



STAFF REPORT
Strategic Initiatives

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Author: Ena Ristic
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Attachments: Appendix A: 2023 Sustainability and Climate Change
Financial Update
Appendix B: Timeline of Sustainability and Climate Change
at the City of Waterloo
Ward No.: City Wide

Recommendations:

That Council receive CAO2024-010 as information.

A. Executive Summary

In 2023, staff brought forward the first annual sustainability and climate change update report. It was a comprehensive report that provided an overview of the progressive climate change work happening at the City and in the community. That report stressed the importance of measurement and monitoring our progress as we work towards our 2030 and 2050 greenhouse gas (GHG) emissions reduction targets.

This report is the second in the series of annual reports. The intent of this report is to not only report on the quantitative progress of the City's actions related to climate change, but it is also meant to highlight the qualitative progress of the City's climate change mitigation and adaptation goals. Given the alignment with Earth Day, it is an opportunity to celebrate all the hard work and commitment across all divisions at the City of Waterloo.

There were several noteworthy accomplishments related to climate change work. The City further embedded climate change considerations into all work through the approval of the 2023-2026 Strategic Plan, the completion and approval of the Corporate Climate Action Plan (CorCAP) in early 2024, the approval of a corporate net-zero target by 2050, the updating of the asset management policy (A-030), and the establishment of the Strategic Initiatives division. All these accomplishments presented strong signals to

staff and the community about the importance of this work and helped to provide direction and a robust policy framework under which to implement sustainable action.

Operationally, staff have been working on internal and external capacity building, procurement of electric (EV) vehicles and equipment, increasing the efficiency of resources and reducing waste, and increasing the integration of climate change considerations into divisional work. This has been accompanied by an increased focus on government relations work to explore funding options.

On a community level the City has been working in tandem with community partners to develop Green Development Standards (GDS) and integrate energy considerations into development through the new Terms of Reference for Energy Studies pilot. The Generation Park sustainable employment lands were also officially launched, opening the door to one of Canada's first net-zero-ready light industrial and commercial business areas. The City also continued to divert dog waste, improve the active transportation network, engage with the community, and encourage bike use and safety.

To protect residents against the impacts of climate change and improve enjoyment of outdoor public spaces, the City also installed temporary and permanent shade structures and water features in the Waterloo Public Square, completed the Laurel Greenway Master Plan, broadened resident's abilities to plant boulevard gardens, and hosted several natural stewardship activities throughout the City.

The estimated GHG emissions from the City of Waterloo for 2022 are 5,078 tCO₂. This is a decrease of 5.8% from 2021 and represents a 40% decrease from the 2010 baseline.

This upcoming year will focus heavily on implementation of short-term actions from the CorCAP, a comprehensive review of the Corporate Climate Change Adaptation Plan (CCCAP), continued collaboration with ClimateActionWR and implementation of TransformWR, creation of a corporate EV charging infrastructure strategy, and continued integration of sustainability and climate change into all City processes, plans, procedures, and work.

B. Financial

On December 12, 2022, Council established the Climate Action Reserve Fund (CARF), including the governing reserve policy and the approval of a permanent source of annual funding. The year 2023, therefore, marked the first year of the use of the new reserve fund, which funded 8 projects in support of climate change adaptation and mitigation. The full listing of these projects has been provided in Appendix A.

Throughout 2023, staff worked to develop the 2024-2026 budget, including additional measures to further augment the existing CARF funding, to facilitate projects to achieve the Council approved reduction targets (50% by 2030 and net-zero by 2050). These measures include increases to the annual CARF allocation, policy updates to allocate

operating and investment surplus contributions to CARF, and one-time additional funding, and have been built into the 2024-2026 budget that was approved by Council on February 12, 2024. For full details regarding each of these measures, please refer to Appendix A.

While significant progress has been made through the creation of CARF, and other contributing funding sources (e.g. CIRRF, SWM), future increased additional capital investment will be required to achieve the targets. Consideration and prioritization of increased sustainability and climate change funding will need to be included in future budget processes with recommendations brought forward for Council's consideration and approval, including the potential leveraging of debt to advance projects.

The recently approved 2024-2026 budget takes positive action in this regard, with the approval of an increased allocation of the infrastructure investment funding to facilities, the inclusion of the \$10.25 million Facility Transformational project, funded by debenture, and the approval of ongoing funding for climate change and sustainability contributions to community partners, as well as funding for climate change advocacy with upper levels of government, implementation efforts, and engagement. Further information on each of these initiatives is outlined within Appendix A.

C. Technology Implications

None.

D. Link to Strategic Plan

(Strategic Priorities: Reconciliation, Equity, Accessibility, Diversity and Inclusion; Environmental Sustainability and Climate Action; Complete Community; Infrastructure and Transportation Systems; Innovation and Future-Ready)

(Guiding Principles: Equity and Inclusion; Sustainability; Integrity; Workplace Wellbeing; Community-centred; Operational Excellence)

This report supports the strategic priority of Environmental Sustainability and Climate Action and the City's efforts to mitigate and adapt to the impacts of climate change through the monitoring and tracking of progress in this space. These annual reports allow for a quantitative and qualitative review of the progress of the last year and gives staff and Council additional information that allows the City to pivot or continue action as needed.

