)

The results of the two year study, due to be released in early 2025, confirm a positive business case for a thermal infrastructure project that has the potential to deliver low-carbon heating to more than 10 million square feet of building space and lower carbon emissions by roughly 80% compared to a business-as-usual scenario.

The next step is a Commercialization Phase set to begin in Q1 2025 that will focus on detailed engineering and cost estimates, customer acquisition, financing, ownership and governance, and other foundational elements. In addition to lowering local GHG emissions, this bold initiative, coined Canada's Thermal Corridor, would unlock other community benefits, including clean tech jobs, retention of local industry, relief from rising energy prices, and a pathway to effectively and affordably decarbonize existing buildings.

The OCCI looks forward to helping ensure this project continues to gain momentum as a key decarbonization strategy for our community.

2024 OCCI Annual Report—Gaps, Barriers, Challenges

With each Annual Update on the implementation of Hamilton's Climate Action Strategy (HCAS), attention must also be paid to gaps, barriers and challenges to effective progress with climate mitigation and adaptation efforts. The HCAS is comprehensive, which means that there is much work to be done by the corporation and the broader community to achieve net zero by 2050 or sooner.

Reflecting on progress made during 2023 has highlighted a number of gaps, barriers and challenges. A major barrier to more immediate action are the funding gaps that exist for the municipality as more work is done to map out pathways to net zero through corporate action. One example of this is the substantial list of renewable energy projects that are viable and ready to move forward as soon as there is a source of funding to enable this work to happen. More is being done to identify and pursue methods to fund this work, including focused efforts to bring in more funding from higher levels of government and other external funding sources, and continuing to grow the municipality's Corporate Energy Reserve (see CEEP Enabling Action (ii)).

Table 7.0 Ontario's Electricity Emission Factors 2017-2023[1]

Year	*Annual Average Emissions Factor
2023	67
2022	51
2021	44
2020	36
2019	29
2018	29
2017	18

Another challenging problem is the increasing carbon intensity of our provincial electricity grid. Each year the grid is getting 'dirtier' with the growing use of methane gas to generate electricity. This is cancelling out progress made by Ontario communities to reduce GHG emissions. For 2023, the City of Hamilton's corporate emissions increased largely because of the increase in the annual average emissions factor from 51 in 2022 to 67 in 2023.

Since 2017, the province has seen a steady increase in the 'annual average emissions factor'. Decarbonization of Ontario's grid is key to realizing net zero but the trends, as shown by emission factors, are taking the province in the wrong direction by increasing emissions and air pollution.

Finally, status updates and data shared regarding progress with implementation of mitigation and adaptation actions set out in Hamilton's Climate Action Strategy, also show that there continue to be gaps for some actions where no efforts have been initiated to date or actions have not yet moved from planning to implementation. This includes action that needs to be taken to address food waste as a climate challenge, action that needs to be taken to engage and support the agricultural community around building climate resilience, and initiating actions identified in the Strategy to encourage and support business and industry to decarbonize.

[1]Source – The Atmospheric Fund – '*Ontario Electricity Emissions Factors & Guidelines – June 2024 Edition*' https://taf.ca/custom/uploads/2024/06/TAF-Ontario-Emissions-Factors-2024.pdf

Low-Carbon Transformation #5: Growing Green

Getting to Our 50,000 Tree Planting Target

Throughout 2023 the City's Forestry and Horticulture Section in Public Works has ramped up their efforts to get trees into the ground through a variety of activities such as:

- Increasing annual planting goal from 12,000 to 20,000 trees per year starting in 2024;
- Surpassing 2023 Free Tree Giveaway goal of 3,000 to 3,927 trees; and
- Community Tree Planting Events increasing plantings to 3,536 trees in 2023.

As mentioned in the OCCI Priority Area 'Urban Greening,' the 50,000 tree planting target is a community-wide target and Staff are currently investigating processes and partnerships to scale up community-wide tree planting and improve tracking going into 2024. Tree planting is a climate action many residents of Hamilton can get involved with.

Data collection was completed to measure annual tree planting activity undertaken by the City of Hamilton Forestry Section as well as all other external organizations that regularly engage in tree planting (i.e. conservation authorities, Royal Botanical Gardens, environmental not-for-profits). This measurement will provide a baseline to compare progress on city-wide tree planting efforts in subsequent years.

