



STAFF REPORT
Strategic Initiatives

Title: 2025 Sustainability and Climate Change Update Report
Report Number: CAO2025-002
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Attachments: Appendix A: 2024 Sustainability and Climate Change Financial Update and Grant Submission Summary
Appendix B: Timeline of Sustainability and Climate Change in the City of Waterloo
Appendix C: Corporate Climate Action Plan Progress Summary
Appendix D: Corporate Climate Change Adaptation Plan Progress Summary
Appendix E: TransformWR Plan Progress Summary
Ward No.: City wide

Recommendations:

1. That Council approve CAO2025-002.
2. That Council re-affirm the City's commitment to reducing corporate greenhouse gas emissions by 50% by 2030 and net-zero by 2050.
3. That Council re-affirm the City's commitment to reducing community greenhouse gas emissions by 50% by 2030 and 80% by 2050.
4. That Council recognize the achievement of attaining a 40% reduction in corporate GHG emissions from 2010.

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 measuring and monitoring our progress as we work towards the 2030 and 2050 greenhouse gas (GHG) emissions reduction targets and resilience goals. This is the third in that series of annual reports.

The City's work on climate change is based on corporate and community GHG emissions reduction targets that the current and previous Council established. The corporate GHG emissions reduction targets of 50% by 2030 and net-zero by 2050 were unanimously approved by Council on January 24th, 2024, and October 16th, 2023, respectively. The community GHG emissions reduction targets of 50% by 2030 and 80% by 2050 were also unanimously approved by Council on May 31st, 2021, and November 18th, 2019.

As part of its work to reach aggressive GHG emissions reduction target, the City continued to embed climate change considerations into all work throughout 2024 including the approval of the Corporate Climate Action Plan (CorCAP), the integration of climate change into the 2024 Asset Management Plan and Official Plan Review - Phase 1, the refresh of the Sustainability and Climate Change webpage, and the integration of net-zero emissions goals into the Green Building Standards' policy. A new Sustainability Officer position was created and filled in the fall which has already begun to accelerate the implementation of internal emissions reductions work.

The City has also made significant progress on all its corporate and community climate change plans. Over half of the actions in the CorCAP, three-quarters of the actions in the Corporate Climate Change Adaptation Plan, and two-thirds of the actions in TransformWR are in progress or complete. Staff also applied for several grants to advance this work and collaborated on many advocacy opportunities to the provincial and federal governments.

The City has continued to integrate electric vehicles (EVs) into its fleet, expand the active transportation network, and engage with the community. In the past year, the City held two Community Conversations as part of the Strategic Plan focusing on Environmental Sustainability and Climate Action and Infrastructure and Transportation Systems with a focus on sustainable infrastructure, as well as a sustainability-themed Neighbourhoods Summit event. Staff and volunteers also continued to contribute to the City's natural environment through planting and stewardship activities including the Pollinator Working Group and Partners in Parks programs, which continue to expand the urban canopy and increase local biodiversity.

Corporately, the estimated GHG emissions from the City of Waterloo for 2023 are approximately 5,279 tonnes of CO₂e. This is an increase of 4.5% from 2022. Energy use data suggests that the primary cause of the increase from 2022 to 2023 is due to the completion of the Community Pavilion addition to the Waterloo Memorial Recreation Complex which was officially opened in fall 2022 and had its first full year of operation in 2023. The City aims to continue to reduce the GHG emissions created from new and retrofitted buildings through the implementation of the new net-zero target in the Green Buildings' Policy updated in 2024. Despite this annual increase, data shows that the City has decreased its corporate emissions by 40% from 2010 to 2022 and is 80% of the way to its 2030 target.

Mitigating and adapting to climate change requires the consistent and relentless effort of all levels of government - municipal, provincial, national, and international. Ensuring a transition to a sustainable and resilient community that is safe and accessible to all current and future generations must remain a societal priority, regardless of changes in leadership or inaction by others. Despite current international uncertainty, the City of Waterloo has continued to push forward on reducing greenhouse gas emissions and adapting the community to the impacts of climate change. This continued local support amid a rapidly changing global landscape will be crucial to achieving long-term success.

B. Financial Implications

2024 marked the second year of the Climate Action Reserve Fund (CARF). In 2024 CARF provided \$2,036,000 in funding to support eight sustainability and climate change mitigation related projects. The full listing of these projects, including any additional funding sources also utilized, has been provided in Appendix A.

2024 was also the first year of the implementation of many of the measures Council approved as part of the 2024-2026 budget to further augment the existing CARF funding and facilitate projects to achieve the Council approved reduction targets (50% by 2030 and net-zero by 2050). These measures included increases to the annual CARF allocation, annual inflationary increases, and policy updates to allocate operating and investment surplus contributions to CARF.

Also in 2024, a new contract resource position was created for Strategic Initiatives to better position the division to progress on the actions to reduce the community and corporate greenhouse gas (GHG) emissions to enable the City to meet its climate change targets. This contract position was funded through the repurposing of existing approved capital and operating dollars within the division, as well as an allocation from the Employee Development and Capacity Building Reserve contract budget approved by Council through budget request B28-CORP.2024.004.