Furthermore, this report also fulfills two objectives of the strategic priority of Environmental Sustainability and Climate Action. By monitoring and reporting on the sustainability and climate change work of the City, it allows for transparency and accountability for the Strategic Plan's Objective 1: Climate Leadership. In addition, the cross-divisional and holistic approach to monitoring strengthens the City's environmental sustainability mindset and draws attention to the importance of the work, a cornerstone of Objective 3.

E. Previous Reports on this Topic

- CAO2024-001 - 2024-2029 Corporate Climate Action Plan, January 29, 2024
- CAO2024-002 - 2050 Net Zero Impact Report, January 29, 2024
- CTTEE2024-00 - SAC Support for City of Waterloo Corporate Climate Action Plan, January 29, 2024
- IPPW2023-049 - Boulevard Gardens, December 4, 2023
- COM2023-037 - Urban Forest Management Strategy Introduction, December 4, 2023
- CORP2023-039 - Asset Management Policy Update, November 20, 2023
- CAO2023-026 - Corporate Climate Action Plan Development Update, October 16, 2023
- IPPW2023-025 - Laurel Greenway Master Plan, May 29, 2023
- IPPW2023-020 - Harmonized Green Development Standards (GDS): Phase 2, April 24, 2023
- CAO2023-016 2020 - Community Greenhouse Gas Inventory, April 24, 2023
- CAO2023-013 2023 - Sustainability and Climate Change Update Report, April 24, 2023



2024 Sustainability and Climate Change Update Report CAO2024-010

1.0 Background

The City of Waterloo has a longstanding history of environmental stewardship and action (Appendix B). Within the past several years the municipality has concentrated its efforts on fighting climate change through the creation and continuous implementation of several action plans. This work created a solid foundation for years to come for the City to mitigate (reduce) its greenhouse gas (GHG) emissions and adapt to the anticipated and experienced impacts of climate change. These plans focus on community (the entire City of Waterloo including homes, businesses, green space, etc.) and corporate (the assets and actions owned or managed directly by the municipality) scopes. They look to mitigate and adapt (adjust in response) to climate change. These plans include the Corporate Climate Change Adaptation Plan (CCCAP), Corporate Climate Action Plan (CorCAP), Community Climate Adaptation Plan for Waterloo Region, and TransformWR (Transform Waterloo Region). It should be noted that several other comprehensive plans across the City have also integrated or are beginning to integrate considerations of climate change into other scopes of work.

Climate change is the role and responsibility of all divisions within the City to various degrees. The coordination of the climate action component of the work largely sits with the Strategic Initiatives division within the Office of the CAO. Within the City there are also several cross-divisional teams that contribute to the management and implementation of this work. This includes the cross-divisional Environmental Sustainability Team (EST) and the Climate-READI team. The City also works closely with the Sustainability Advisory Committee (SAC) comprised of residents selected by Council to provide input into the City's sustainability work.

The City is fortunate to be able to work with several community partners and organizations including, but not limited to, ClimateActionWR (Climate Action Waterloo Region), Sustainable Waterloo Region, Reep Green Solutions (REEP), Waterloo Region Community Energy (WRCE), Grand River Energy (GRE), Enova, the post-secondary institutions, and many more.

This report is the second in a series of annual reports providing a qualitative and quantitative overview of the work accomplished in this space within the past year.

2.0 Corporate Update

The corporate scope encompasses all the actions, monitoring, and reporting conducted by the City for its own buildings, fleet, equipment, and staff activities. It does not include actions that were conducted by City staff but influenced the community scope. There are two plans which govern the climate change work of the Corporation:

- 1) [The Corporate Climate Change Adaptation Plan](#). This plan was approved by Council in 2019 and contains 37 actions for the City to undertake to increase its resilience to a changing climate.
- 2) The Corporate Climate Action Plan (CorCAP). This plan was unanimously approved by Council on January 29th, 2024. The plan contains 61 holistic actions for the City to reduce its own GHG emissions by 50% by 2030 (as compared to a 2010 baseline).

Annual updates will be provided for both plans as part of this series of Sustainability and Climate Change Update Reports. These updates will begin in 2025 and will contain high-level qualitative and quantitative summaries of the progress on all the actions to date, as well as more in-depth summaries of notable progress for individual actions. In addition, a detailed update of the City's progress regarding the Corporate Climate Change Adaptation Plan will be presented in late 2024 or early 2025. That update will be the first progress update on the plan since its creation in 2019.

The City of Waterloo's corporate GHG emissions reduction goals are 50% by 2030 and net-zero by 2050. Within the last year Council has re-confirmed the 2030 goal and chosen to adopt a more aggressive 2050 target of net-zero emissions to align with the Government of Canada's target established in 2021. This Council is the first in the Region to announce a net-zero emissions target.