CLIMATE ACTION HIGHLIGHT – Training the Workforce for Climate Action

The Canadian Colleges for a Resilient Recovery (C2R2) is a coalition of 15 colleges, *cégeps*, and polytechnics from across Canada with the proven ability to make an immediate impact and lead in training deployment and applied research that supports energy security and sustainability

Mohawk College is serving as the Coordinating Secretariat for the coalition, with postsecondary institutional partners in almost every province and territory in Canada. The curriculum inventory, reporting processes, financial structure and recent experience allows the opportunity for immediate impact and reduced administrative work.

Launched in 2023 **QUICKTRAIN Canada** is a skills training program that allows Canadian workers to upskill in weeks, not years. In its first year the program saw upskilling of over 10,000 learners across high-demand sectors.

As a delivering partner Mohawk College offered courses and provided training related to trades and building retrofits, electric vehicles, advanced renewable energy, carbon capture, business preparation for the low-carbon economy, as well as others.

Table 8.0 Mohawk College's Quick Train Enrolment 2023—2024

Postsecondary Institution	Course Offerings	Enrolment 2023	Early Enrolment 2024
Mohawk College	Building Information Modelling	81	52
Mohawk College	Understanding Climate Change & Sustainability	0	309
Mohawk College	Introduction to Green Building Technologies	32	180
Mohawk College	Electric and Hybrid Service Training	44	45
Mohawk College	Entry-level technical applications in hydrogen for process occupations	51	6
Mohawk College	Gray2Green Upcycling and Waste Management	58	14
Mohawk College	Heat Pump Training for Technicians	10	20
Mohawk College	Hydrogen awareness and understanding for process related occupations	0	90
Mohawk College	Operations Upskilling	180	0
Mohawk College	Skilled Trades Upskilling Microcredential	180	30
	Total Quick Train enrollment	**636**	**746**

Resilient Theme #1: Built Environment

Stormwater Utility Fee and Incentive Program

The City of Hamilton is currently undertaking a Stormwater Funding Review to implement a more equitable stormwater funding model. The City currently spends approximately $56 million on its stormwater program. Currently most stormwater funding comes from the City's water and wastewater utility revenues.

Throughout 2023 and 2024 City Staff presented and Council approved both:

FCS22043(b) Stormwater Funding Review Report – which proposed the Stormwater Rate Structure based on the Single-Family Unit Stormwater fee structure which best aligns with the previously approved guiding principles of fairness and equity, climate resilient and environmentally sustainable, affordable and financially sustainable, justifiable, and simple to understand and manage; and

FCS22043(c) Stormwater Fee Financial Incentive Program – with input from community engagement between October 31, 2023 to January 8, 2024 this unique 'made in Hamilton' incentive program includes a multi-stream credit program for industrial, commercial, institutional, agricultural, and multi-residential properties with greater than six units:

Stormwater Management Infrastructure Credit

Property owners can get up to 50% credit if they reduce stormwater runoff quantity or improve its quality.

Hamilton Harbour Discharge Credit

Property using private pipes to send stormwater directly to Lake Ontario can get up to a 90% credit.

Green Space Credit

Farms, parks, and similar properties without a direct connection to the City's stormwater system can qualify if their stormwater runoff goes to large green spaces. The amount of credit will be based on the ratio of hard surfaces to green space.

Single-family residential and multi-residential properties (six or fewer units), will have access to a program that provides a variety of discounts, subsidies and advisory services for implementing stormwater management measures.

Link to the City's website: https://www.hamilton.ca/home-neighbourhood/house-home/home-water-services/water-rates/stormwater-funding-review