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 grant opportunities continues to be an area of priority in addressing the climate emergency. In 2024, the City applied for several grants related to sustainability and climate change work. Further information on each of these initiatives is outlined in 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 ongoing efforts to mitigate and adapt to the impacts of climate change by providing a monitoring and reporting mechanism for the City's progress. These annual reports allow for a quantitative and qualitative review of the progress of the last calendar year and gives staff, residents, and Council additional information that allows the City to pivot or continue action as needed. Furthermore, by monitoring and reporting on the sustainability and climate change work of the City, this report allows for transparency and accountability for the Strategic Plan's Objective 1: Climate leadership. Furthermore, 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: Environmental sustainability mindset.

E. Previous Reports on this Topic

- IPPW2019-024 Corporate Climate Change Adaptation Plan, June 17, 2019
- COM2021-027 Corporate Greenhouse Gas and Energy Roadmap - Phase 1, September 27, 2021
- CAO2023 Sustainability and Climate Change Update Report, April 24, 2023
- CAO2024-001 Final 2024-2029 Corporate Climate Action Plan (CorCAP), January 29, 2024
- CAO2024-002 Net-Zero Impact Report, January 29, 2024
- CAO2024-010 2024 Sustainability and Climate Change Update Report, April 22, 2024
- COM2024-010 Green Building Policy and GHG Progress Updates, April 22, 2024
- CAO2024-021 2022 Waterloo Region Community Greenhouse Gas Inventory, June 17, 2024
- CORP2024-018 2024 Asset Management Plan, June 17, 2024
- CAO2024-026 2023-2026 Strategic Plan-2024 Progress Report, November 4, 2024
- IPPW2024-061 Official Plan Amendment 58: Official Plan Review (Phase 1), December 2, 2024



2025 Sustainability and Climate Change Update Report CAO2025-002

1.0 Background

This report is the third in a series of annual reports intended to provide a qualitative and quantitative update of the City of Waterloo's progress on sustainability and climate change initiatives. The baseline report completed in 2023 was the first comprehensive summary of the City's climate change work and established a consistent, transparent, and replicable monitoring and reporting mechanism. These reports have allowed staff and Council to put a spotlight on the work being done, track long-term progress, and prioritize resource use. It provides a fulsome update of the City's three overarching climate change plans (The Corporate Climate Change Adaptation Plan (CCCAP), Corporate Climate Action Plan (CorCAP), and Transform Waterloo Region (TransformWR)) as well as annual updates of progress made by all City staff towards creating a sustainable and resilient City of Waterloo. A high-level summary of the progress made to date by the City from 1989 to 2024 can be found in Appendix B.

The format and content of these reports are iterative and build on the previous year's information and continuous progress of the work. Notable projects completed within the last calendar year (January 1st, 2024 - December 31st, 2024) are highlighted in the main body of the report. Additional context can be found in the appendices.

This report is made possible by the continued collaboration of staff across the City and the ongoing work they do pushing forward and communicating the City's progress and achievements in this space. It serves as an annual reminder of the significant advancements the City has made, as well as the scope and importance of the work that still needs to be done.

2.0 Corporate Update

The corporate scope includes 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 heavily influenced the community, such as planning or community engagement work. The City of Waterloo's corporate greenhouse gas (GHG) emissions reduction goals are 50% by 2030 and net-zero by 2050¹. Corporate climate change work is broadly governed by the Corporate Climate Change Adaptation Plan and the Corporate Climate Action Plan. Actions which support this work are also embedded throughout the City's various comprehensive plans. This section

¹ This Council was the first in the Region to announce a net-zero emissions target in 2023.

outlines the progress made towards reaching the City's corporate GHG and adaptation goals in 2024.

2.1 Corporate 2023 Greenhouse Gas Inventory

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, which is consistent with other municipal standards. The estimated GHG emissions from the City of Waterloo for 2023 are 5,279 tCO₂e. This is an increase of 4.5% from 2022. The data suggests that this increase is primarily due to the completion and opening of the Community Pavillion in fall of 2022 which would have had its first full year of emissions reflected in 2023². As the City continue to grow, this highlights the importance of implementing the City's new 2024 net-zero target in the Green Buildings' Policy and investing in low-carbon technologies and design. Figure 1 shows the estimated corporate GHG emissions from 2010 to 2023³. During that time, the City's corporate GHG emissions have decreased by 40%. This represents 80% of the 2030 target of a 50% reduction in corporate GHG emissions. 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.