There is a two-year lag in data availability for the reporting of the City's corporate GHG emissions. This is because of the measurement requirements and timing of provincial emissions verification processes and is consistent with other municipal standards. The estimated GHG emissions from the City of Waterloo for 2022 are 5,078 tCO₂. This is a decrease of 5.8% from 2021 and represents an 40% decrease from the 2010 baseline¹. Figure 1 shows the estimated corporate GHG emissions from 2010 to 2022². It is important to note that there may be minor variances between different data sets due to decisions of scope, timing of emissions factor considerations, and data quality. In addition, the correlation between City GHG emissions and City activities is not direct and is heavily influenced by factors such as use, weather conditions, and the emissions intensity of the provincial energy grid.

¹ It is important to distinguish between the amount of energy used (in the form of gas and electricity) and the emissions created because there is not a consistent or direct correlation. The emissions intensity of our energy sources is often dependent on factors outside of our control, such as the emissions intensity of the provincial energy grid or the emissions intensity of our natural gas sources.

² Data and graphic provided by CarbonHound through the City's partnership with Sustainable Waterloo Region and the Impact Network.

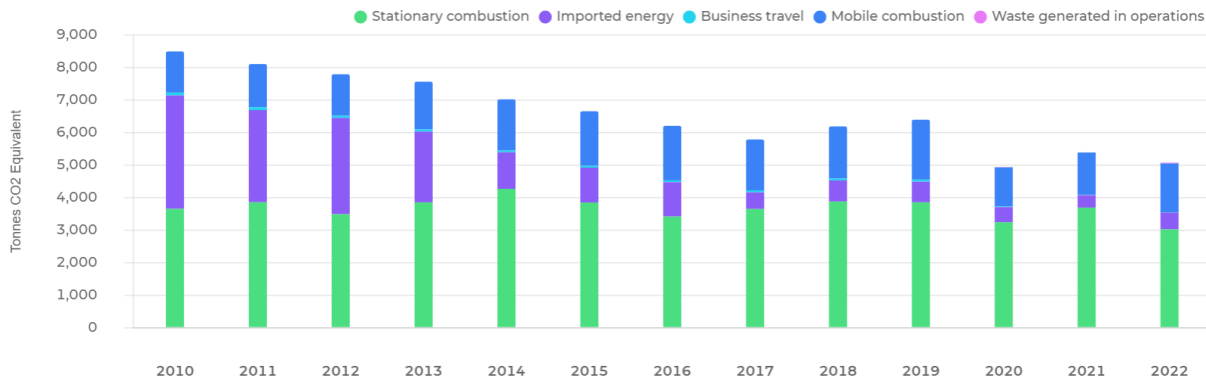


Figure 1 Summary of City of Waterloo corporate GHG emissions from 2010 to 2022

Several strategic initiatives were completed and approved in 2023. This work will guide the next several years of sustainability and climate change work at the City. Key highlights of this strategic work include:

- **Completion and unanimous approval of the Corporate Climate Action Plan.** This plan lays out a holistic and comprehensive approach to reducing the City's corporate GHG emissions by 50% by 2030 (as compared to 2010 levels).
- **Launching of the 2023-2026 Strategic Plan.** This strategic plan places emphasis on the importance of environmental, sustainability, and climate change work for the City at all levels. For the first time, sustainability and climate change was integrated throughout the strategic plan and was one of the five strategic priorities.
- **Adoption of a new GHG emissions reduction target of net-zero by 2050.** This represents an increase of the 2050 goal from 80% to net-zero (CAO2023-026).
- **Updating of the 2024 Green Building Policy.** This update will incorporate the new net-zero carbon emissions reduction target for 2050. Changes in this policy include that new building and construction need to be zero-carbon (previously zero-carbon ready). There is now also an embodied carbon emissions target.
- **Updating of the Strategic Asset Management Policy (A-030).** This update will include climate change, mitigation, and adaptation principles.
- **Creation of the Strategic Initiatives division.** This team was created in April 2023 and houses the coordination and management of sustainability and climate change work in the form of climate action. Several divisions have been independently moving forward on mitigation and adaptation projects, and the creation of this centralized team is allowing for more efficient and streamlined reporting, monitoring, funding, and coordination of those efforts.

In addition to the improvements to the City's strategic processes, several changes have been made to the day-to-day and operations of City work. These include:

- **Piloting the use of cold water for ice making and ice maintenance within City arenas.** Hot water has been traditionally favoured for making strong and smooth ice. However, with the advent of newer technologies the City is piloting the use of cold water in our arena rinks. This would require less energy to create and maintain the ice.
- **Procurement of several electric vehicles and tools.** These include two ice resurfacers, three e-bikes for use by Municipal Enforcement Services, four Ford F-150 utility trucks, one Kona, four utility vehicles, one van, and battery-powered rescue tools. The City currently has 25 electric on- and off-road vehicles as well as several electric power tools used by operational crews.
- **Strengthening of staff capacity through training.** In 2023 staff from the Strategic Initiatives and Asset Management teams took training on how to integrate climate change and asset management. In addition, the Strategic Initiatives and Asset Management teams took Asset Management Ontario's Climate Change and Green Infrastructure Training together. These courses are strengthening the City's efforts to integrate climate change into City operations and services. In addition, they allow staff to place focus on climate change adaptation which contributes to the overall work to meet corporate climate change goals.
- **Expansion of online services to reduce paper use and transit time.** Several divisions have been continually increasing their online service offerings and reducing the need for paper and travel. For example, this year Legislative Services has expanded their use of OpenText Core Share as part of a larger strategy to reduce paper usage in Council processes and records management. This includes the transition to an electronic-only Council orientation binder, supporting Finance in electronic budget records, and supporting other divisions in moving to online applications and large document file sharing.
- **Increased use of hybrid meeting equipment.** This not only helps to reduce travel requirements for participants, but also provides additional choice for equity deserving communities and increased participation options.
- **Composting of leaves and flowers to create new soil.** Staff in Parks, Forestry, and Cemetery Services take leaves and flowers from gravesites and from other horticultural teams and then compost it into soil material. That soil is then repurposed for other horticultural and parks work. This not only reduces waste but also eliminates the need to purchase new soil.
- **Donation of used fire equipment and fire fighting gear** to reduce waste. Structural gear is donated to Firefighters without Borders and old uniforms are donated to The Working Centre, Ray of Hope, and other agencies in need.
- **Adoption of PFAS-free firefighting foam agent.** PFAS (per-and polyfluoroalkyl) are long-lasting chemicals which break down very slowly over time. Studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.
- **Removal of fossil-fuel powered generators from the apparatus specifications for fire equipment.** This is possible due to increased availability of battery-powered scene tools and lighting.

- **Updating of the Waterloo Public Library's Strategic Plan.** The update of the strategic plan included strategic goals of 1) reassessing and amending the library's policies, plans, practices, and spaces with and emphasis on Reconciliation and sustainability, and 2) enhancing the environmental literacy skills within the community.

Furthermore, the City's work on integration of strategic planning, climate change, and asset management was featured in an Asset Management Ontario case study entitled [An Integrated Approach to Climate Change and Asst Management at the City of Waterloo](#).

Despite the concerted efforts from staff across the City, we know that we cannot do all the important work to reach our climate change goals without funding from higher orders of government which we are pursuing through advocacy. In 2023 this included:

- **AMO (Association of Municipalities of Ontario) delegation for RIM Park funding to address GHG emissions.** City staff had a meeting with the Ministry of the Environment, Conservation, and Parks to discuss possible funding options.
- **The Housing Accelerator Fund application.** This application included eight initiatives that were all created with a sustainability lens. The approval of this grant means that the City will be able to invest in projects that focus in part on increasing housing density around existing transit.
- **Mayor's submission for the Ontario 2024 Pre-budget consultation.** This submission included a request for funding for ongoing commitment to climate adaptation and mitigation.

3.0 Community Update

Municipal government has a unique capability to influence community emissions through projects, policies, by-laws, and engagement. The City of Waterloo is part of the regional climate collaborative ClimateActionWR and works collectively with all eight regional municipalities as well as local energy providers and other organizations to reduce community emissions. As part of this initiative the regional municipalities measure community emissions on a regional scale. The [last measurements](#) in 2019 showed a 3.7% decrease in community emissions from the baseline 2010 year³. The next community inventory is anticipated to be completed in mid 2024 and will summarize the region's community emissions for the year 2022.

Key highlights of the community mitigation work within the past year include:

- **The City approved ongoing Climate/Sustainability funding.** This funding was allocated for various memberships and collaborative contributions committed to by the City as part of the 2024-2026 budget including ClimateActionWR,

³ Please note that while data was also measured for the year 2020, the impacts of the COVID-19 pandemic resulted in skewed data that is not an accurate representation of long-term systematic change and has therefore been excluded from this discussion.

Waterloo Region Community Energy (WRCE), Sustainable Waterloo Region (SWR), and REEP.