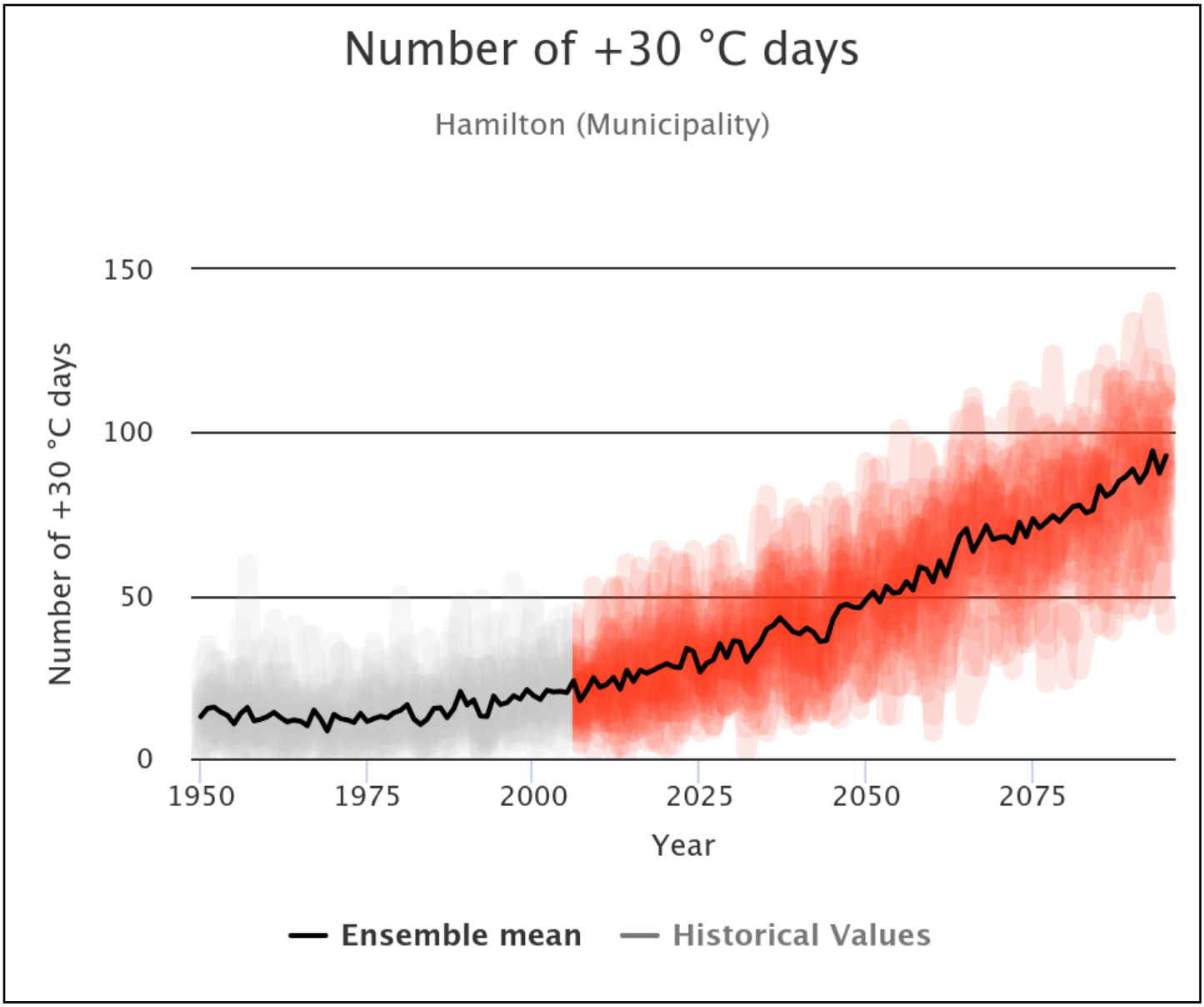
Resilient Theme #2: People and Health

Extreme Heat and Climate Action

Hotter weather is in Hamilton's future. Climate experts warn that we can expect more frequent, longer lasting and more intense heat events in Hamilton. While extreme heat events can be harmful to all of us, some community members are more at-risk for heat-related illness.

The Intact Centre at the University of Waterloo identified Hamilton as one of the top 10 "hottest" metropolitan areas in Canada for the future period of 2051-2080. Figure 9.0 below is from the Prairie Climate Centre which produced the Climate Atlas with projected number of days above 30 degrees Celsius in Hamilton for the period from now to 2080.