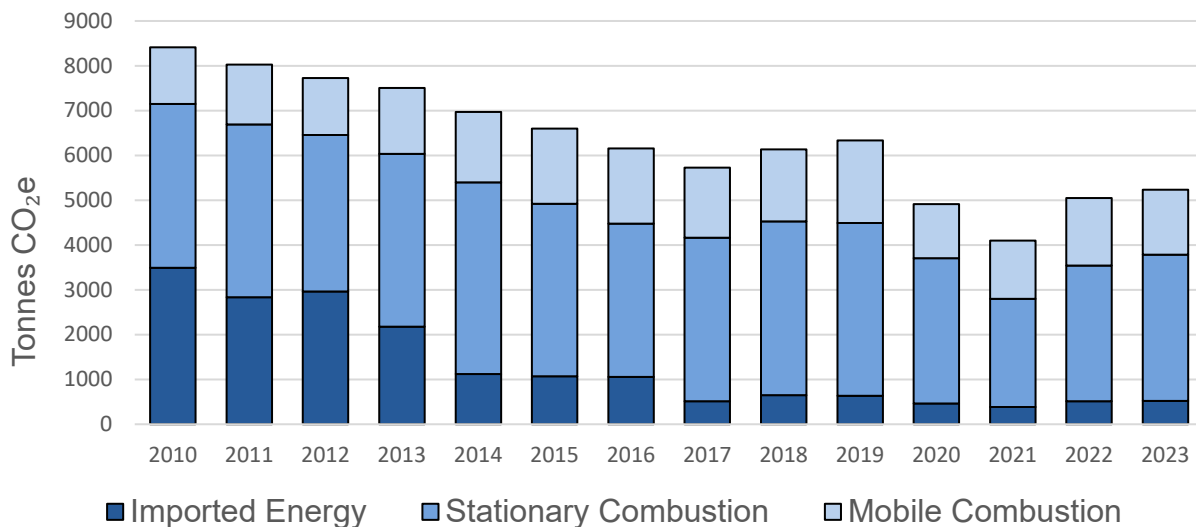


Figure 1 Summary of the City of Waterloo corporate GHG emissions from 2010 to 2023⁴

² 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.

³ Data by CarbonHound through the City's partnership with Sustainable Waterloo Region and the Impact Network.

⁴ Business travel data was not included in the graph due to the nominal emissions in comparison with the other categories. In 2023 business travel produced 44.7 tonnes CO₂e which is approximately half the amount produced in 2010. The GHGs from business travel are still included in all calculations.

Historical data suggests that the City has reduced the number of GHG emissions generated by its assets and activities. However, currently it is difficult to quantitatively isolate the impacts of City efforts from other factors which may impact emissions. These include the carbon intensity of the provincial energy grid⁵, the variable annual needs for heating and cooling, and operational use. As part of the CorCAP (action number 22⁶) staff are working towards a practical method of disaggregating that data to best track the impacts City actions are having independent of other factors. In addition, many projects, such as large capital projects or incremental changes to mechanical systems, may be long-term and may not see direct reductions immediately but still support GHG reduction goals. Qualitatively, actions taken by the City have signalled accelerated and consistent progress on this portfolio over time, as summarized in the following sections of this report.

While there has been steady progress towards meeting the corporate GHG emissions reduction goal of 50% by 2030 (as compared to a 2010 baseline), successfully achieving that goal will be heavily contingent on multiple factors. This includes continued action by the City, availability and timing of budget funding, availability and success of external grant applications, the energy composition of the provincial power grid, advances in technology, the availability and cost of materials and external project teams, and staff capacity. Many of the low-risk and high-yield actions taken by the City have already been completed or are currently in progress, and it is anticipated that future work will challenge staff capacity and budget.

In addition, there are concerns that shifts in global policy and priorities may reduce the momentum of this work, increase the prices of necessary materials, and stall new technological advances going to market. However, it is important for the City to continue to focus on initiatives that are within our sphere of influence as we continue to work towards our aggressive GHG emissions reduction targets.

2.2 Corporate Strategic Level Update

As an administration, the City has increased its internal staff capacity within the Strategic Initiatives division, solidified the direction of sustainability and climate change work, and streamlined communication and messaging. Highlights at this strategic level include:

- **Completion and approval of the Corporate Climate Action Plan.** This corporate mitigation plan was unanimously approved by Council in January 2024

⁵ Carbon intensity refers to how much carbon dioxide is released to produce a single unit of energy. Some energy sources, such as coal, produce far more carbon dioxide emissions than other sources, such as hydroelectric power for the same amount of power. As the City primarily receives energy from the provincial grid system, any increase in carbon intensity of that system will lead to an increase in emissions from the City.

⁶ CorCAP Action #22: For annual reporting purposes (e.g. the Sustainability and Climate Change Update Reports) ensure the distinction and inclusion of both greenhouse gas and energy reductions/increases for the City.

(CAO2024-001). The plan will serve as a guiding document to reduce the City's corporate GHG emissions by 50% by 2030 (as compared to a 2010 baseline).

- **Addition of a new Sustainability Officer resource.** This position which was filled in fall 2024 has vitally increased the capacity of the Strategic Initiatives division to implement sustainability and climate change initiatives corporately and in the community.
- **Completion of the City's [Sustainability and Climate Change](#) webpage refresh.** Previously the Environment webpage, the new content provides residents with a clearer understanding of the work being done, how they can get involved, and showcases the City's commitment to adaptation and mitigation.
- **Completion and approval of the [2024 Asset Management Plan](#).** The plan included several recommendations to integrate sustainability and climate change considerations and impacts into City asset planning. It also identifies and highlights potential demand drivers caused by a changing climate that could negatively impact assets⁷. This includes extreme weather, heat islands, water main breaks (from increased freeze-thaw cycles), demand for EV vehicles and charging stations (corporate and community). Through CORP2024-018, 2024 Asset Management Plan, Council directed staff to continue to advocate for environmental sustainability, climate change, and sustainable infrastructure grant funding and that principles of climate change adaptation and mitigation be integrated into lifecycle management, the Waterloo Decision Support System (Waterloo DSS) performance forecasting methodologies, levels of service, financial planning, and asset selection and prioritization⁸.