- **The City began piloting new [Terms of Reference for Energy Studies](#) in July 2023.** Energy studies explore how different approaches to energy efficiency can impact a proposed new development and are required as part of a complete application for developments of a certain nature. This includes Zoning By-law Amendments proposing at least one building that is 7 storeys or more in height and Draft Plans of Subdivision proposing predominately low-rise residential development.
- **The City is collaborating with other area municipalities and WRCE to develop harmonized Green Development Standards for the region.** Green Development Standards are a tool used to help guide sustainable development across the Region and increase action on sustainability measures for new development to improve environmental, social, and economic performance. This ultimately helps to mitigate GHG emissions and increase sustainability and resiliency.
- **The [Generation Park](#) employment lands project.** Generation Park is one of the first light industrial/commercial business areas in Canada to be zero-carbon ready. The park follows LEED Silver and Canada Green Building Council (CAGBC) Zero-Carbon Building Standards and looks to incubate a community of sustainable businesses. This project received an honorable mention at the Economic Developers Council of Ontario (EDCO) Awards in the Innovation in Community Resilient Award (Urban Population over 100,000) category.
- **The City participated in the Region's Shared Micromobility Program.** The pilot ran from April to October 2023. The program provided e-bike and e-scooter rentals to encourage more active, shared, and low-GHG transit. Out of 183,021 rides in the Region 143,917 originated or ended within the City of Waterloo. That makes up 78% of all rides for the year.
- **The City of Waterloo's Dog Waste Landfill Diversion Program expanded.** This expansion included the addition of 7 new dog waste collection containers and capturing 28,400 kgs of waste. This is the equivalent to removing 0.78 tonnes of CO₂ from the atmosphere and powering 16.38 homes for a year.
- **The City Hosted the 2024 Ontario Bike Summit in early April 2024.** The City hosted the 15th annual Ontario Bike Summit, 15 years after hosting the first one in 2009. The summit drew delegates including municipal staff and leaders from across the country focusing on sustainability and innovation through cycling.
- **Reduction of speed limits in select areas on residential roads to 30 or 40 km/hr.** Reduced speed limits have multiple climate co-benefits including creating safer streets for pedestrians and cyclists, reducing congestion, and reducing the need for carbon-intensive acceleration and deceleration.
- **Leasing licence signed for the West-Side Multi-Use Trail.** This trail will go through the hydro corridor from St. Mortiz Blvd to the new Generation Park employment lands and will provide a multi-block connection between existing residential, institutional, and green spaces in the area and connect to the greater trail system. It is part of the City's continuing effort to improve active modes of transportation and the off-road trail network.

- **The Waterloo Public Library offered sustainability programming.** This programming included:
 - o Programs with a focus on re-purposing, natural materials, and sustainability such as Botanical Dyeing, Repairs with Red Raccoon Bike Rescue, Solar Oven Snacks, and Ready, Set, Repurpose.
 - o Programs with a focus on exploring, learning about, and appreciating, our natural environment such as Families in the Wild, Growing Mushrooms, Astrobotany, Family Aquaponics, Tree Identification Walks, and Bird Watching Hikes.
 - o Programs with a focus on gardening, pollinators, and naturalization such as Five Ways to Start Naturalizing Your Yard, our ongoing teaching beehive programming, and our work in partnership with Sunnydale Community Garden group.
 - o Launching of sharing economy through the creation of a Radon Monitor collection, skate collection expansion, and the first phase of a Makerspace at the Eastside Branch. The library also saw over 4,500 circulations of their boardgame and jigsaw puzzle collections in 2023 and 1,500 circulations of skates.
- **Continued implementation of the active transportation network.** This included sidewalk construction, wayfinding installation, improved pedestrian crossings, increased bicycle parking, maintenance on pedestrian bridges, implementing and resurfacing bike paths, and installation and monitoring of 13 trail counters.
- **Continued efforts to reduce waste and increase sustainability on a neighbourhood level.** This included increasing the inventory of items in the neighbourhoods' event equipment rental program, encouraging neighbours to consider sustainable practices for planning events and activities, using green-bins at City-led neighbourhood events, and helping to host events and activities that focus on the environment and climate change such as a REEP Green Solutions Tree Walk in Uptown West and community clean-ups.
- **ClimateActionWR led the way in several community engagement, monitoring, and reporting activities.** These activities included the launch of the [TransformWR Dashboard](#) to track performance of the TransformWR community mitigation plan across the region and the release of the [Our Progress, Our Path](#) report which details the 2019 and 2020 community GHG emissions inventory figures. ClimateActionWR also engaged the community through partner engagement events, outreach presentations, community events, student events, and tables at the Waterloo Busker Carnival, Day of Play, KW Chamber of Commerce (Energy and Environment Forum) and the Uptown Waterloo Jazz Festival. Engagement was done to raise awareness of TransformWR within the community.

Several initiatives were initiated or completed within the past year to help adapt the community and protect residents and visitors against the impacts of climate change. Key highlights of the community adaptation work within the past year include:

- **Adding permanent and temporary shade structures and a water feature to Waterloo Public Square.** These are effective ways to reduce the urban heat island effect in a heavily paved area and allow for increased enjoyment and heat safety of the uptown area.
- **Completion and approval of the Laurel Greenway Master Plan in May of 2023.** This master plan is the starting point for creating the Laurel Greenway, a nearly 2km long, 30m wide green swath through Uptown Waterloo. There will be sustainable design features, additional planting (and natural shade), and improved active transportation (and more) along the Greenway.
- **Installation of pedestrian lights along the Laurel Trail between Pepler Street and Weber Street.** This increased lighting has increased the comfort, safety, and hours of use for the Laurel Trail active transportation route and expanded the City's active transportation options.
- **Installation of an accessible drinking water fountain in Waterloo Public Square.** This water fountain connects to an adjacent fire hydrant to provide water to various levels of accessible stations, including a ground level drinking station for pets. In addition to providing more equitable and affordable access to clean drinking water, the fountain allows residents to refill reusable water bottles rather than purchase single-use plastic ones and can increase comfort levels in the summer heat.
- **Amendments to the Highway Occupancy By-law and development of a boulevard garden guideline.** This guideline reduced the buffer strip area to 30 cm, increased the plant height limitations from 18 inches to 30 inches, updated the definition of a "pest", and removed the appearance requirements for a naturalized area. This will increase residents' abilities to naturalize their properties and enable them to plant gardens within a boulevard or cul-de-sac island.
- **Neighbourhood and park [stewardship](#) activities through the City.** These activities were carried out through partnerships with various divisions and with the support of dedicated volunteers. The City engaged in a large host of local plant stewardship activities. These included planting over 900 trees, funding two new pollinator patches, supporting plant swaps, tree education walks, natural art projects, and planting or maintaining a plethora of native wildflowers, shrubs, and native plants. City staff and volunteers also maintained park paths and worked to manage the number of invasive species.
- **Winning of REEPs 2023 [Tree of the year award](#).** This award was for a burr oak at the Waterloo Public Library nominated and championed by the local community. The tree is a minimum of one hundred years old and is much beloved by the neighbourhood, showing up in countless historical land records and pictures.
- **Commencement of the Urban Forest Management Strategy.** This strategy which will look to advance the City towards the goal of fostering resiliency within the urban forest and natural areas, as per the recommendations of the 2019 City of Waterloo Corporate Climate Change Adaptation Plan.