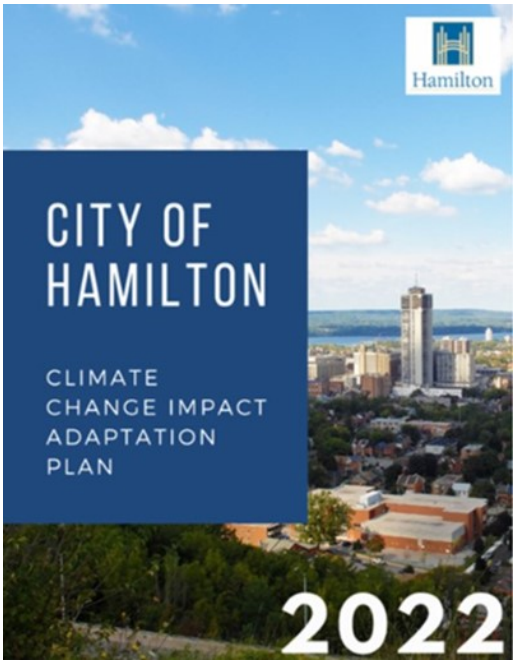
Figure 9.0 Climate Atlas Map: Projected Number of Days in Hamilton, ON



(Image Adapted from: https://climateatlas.ca/map/canada/plus30_2030_85#lat=42.46&lng=-81.07&z=8&city=451)

Resilient Theme #2: People and Health

Community Heat Response Strategy—Extreme Heat and Climate Action



Actions in Hamilton's Climate Change Impact Adaptation Plan have resulted in a Community Heat Response Strategy that is enhancing City programming, including supporting community efforts to protect vulnerable from the risks of extreme heat.

An Extreme Heat Working Group, coordinated by Shelley Rogers, Project Manager, Public Health Services developed the Strategy which was approved by Public Health Committee and Council. Rogers attributes the Strategy's success to this group, and its expanding diversity—with partners ranging from local organizations serving frontline communities, to City staff and academics.

Over the summer, 300 cool kits were provided to the Housing Services Team to distribute to unhoused people, with another 500 being distributed to people who are housed through members of the Extreme Heat Working Group.

"The cooling neckties and thermometers were very popular, as were sunscreen and sunglasses and hats," Rogers reported.

From the Strategy, other actions emerged this summer including the distribution of 2,000 free bus tickets and subsidy dollars for air conditioners for at-risk residents with immediate medical issues. Both these efforts were funded through the Climate Change Reserve. An education campaign went out to landlords, through a mail out and a page on the city's website, and the exploration of the potential for an Adequate Temperature Bylaw was started by Municipal Law Enforcement. As well, more access to water and cool indoor spaces was expanded, offering further options for relief from the heat.

"It's about continuous quality improvement, as we move forward and new information becomes available," said Dr. Sally Radisic, Health Hazard Specialist with Healthy and Safe Communities. "This year is really just the start of many more years of being able to serve our community and meet them where their needs are."

Resilient Theme #3: Natural Environment, Agriculture and Water

Action 7.1 calls for continued efforts to enhance the management and restoration of existing natural areas and seek opportunities to dedicate land and natural areas for conservation.

The City's Environmental Services Division has three multi-year projects underway to naturalize areas in Joe Sams, Courtcliffe and Flamborough Centre Parks, with additional naturalization efforts planned throughout 2024. These projects are removing invasive plants and restoring wetlands, pit and mound swamps, and bringing more native trees and plants to these spaces. In 2023 over 2.53 hectares of habitat was created or restored across these three sites, including planting over 6,000 native trees, shrubs and perennials, and the enhancement of over 500 metres of in-stream and riparian habitat.

A Mini Forest at Johnson Tew Park

In 2023, the Forestry section, with the help of neighbourhood volunteers, planted a mini forest at Johnson Tew Park in Ward 13, bringing the City's total number of these types of urban forests to six (the first of its kind was planted in 2021). Also called Miyawaki forests after the Japanese botanist Akira Miyawaki who is credited for the concept, these densely planted forests of very small trees are no bigger than the size of a tennis court.

"The idea is to encourage competition, forcing the trees to grow quicker because of the spacing," said Robyn Pollard, Manager with Forestry and Horticulture, Public Works. "The method works well in damaged urban areas that require soil remediation but would not support a traditional forest."

This innovative way of increasing tree canopy is producing remarkable results. Pollard points to the Windemere Park mini forest that was planted in 2021. "What we've seen at Windermere is within a three-year period, small saplings planted at a height of 8 to 12 inches, are in some cases 7 to 10 feet."