2.3 Corporate Climate Action Plan Update

The CorCAP is the City's corporate mitigation plan. The plan contains 61 actions to reduce corporate GHG emissions by 50% by 2030 (as compared to a 2010 baseline). Table 1 provides a high-level summary of the current progress of the actions divided into short, medium, long-term, and buildings and facilities actions. The short-term actions have an anticipated completion date of 2026 and are advancing steadily, with just over half of the actions in progress or completed since the plan's approval in January 2024. Actions have been prioritized based on practicality, timing of other work, and collaboration with other divisions. With the addition of a new Sustainability Officer position focused on the implementation of the CorCAP, it is anticipated that most or all of the short-term actions will be completed or in progress by the end of 2026 as per the plan's timeline. A full summary of the status of each action can be found in Appendix C.

⁷ It is important to note that climate change impacts on infrastructure have not been included in the budget and target scenarios through this plan.

⁸ Many of the methodologies and data required to integrate climate change considerations into all aspects of asset management are still in their infancy or not yet available. Staff continue to monitor and incorporate new information as it is made available.

Table 1 High-level summary of the status of the CorCAP actions

	Not yet initiated	In progress	Complete	Total
Buildings and facilities actions	0	4	1	5
Short-term actions	12	24	1	37
Medium-term actions	5	3	0	8
Long-term actions	5	6	0	11
Total	22	37	2	61

2.4 Corporate Climate Change Adaptation Plan Update

The CCCAP is a corporate adaptation plan approved by Council in June 2019. The plan contains 37 actions divided into 8 goals to increase the corporation's ability to adapt to the impacts of climate change. Table 2 provides a high-level summary of the current progress of the actions. Despite the impacts of the pandemic, the City has been making consistent progress towards implementing the plan with over three quarters of the actions completed or in progress. A full summary of the status of each action can be found in Appendix D.

Approved in 2019, the CCCAP has served as a useful tool to identify areas of focus and improvement for the City's corporate adaptation work. Since then, adaptation methodologies have greatly improved and the City has significantly increased its capacity to coordinate and focus on adaptation work through the creation of the Strategic Initiatives division, and the addition of two Sustainability Officer positions (one permanent FTE and one contract). Considering these changes, City staff will return to Council in fall 2025 with a more comprehensive analysis of the plan's progress and a proposed update and refresh of the 2019 CCCAP. The refresh will focus on simplifying and streamlining the plan in line with other City work and incorporating the latest understanding and best practices of municipal adaptation work.

Table 2 High-level summary of the status of CCCAP actions

	Not yet initiated	In progress	Complete	Total
Goal 1: Create conditions to minimize health and safety risks to outdoor workers and community members.	0	5	1	6
Goal 2: Generate awareness of changing climate conditions with staff and the public.	1	0	2	3 ⁹
Goal 3: Ensure a coordinated response to and recovery from extreme weather events.	0	2	1	3
Goal 4: Consider climate change impacts in the design, construction, and maintenance of built infrastructure.	2	2	0	4
Goal 5: Foster resiliency within the urban forest and natural landscape.	0	4	0	4
Goal 6: Reduce risks associated with heavy rainfall and flooding.	0	7	1	8
Goal 7: Minimize disruption to City services.	2	1	2	5
Goal 8: Integrate climate change adaptation into the City's strategies, plan, policies, procedures and operations.	0	3	1	4
Total	5	24	8	37

2.5 Corporate Buildings and Facilities Updates

Buildings and facilities produce approximately 70% of the City's corporate GHG emissions. This is from the energy required to heat, cool, and operate the facilities which serve thousands of community members each year.

A large source of emissions for buildings comes from the use of natural gas in the provincial energy grid. Natural gas produces more carbon per unit of energy compared to electricity from the Ontario provincial electricity grid. To reduce these impacts, electrification of buildings (converting from natural gas to electricity as the primary source of energy/fuel) has been identified as the most impactful decarbonization strategy for the City (COM2021-027). Electrification of building heating systems will be implemented to meet the 2030 target of a 50% reduction in City owned building GHG emissions relative to 2010 levels. This includes electrification during renewal of assets

⁹ Action 2.3 "Investigate the feasibility of incorporating extreme weather event and emergency information into the Pingstreet app" was removed from consideration as the City terminated use of the Pingstreet app on June 7th, 2024, For the purposes of tracking this action has been marked as "complete".

as well as the addition of supplementary electric based heating assets reaching end of life after 2030. While electricity produces less emissions than natural gas, electricity imported from the provincial electricity grid is not net-zero. Consequently, renewable electricity generation and other decarbonization strategies must be employed to meet the 2050 net zero emissions targets. Several key projects were started or completed in 2024 to support the reduction of GHG emissions in City buildings. Highlights of this work include:

- **Revision of the Green Building Policy to implement the City's updated net-zero corporate reduction target for 2050.** The newest version of the policy requires that new construction be zero-carbon (rather than zero-carbon ready). Additionally, the policy now ensures that GHG and energy requirements reflect the net-zero goal and includes an embodied carbon emission target and related projects.
- **Release of funding for the Waterloo Public Library McCormick Branch Library Renovation Project.** This funding will support the detailed design work of the Albert McCormick Energy and Accessibility Retrofit Project (COM2024-002) which will reduce the energy consumption and GHG emissions at the facility. Approximately \$2.4 million of the project budget was secured through the successful application to the Federal Government of Canada Grant under the Green and Inclusive Building Program (Phase 1). The energy and GHG reduction measures funded through the grant will include a new ice rink dehumidification system, heat and energy recovery, controls upgrades, LED lighting retrofits, electrification of hot water heaters, and building enclosure upgrades. The City is committed to achieving a minimum of 30% reduction in current GHG consumption, which equates to over 120 tonnes CO₂e¹⁰.
- **Partial release of funding to support the design and large-scale retrofitting for transformational projects at existing City facilities.** Funds from the Facility Transformational Projects (Ref #225) Capital budget (CARF funds) were released to support design fees that address a combination of infrastructure renewal requirements and GHG reduction measures at select City facilities that have been identified as critical in achieving the 2030 GHG reduction target (COM2024-016)¹¹.
- **Staff direction by Council to prepare an application to the Federation of Canadian Municipalities' (FCM) Green Municipal Fund Sustainable Grant Programs study stream.** If this grant is successful (application still pending at the time of preparing this report) this grant would support a GHG emissions reduction study at all four fire stations, Waterloo City Centre, Waterloo Park Service Building, and Waterloo Service Centre (COM2024-024).

¹⁰ Carbon Dioxide Equivalent.

¹¹ These facilities include Manulife Sportsplex and Healthy Living Centre (RIM Park), Moses Springer Community Centre (MSCC), Waterloo Memorial Recreation Complex (WMRC), Waterloo Public Library Harper Branch. Depending on scope, additional facilities may include Waterloo City Centre and Waterloo Public Library Main Branch. Specific measures will be refined during the design process, but GHG reduction measures will include electrification of existing Heating, Ventilation, and Air Conditioning (HVAC) equipment, electrification of domestic hot water equipment, energy recovery, LED lighting retrofits, and controls upgrades.

- **Submission of an application to the Government of Canada's Green and Inclusive Community Buildings Grant Third Intake.** If these grant applications are successful (application pending at the time of preparing this report) this grant would support GHG retrofit projects at RIM Park and Moses Springer Community Centre (COM2024-034).
- **Grant submission to the FCM Local Leadership for Climate Adaptation Initiative.** [This approved grant application](#) under the Adaptation in Action implementation stream will upgrade back-up electric power generation at various City facilities (COM2024-032)¹².
- **Replacement of traditional lighting with LED lights.** This was done during the refresh of Council chambers.
- **Expansion of the cold-water ice flooding program.** This initiative was advanced after a successful pilot at RIM Park in 2023.

2.6 Corporate Fleet and Equipment Update

Fuel used to power the City's vehicle fleet and equipment produces approximately 22% of corporate GHG emissions. Under the region-wide TransformWR strategy, the City is working towards a goal of transitioning 50% of the municipal fleet towards zero-emissions vehicles by 2030¹³.

Excluding Fire equipment, the City of Waterloo owned approximately 278 pieces of powered fleet equipment at the end of 2024¹⁴. Of this equipment, approximately 90 units currently have an EV, and 33 (or 37%) of those units are already EVs. In 2024 the City added an additional autonomous mower, e-bikes, electric vans, and other fleet equipment. Fire Rescue Services also replaced gas powered-extraction tools with battery operated alternatives and purchased trucks with idle-reduction systems. As fleet vehicles come up for renewal, they will continue to be replaced with EVs as appropriate and viable.

The lack of availability of specific equipment and the existing scheduled replacement date of fleet vehicles (often past 2030) are both barriers to meeting the 2030 50% EV replacement target. However, the City will continue to look at other options to work towards the target including converting gas vehicles to electric, reducing fuel use through the monitoring of telematic data, right-sizing fleet requests, and exploring vehicle pooling options.

¹² Fire Station 3, Parkview Cemetery, Manulife Sportsplex and Healthy Living Centre (RIM Park) and Waterloo Service Centre (WSC).

¹³ TransformWR Action 2.1.2: Plan and begin to implement a transition to zero emission vehicles for municipal fleets, working towards a goal of at least half of municipal vehicles being zero emissions by 2030.

¹⁴ The fleet inventory is dynamic and changes regularly. This is an approximate value at a point in time.