- **Creation of sustainable outdoor art by local artist Agnes Niewiadomski.**
This piece of outdoor art using invasive and native species such as dogwood, buckthorn, and willow to create a [woven sculpture](#) at a local park.

4.0 Educational Partnerships and Collaborations

A reoccurring theme prevalent in sustainability and climate change work is that progress is only possible through the collaboration and efforts of everyone. From the national to the neighbourhood and the public to the private, it is these partnerships which drive forward and accelerate positive change and make innovation possible.

Within the past year the City of Waterloo has had the opportunity to create new partnerships and strengthen existing relationships with our school boards and post-secondary institutions through undergraduate and graduate research opportunities and student engagement. Examples include:

- An undergraduate [student](#) internship through the Laurier-City Hub initiative researched “Exploring Strategies to Promote Sustainable Behaviours and Practices Among Post-Secondary Students in the City of Waterloo”.
- An undergraduate team through the Laurier-City Hub initiative term projects researched how to ‘green’ City festivals and events to reduce waste and GHG emissions.
- An undergraduate team through the Laurier-City Hub initiative term project researched how to “Reduce end of Term Bulk Waste in the City of Waterloo.”
- An undergraduate team through a health class at the University of Waterloo researched “Reducing Climate Anxiety within the City of Waterloo”.

Students throughout the post-secondaries are currently working on projects to reduce vehicle idling during school drop off and pick-up times (“Drive to Five”), to increase public transportation use within the City, to create a more sustainable procurement policy, to determine the current state of carbon budgeting, and to research the feasibility of carbon offsets in a municipal context.

Work within these partnerships has also led to opportunities to engage with post-secondary institutions across Ontario on their sustainability initiatives as well as high-school and elementary students within the City.

In addition, City staff have had the opportunity to present as panelists to local small businesses and residents at the SDG (Sustainable Development Goal) Factory in Kitchener. The presentation focused on sustainable communities and the City’s work on furthering this portfolio.

5.0 Looking Ahead

Throughout 2023 there was a strong focus placed on policy creation, planning, engagement, and internal capacity building. Over the course of the next year, Strategic Initiatives and other divisions across the City will focus on the implementation of that

foundational work and continued partnership building, advocacy, engagement, and increased external and internal capacity and knowledge building. Key projects for 2024 and early 2025 include:

- Implementation of the short-term actions in the CorCAP.
- Development of the Corporate Electric Vehicle Charging Infrastructure Strategy.
- Implementation and comprehensive reporting update of the Corporate Climate Change Adaptation Plan.
- Community Conversation focused on the strategic priority of Environmental Sustainability and Climate Action.
- Continued integration of climate change within asset management work.
- Continued advocacy to help advance the work needed to meet climate change targets.
- Selling of lands within Generation Park and the implementation of the applicable sustainability standards.
- Reporting of the CorCAP and CCCAP in the next Sustainability and Climate Change Update Report.

Although the momentum of this work is promising, there are several likely challenges and barriers that will need to be overcome within the next year and beyond. The challenges and opportunities associated with climate change exist in a complex ecosystem and often need to be balanced with other priorities. Population growth, intensification, affordable housing needs, and economic trends as well as other demands can compete for land, staff time, resourcing, and public attention and support. In addition, unforeseen circumstances such as provincial or federal legislation changes or emergency situations may introduce new roadblocks.

As the focus shifts to implementation, City staff will need to determine equitable, feasible, and efficient prioritization of projects and resourcing. As the City shifts into this new phase of work, it is paramount that we balance existing resources over the course of the next several years to best achieve our climate change goals.

The work needed to meet climate change goals cannot be accomplished in isolation. Significant progress requires dedicated financial support from all levels of government and relies on advocacy, collaboration, and relationship building.

Long-term actions are built upon short-term goals and progress. Throughout 2023 the City of Waterloo established a strong policy framework, monitoring and reporting system, internal teams, and increased internal and external capacity to facilitate the implementation of sustainability and climate change work. This work has highlighted the progress made by the City to date and created strategies to push the City closer to meeting its climate change goals. With the completion of the second annual sustainability and climate change report, it is a good reminder of all that has been accomplished, and all that still needs to be done to ensure a clean, healthy, and prosperous environment for all the generations to come.