While plantings like this are city-led, they are completed by the community. Kristen Bill, Project Manager of Forest Health in Forestry works with the community to pick locations, plan species, and set up planting events. In many cases, groups like Green Venture that have environmental stewardship initiatives help with gathering volunteers to plant and do the aftercare and monitoring.

The Forestry team is preparing to add one new mini forest this fall at Albion Falls. The project is a collaboration between Niwasa Kendaaswin Teg, Xperience Annex, Hamilton Police Services, Forestry, Healthy and Safe Communities, and the Indigenous Relation Team.

(Source: Photo Adapted from: https://greenventure.ca/canopy-for-community/mini-forest-in-hamilton-project/)

Resilient Theme #4: Energy and Economy

Action 10.1 calls for guidance to be provided to local businesses on how to maintain business continuity (e.g. supply chain) during extreme weather.

The City of Hamilton's Economic Development Division has a long history of offering programs designed to help local businesses and industries get established and continue to thrive. These include initiatives focused on supporting sustainability measures, such as:

- The award-winning **ERASE (Environmental Remediation and Site Enhancement)** program that provides support to proponents for brownfield site remediation and redevelopment; and
- **'LEEDing the Way',** a program that offers grants to proponents interested in implementing measures to get their buildings certified through the international LEED (Leadership in Energy and Environmental Design) certification program. The program works through grants provided by the City that support 50/50 cost sharing of incremental construction costs (to an established maximum), consultant, energy modelling and certification fees with the applicant.

While several businesses have benefitted from the programs, the 'LEEDing the Way' initiative has had a low uptake and prompted the City's Economic Development Division to initiate a formal public review intended to update the program to make it more attractive to a broader audience of private sector players moving forward.

This update will facilitate the City's ability to encourage private sector players to implement climate resilient measures at their Hamilton facilities. This, in turn, will facilitate the City's ability to implement actions found within Hamilton's Climate Action Strategy.

Visit engagehamilton.ca/leedcipreview for more details on the comprehensive review and how you can get involved.

Conclusion

Hamilton's Climate Action Strategy (HCAS) is our community's pathway to a net zero future by 2050 or sooner. The climate emergency is real, and our community is already experiencing impacts from increasing summer heat to more intense rainfall events capable of causing flooding and erosion. This second Annual Update from the OCCI has highlighted the progress made in 2023 by the City of Hamilton and the broader community with climate mitigation and adaptation efforts.

There were stories of progress to share for 2023 under every transformation category of the climate mitigation focused Community Energy and Emissions Plan, and under every theme in the Climate Change Impact Adaptation Plan. But there are also challenges and barriers to moving forward with the changes that needs to happen to transition to a post carbon future. Determining how to finance climate actions is often cited as a major barrier, even though investing more up front to make these transitions happen yields many benefits, including financial savings, over the long term.

Looking forward to 2025 and beyond, the OCCI will continue to enhance the methods used for publicly tracking and reporting on progress with City and community efforts to implement Hamilton's Climate Action Strategy. In addition, the OCCI will continue to advance work falling under its priority focus areas including:

- Continuing with the development and implementation of a Carbon Budgeting and Accounting Framework for the City of Hamilton.
- Ensuring the strategic allocation of funding from the City's Climate Change Reserve to leverage effective climate mitigation and adaptation efforts.
- Supporting homeowners participating in the Better Homes Hamilton home energy retrofit pilot program who are now beginning to undertake deep home energy retrofits in their homes.
- Working with community members to co-design a Climate Justice Framework to guide climate actions undertaken by the municipality.
- Continuing with work to develop and implement a Net Zero Energy Performance standard for all new municipal facilities, and enabling the municipality to lead by example
- Exploring ways to accelerate the implementation of Hamilton's Climate Action Strategy to front end greenhouse gas emission reductions and, ideally, to realize net zero well before 2050.

Hamilton's Climate Action Strategy is a community-wide plan; everyone needs to do what they can to help our community to mitigate greenhouse gas emissions and to adapt to the impacts we are already experiencing. Our future depends on it!

HAMILTON'S CLIMATE ACTION STRATEGY
Re-Charge. Adapt. Engage. Act.