2.7 Additional Corporate Sustainability Progress Update

The City has undertaken actions that have contributed to a culture of sustainability, or which have embedded sustainability into processes, policies, and plans. Highlights of these initiatives include:

- **Participation of Fire Rescue Services in the Impact Network's Carbon Cleanse Challenge.** This challenge is an annual event hosted by Sustainable Waterloo Region's Impact Network program that encourages workplace teams to undertake weekly sustainability challenges for the month of October. Alpha Platoon, Bravo Platoon, Charlie Platoon, Delta Platoon, and Fire Prevention teams competed against each other and external teams with challenges such as riding a bike to work, calculating carbon emissions, and meatless meals. At the end of the challenge, the Fire Prevention team was declared the internal winner with the most points and challenges completed. City staff intend to expand this challenge to other teams in 2025.
- **Creation of an internal GHG learning module.** This module was created to provide staff with building blocks of mitigation, GHGs, and climate action knowledge. This training is mandatory for all new staff beginning in 2025.
- **Continued embedding of sustainability in daily operations.** This includes individual teams providing take-out containers for their events, purchasing from local businesses, carpooling, and bringing re-usable plates and cutlery instead of relying on single-use items.
- **Continued digitization.** Processes that staff and the community rely on have continued to migrate to digital services to reduce paper and travel requirements. Legislative Services has promoted corporate digital processes such as electronic license and permit applications, digital agenda distribution, electronic signatures, and various tools in OpenText which support electronic approval processes. In 2024, Corporate Communications started using the PageProof program which allows for more seamless review processes, increases efficiency, and reduces resource needs.
- **Integration of environmental information into internal staff resources.** This included the City's Employee Wellness Resources Guide.
- **Promotion of the City of Waterloo's Asset Management and Climate Change work in two AMONTario (Asset Management Ontario) case studies.**
 - Case study #1: "[The City of Waterloo's Collaborative Approach to prioritization](#)" praised the City's use of the Waterloo DSS system, streamlined planning process, collaboration and cross-functional teams, and preliminary integration of climate change in their analysis.
 - Case study #7: "[An Integrated Approach to Climate Change and Asset Management at the City of Waterloo](#)" highlighted the importance of integrating climate change considerations into everything the City does and moving away from the concept of applying a "climate lens".

3.0 Community Update

The community scope encompasses all the actions, monitoring and reporting which influence the community of the City of Waterloo, excluding corporate assets, staff, and activities. This includes residential buildings, transportation, businesses, community members, and natural assets. Municipalities have a large and unique ability to directly and indirectly influence community emissions through planning, by-laws, engagement, projects, and funding. Community climate work is largely governed by the regional community mitigation plan [TransformWR](#) and is supported by various other internal plans and policies.

3.1 Community Greenhouse Gas Inventory

The City of Waterloo is part of the regional climate collaborative Climate Action Waterloo Region (ClimateActionWR). As part of this collaborative, ClimateActionWR conducts the community GHG inventory for the entire region. The data is not disaggregated for each municipality. The most recent inventory was completed in 2024 (CAO2024-021) and presents the community GHG inventory data from 2022. There is standard two-year lag in community GHG inventories due to the time needed to obtain and calibrate the data from several sources.

The 2022 inventory observed a 12% reduction in community GHGs as compared to the 2010 baseline. This trend was further broken down into the following sectors:

- Emissions from transportation decreased 5.8% from 2019 to 2022. This represents a total decrease of 4% since 2010. Transportation is the single largest source of emissions (47.2% of total emissions in 2022). This reduction is attributed to a decrease in travel time and increased fuel efficiencies of vehicles.
- Emissions from buildings decreased by 9.3% from 2019 to 2022. This represents a total decrease of 26% since 2010. Buildings are the second largest source of emissions (45.4% of total emissions in 2022). A large portion of these emissions are from natural gas used to heat homes and can fluctuate because of annual temperature differences.
- Emissions from agricultural activities increased by 0.2% from 2019 to 2022. This represents a total increase of 4% since 2010. Agricultural emissions account for 5.8% of total emissions and are largely created outside of the boundaries of the City of Waterloo.
- Emissions from waste increased by 19.2% from 2019 to 2022. This represents a total increase of 16% since 2010. Waste emissions account for 1.5% of total community emissions.

While the community GHG emissions efforts have seen progress, City staff anticipate that meeting the 50% by 2030 community GHG reduction target will be challenging. There is still a considerable amount of work to be done to see the intended decrease in emissions, and that will require additional resourcing as well as changes and action from external partners. There are also concerning emerging barriers to community work

including rising global uncertainty, population growth¹⁵, and competing resident and City priorities. City staff will continue to work with ClimateActionWR and external partners to create the transformative changes that need to happen to advance progress towards community GHG emissions reduction goals.

3.2 TransformWR Plan Update

[TransformWR](#) is a regional community-level GHG mitigation plan endorsed by all eight area municipalities in 2021 (CAO2021-011). As part of this work, the City of Waterloo is an official partner of the regional climate collaborative ClimateActionWR and works in tandem with the other local area municipalities, energy providers, and other organizations to reduce community emissions. TransformWR has 78 actions divided into six Transformative Changes. The City is listed as a Lead, Collaborator, Participant, or Support for 31 of these actions. Of these 31 actions, the City has begun or completed over two thirds of the actions. Table 3 provides a high-level summary of the current progress of the actions, separated into six Transformative Changes. A full summary of the City's progress to date on these actions can be found in Appendix E.