Appendix A: 2023 Sustainability and Climate Change Financial Update

Climate Action Reserve Fund

On December 12, 2022, Council established the Climate Action Reserve Fund (CARF) with Council's approval of CORP2022-049, the Reserves and Reserve Funds Annual Update report. Also, by way of this report, Council approved the governing policy for CARF and established a permanent source of annual funding, through the redirection of \$918,000 in ongoing annual funding from the budgeted annual CRF contribution to CARF. In the CARF inaugural year, this funding along with one-time funds of \$730,000 from the closeout of the Capital Reserve Fund (CRF) Green program, was used to fund a number of 2023 budgeted projects, as outlined in Table 1.

Table 1 2023 CARF Funded Projects

Ref	Project	CARF	Other Funding (CIRRF, CRF)	Total
141	Community Climate Action Plan- TransformWR Implementation	\$210,000		\$210,000
144	Electric Vehicle Charging Program	\$25,000		\$25,000
145	Environmental Sustainability Initiatives	\$10,000		\$10,000
146	Grant Opportunities	\$53,000	\$263,000	\$316,000
220	Corporate Energy Management Implementation, Monitoring and Reporting	\$26,000		\$26,000
221	Green Building Policy Implementation	\$526,000		\$526,000
283	E-Bikes	\$11,000		\$11,000
633	Community Energy Investment Strategy Implementation	\$155,000		\$155,000
Total		\$1,016,000	\$263,000	\$1,279,000

The CARF Council Approved Target Level policy highlights that ongoing monitoring will be required to ensure the reserve fund is adequately funded to facilitate projects to achieve the Council approved reduction targets (50% by 2030 and net-zero by 2050). To that end, throughout 2023 the staff Budget Committee developed several measures to continue to augment the CARF funding to support this important work, which have

been incorporated into 2024-2026 Budget and 2027-2033 Capital Forecast approved on February 12, 2024. These changes include:

- **Redirecting \$100,000 in 2024, \$50,000 in 2025, and an additional \$50,000 in 2026 of the annual Capital Reserve Fund (CRF) funding to increase the ongoing annual funding for the Climate Action Reserve Fund**
 - Through the initial allocation to establish an ongoing annual contribution to the Climate Action Reserve Fund, as well as the proposed increases to that contribution over the 2024-2026 window, the annual contribution to CARF is projected to increase from \$918,000 in 2023 to \$1,510,000 by 2033. This includes an inflationary factor, in accordance with the Council Approved Capital Budget Policy (FC-012), to ensure that spending does not outpace available funding due to inflation. This methodology is used for the main City sources of capital funding, CRF and CIRRF, and is an acknowledgement that CARF, though a newly established source, is anticipated to play a significant role in the capital program going forward.
- **Allocating 25% of final reported property tax operating surplus annually, if any, to the Climate Action Reserve Fund**
 - As a surplus allocation, contributions will change significantly from year to year and cannot be predicted in a manner that can be relied upon with enough certainty for the purposes of developing the capital budget. Once realized, however, any funds contributed would be built into the next budget cycle's CARF capital funding envelope allocations.
 - For 2023 year-end, this will result in approximately \$465,000 being allocated to CARF.
- **Allocating 25% of actual investment income surplus annually, if any, to the Climate Action Reserve Fund**
 - As a surplus allocation, contributions will change significantly from year to year and cannot be predicted in a manner that can be relied upon with enough certainty for the purposes of developing the capital budget. Once realized, however, any funds contributed would be built into the next budget cycle's CARF capital funding envelope allocations.
 - For 2023 year-end, this will result in approximately \$1,000,000 being allocated to CARF.
- **Redirecting \$500,000 in one-time funding from the RIM Park Investment Reserve surplus to the Climate Action Reserve Fund**
 - In 2023, funding in the RIM Park Investment Reserve (RIM) was projected to exceed the repayment needs, providing a surplus funding reallocation opportunity. Along with several other priorities, Council approved the one-time redirection of \$500,000 to CARF to support various initiatives within the 2024-2026 budget without adding additional ongoing pressure to the property tax base.

Other Key Initiatives

Funding for sustainability and climate change includes more than just CARF funding. For example, many rehabilitation/replacement projects funded by the Capital Infrastructure Reinvestment Reserve Fund (CIRRF) contain elements of “like-for-modern-equivalent” which provide climate benefits along with replacing the aging asset (e.g. replacing high pressure sodium (HPS) decorative street light bulbs with Light Emitting Diode (LED) bulbs). Our enterprises (i.e. Stormwater) deliver numerous programs and capital projects that support sustainability through measures like flood control and environmental compliance. Grants also play a significant role in helping the City achieve its climate change targets because tackling the climate crisis requires support from all levels of government and private enterprises.

To further support this key initiative, Council approved an increased allocation of the infrastructure investment funding to facilities, as well as the inclusion of the \$10.25 million Facility Transformational project, funded by debenture, in the recently approved 2024-2026 budget. Staff will be looking to leverage these funds into a larger project through grant opportunities that may become available in 2024/2025.

Ongoing funding for Climate Change and Sustainability contributions, including \$65,000 for ClimateActionWR, \$16,000 for Waterloo Region Community Energy (WRCE), \$7,000 for SWR, and \$40,000 for REEP (effective 2025 as per M28), were also included in the budget developed in the 2024-2026 budget approved by Council in February, as was \$30,000 in funding for climate change advocacy with upper levels of government, implementation efforts, and engagement.


While significant progress has been made through the creation of CARF and the above highlighted other contributing funding sources, future increased additional capital investment will be required to achieve the ambitious GHG emission reduction targets of 50% by 2030 and net zero by 2050. Consideration and prioritization of increased sustainability and climate change funding will need to be included in future budget processes with recommendations brought forward for Council’s consideration and approval, including the potential leveraging of debt to advance projects. In addition, and in recognition of the fact that municipalities cannot solve the climate crisis alone, ongoing advocacy to senior levels of government, and leveraging of grants opportunities will continue to be an area of priority in addressing the climate emergency.

Appendix B: Timeline of Sustainability and Climate Change in the City of Waterloo

- **1989**
 - Development of the Environment First Policy
- **1992**
 - The City of Waterloo completes one of Ontario's first watershed studies in partnership with the Grand River Conservation Authority leading to the completion of several subwatershed plans and environmental policies in the Official Plan
- **1999**
 - The City of Waterloo becomes a member of the Federation of Canadian Municipalities (FCM) Partners for climate protection program
 - Council agrees to work towards a corporate GHG emissions reduction target of 20% and a community GHG reduction target of 6% by 2009
 - Completion of the City's Clean Air Plan
- **2002**
 - Council accepts the Environmental Strategic Plan
- **2003**
 - The City of Waterloo generates its first Solar PV energy to offset a portion of the electrical load of City Center
- **2010**
 - The Environmental Strategic Plan becomes the Environmental Strategy
- **2011**
 - The City of Waterloo begins tracking its GHG emissions as per O.Reg. 507/18
 - Council approves the decision to join ClimateActionWR (previously Waterloo Region Climate Collaborative)
 - Stormwater management utility rates are introduced
- **2013**
 - Council approves the City's first Energy Conservation Demand Management (ECDM) Plan
- **2014**
 - The City becomes a pledging partner in the Impact Network (previously the Regional Sustainability Initiative)
- **2015**
 - Creation of the City of Waterloo's Sustainability Office
- **2016**
 - Formation of the Sustainability Advisory Committee (SAC)
- **2018**
 - Council endorses the Community Energy Investment Strategy
 - Council endorses a community energy reduction target of 80% by 2050
 - Council endorses the Green Building Policy for City-Owned buildings 24 Chief Administrative Office
- **2019**
 - Council approves the Corporate Climate Change Adaptation Plan

- “Enable bold local actions to address the climate change crisis” is named as an objective in the 2019-2022 Strategic Plan
- Council declares a climate emergency and adopts corporate GHG emissions reduction targets of at least 80% by 2050
- **2020**
 - Council approves the terms of reference for the Corporate Climate Action Plan (CorCAP)
- **2021**
 - Council endorses the TransformWR community GHG emissions reduction targets of 50% by 2030 and 80% by 2050
 - Council approves the Corporate Greenhouse Gas and Energy Roadmap - Phase 1
- **2022**
 - City of Waterloo hires a Senior Sustainability Officer in the Office of the CAO to oversee work on the sustainability and climate change portfolio.
 - Strategic adjustment of asset replacement from a like-for-like to modern equivalent approach.
 - Establishment of the Climate Action Reserve Fund
- **2023**
 - Council approves the Director of Strategic Initiatives role as part of the 2023 budget to oversee sustainability and climate change as part of their portfolio
 - The City creates the Strategic Initiatives division which allows for cross-divisional and focused action on sustainability and climate change work
 - Council increases the City’s corporate GHG emissions reduction target from 80% by 2050 to net-zero by 2050
 - Council approves the new 2023-2026 Strategic Plan, which places an emphasis on climate change action and sustainability
 - The City updates its Asset Management Policy (A-030) to include specific climate change adaptation and mitigation integration
- **2024**
 - Council approves the City’s first Corporate Climate Action Plan (CorCAP)
 - The corporate green building policy is updated to account for the new net-zero by 2050 target
 - Council approved the 2024-2026 budget, which included significant investments in climate change adaptation and mitigation as outlined in Appendix A

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1 Approval of Reports to Council **2 Financial Review** Civic Address (Non-street file)

Author:	Ena Ristic
	-
Author - Date signed:	04/04/2024
	-
Approval - Director:	Sandy Little
	-
Approval Date - Director:	04/04/2024
	-
Approval - Commissioner:	n/a
	-
Approval Date - Commissioner:	None
	-
Approval - Finance:	Brad Witzel
	-
Approval Date -Finance:	04/05/2024
	-
CAO:	Tim Anderson