The City has made promising shifts in planning and policy that are anticipated to support long-term emissions reductions, such as a focus on infill development and building complete communities. The addition of a new Sustainability Officer resource has also provided additional staff capacity to focus on community mitigation work. Despite this, work on this scale is resource-intensive and requires consistent collaboration and prioritization amongst the area municipalities, and staff anticipate that targeted resourcing and time will be required to complete all the actions in TransformWR by the 2030 target date.

¹⁵ The 2030 community GHG targets are based on an absolute number and do not account for the changes in emissions per capita. As the City grows, it will become more challenging to reduce absolute emissions while accommodating the home, transportation, and resource needs of new residents.

Table 3 High-level summary of the status of TransformWR actions

	Not yet initiated	In progress	Complete	Total
Transformative Change 1: By 2050, most trips are taken using active transportation, with the support of a robust transportation system.	4	6	2	12
Transformative Change 2: By 2050, remaining personal and commercial vehicles are zero emission vehicles.	1	4	0	5
Transformative Change 3: By 2050, businesses and homes no longer use fossil fuels for space heating and cooling, and hot water heating.	1	3	0	4
Transformative Change 4: By 2050, Waterloo Region uses less, wastes less, and no longer disposes of organic matter in landfills.	2	0	0	2
Transformative Change 5: By 2050, Waterloo Region has a thriving local food system built on local farming and food production and processing that feeds much of our community.	0	1	1	2
Transformative Change 6: By 2050, Waterloo Region has leveraged reducing GHG emissions to increase equity, prosperity, and resiliency for all.	3	3	0	6
Total	11	17	3	31

In 2024, ClimateActionWR completed the creation of a new governance structure that expanded the reach and engagement of community mitigation work. The new governance structure brought in voices from across the community that could provide new and insightful perspectives to the work and provide guidance on action implementation going forward. This new structure also included the creation of Action Teams to accelerate specific actions and projects on a community scale across the region.

3.3 Planning Policy Update

The City continues to integrate concepts of sustainability and climate change adaptation and mitigation into planning documents and principles. This type of integration has the potential to influence long-term positive change on a community-wide scale and facilitate accessible and sustainable communities. Highlights of planning changes include:

- **Inclusion of several aspects of sustainable and climate change planning in Phase 1 of the Official Plan Review.** The Official Plan provides city-wide direction on growth management, land use planning, and development related matters over a timeframe of 20+ years and is a vital component of the creation of sustainable and resilient communities. Changes include but are not limited to:
 - The updating of policies that enable and encourage complete communities, which provide for walkable and accessible neighbourhoods with a diverse range of uses.
 - The updating of the City Form chapter of the Official Plan to allow taller buildings within Major Transit Station Areas to enable transit-supportive communities.
 - The updating of the Residential policies to allow for a more diverse range and mix of housing options, including allowing for additional units in low rise residential areas to support compact and accessible communities.
 - Supporting access to locally grown food and urban agriculture.
 - Enabling a modal shift to most trips being made by walking, cycling, and rolling.
 - Creation of a new land use designation for Major Transit Station Areas called “Station Area Mixed Use,” which allows for a full range residential, commercial, community and employment uses. The new designation located on large former single use sites, encourages complete and walkable communities, located near rapid transit.
 - Strengthening of Official Plan policy direction by updating resilience, low-carbon, sustainable, environmental, and climate change policy wording throughout the Plan including the Vision, Principles, and Objectives sections of the Plan.
- **Incorporation of sustainability measures into the planning of the 2025 University East Housing Project.** The City is working toward an agreement with a non-profit builder to create a compact and mixed-use affordable housing development. The development will conserve a significant wetland, along with appropriate buffers to the wetland and an offsite significant woodland on the adjacent property. Site design will be required to achieve a high level of environmental performance. Additional measures that are being considered for the site include various transportation demand measures, car sharing, additional secure bike parking, and on-site energy generation. The City is also advocating to the Region for enhanced transit services to support the development.
- **Support for the creation of harmonized High-Performance Development Standards (HPDS).** The development of the HPDS is being led by Waterloo Region Community Energy (WRCE) with City staff supporting the creation of standards and metrics. These standards will embed the energy transition and climate resilience into the planning approval process.

3.4 Community Active Transportation Update

The City continues to encourage the use of active transportation as a viable, safe, accessible, and fun alternative to traditional motor vehicles. In 2024, the City added 500 m of new sidewalk, 450 m of new off-road trail, and 275 m of new multi-use path (in the boulevard). In addition, 280 m of sidewalk on Seagram Drive was widened from 1.5 m to 2.1 m, 1.8 km of offroad trails were resurfaced, and 400 m of multiuse path was resurfaced. Other steps made towards increasing the safety and use of active transportation include:

- **Hosting of educational pop-up events.** These events were hosted by the Active Transportation team to educate residents on cycling infrastructure and resources in the City.
- **Recognition of the City of Waterloo as the #1 City in Ontario for bike networks and the #11 City in Canada.** This recognition was by PeopleForBikes, a non-profit trade group dedicated to promoting cycling infrastructure and policy. This indicates that the City is one of the most connected places for cycling in Canada.
- **Hosting of the 15th annual Ontario Bike Summit.** The April summit, which was first launched in Waterloo in 2009, drew in delegates from across Canada and internationally to share ideas, best practices, and advocate for progressing cycling across the country.
- **Conversion of the Forwell Creek sidewalk to a multi-use pathway.** This was done as part of the Trail & Bikeway Master Plan initiatives.
- **Construction of a new trail that connected the St. Moritz Park to the Generation Park lands.** This initiative increased active transportation connectivity of the area.

3.5 Community Adaptation and Sustainability Update

Increasing the sustainability and resilience of the community to the impacts of climate change such as increased extreme heat and flooding events is crucial to ensuring that current and future generations can continue to safely thrive. Adaptation actions can range from large municipal planning exercises to individual household decisions. Examples of progress made towards creating a resilient community include:

- **“Beating the Heat” by hosting a neighbourhood water play activity.** This event was held by the Mary Allen Neighbourhood Association in the summer when it was too hot to host regular events and included mist tents, water splash balls, water blasters, water play tables, extra shade tents, and water games.
- **Awarding of the supply and installation of two splash pads at Blue Beach Link and Eastridge Green.** This was done as part of the 2008 Recreation and Leisure Services Master Plan. These splash pads will help residents stay cooler in the summer.
- **Evaluation of the impacts of climate change on sewer system infrastructure.** This was done through additional modelling and analysis for

higher intensity rainfall conditions as part of the City of Waterloo Sanitary Master Plan Update (IPPW2024-024). This included a stress-test performed on the system using the 25-year, 3-hour Chicago storm event with an increase of 20% rainfall intensity and validation through the City's monitoring work.

The Waterloo Public Library (WPL) has continued to provide sustainable services and education to residents. Highlights include:

- **Launching of a seed library.** This initiative distributed over 9,500 seed packets to residents.
- **Addition of sports equipment and lawn games to the collection at the McCormick Branch.** This allowed residents to loan out sports equipment instead of buying. The location was partially selected because of the availability of sports spaces within walking distance of the branch.
- **Investment in Kanopy.** This is a digital streaming service to meet the video/TV needs of customers while reducing the number of non-recyclable physical copies of movies and TV shows bought every year.
- **Hosting of a series of sustainability-focused Author Talks.** These talks included:
 - A discussion with Author Nicola Ross author of *Travel the Bruce Trail in a Day*.
 - A Discussion with Author Nadina Galle author of *The Nature of our Cities*.
 - A Discussion with Leah Reesor Keller author of *Tending Tomorrow*.
- **Awarding of a Jane Goodall Roots and Shoots Grant.** This was used to design and host an event focused on nature learning restoration at the Eastside Branch.
- **Coordination of several sustainability and climate change library programs.** This included RIM Park Trails Birds Walks, early learning nature-based programming (Where the Wild Things Are), Repurposed Garden Markers Workshop, beekeeper-led workshop (Meet the Bees, Wonders of Beeswax), four sessions of Red Raccoon Bike Repair, and a celebration of the Library Oak Tree which won Reep Green Solutions' tree of the year.

3.6 Sustainability and Climate Change Engagement Update

The City had several opportunities to engage with the community on sustainability and climate change topics. Highlights include:

- **Hosting of a Community Conversation on Environmental Sustainability and Climate Action.** Community Conversations is an initiative that is part of the ongoing implementation of the City's 2023-2026 Strategic Plan. This event was held in June 2024 and featured representatives from over 40 members of the local sustainability community including the post-secondaries, advocacy groups, the energy sector, school boards, and non-profits. It featured panel discussions, presentations, and roundtable engagement on the City's current and future climate change adaptation and mitigation goals.

- **Hosting of a Community Conversation on Infrastructure and Transportation Systems with a focus on sustainable infrastructure.** A second Community Conversation was held in November 2024 with representatives from across the development industry. A lot of important feedback was shared including the identification of challenges associated with trying to address the housing crisis and as a result, sustainable infrastructure can be difficult to prioritize.
- **Integration of sustainability in the 2024 Community Neighbourhood Summit hosted by Community Planning and Outreach Services.** The event featured passionate speakers who discussed pollinator gardening, permeable pavements, and actioning sustainable change locally. The event focused on being low waste and included food packaged with bamboo leaves, a green bin and compostable plates, utensils, and napkins, renting of reusable trays, and name tags that dissolved in water.
- **Merging of art and a love of nature into the annual Lumen festival with the “Tree” Love Exhibit.** Artists ZEM entwined a light display within a living tree that responded to human touch. By merging technology with the organic, the installation transformed a living tree into a canvas of emotions. The play of light became a universal language, narrating the intricate story of our interconnectedness with the environment. Residents could activate the installation by hugging the tree, which would light up. This exhibit was a collaboration between Strategic Initiatives and Arts and Creative Industries.
- **Continued neighbourhood and park stewardship activities throughout the City.** These activities were carried out through partnerships with various divisions and with the support of dedicated volunteers. As part of the Bee City initiative, City forestry and horticultural staff planted 826 street trees, 181 park trees, hundreds of annual bulbs and maintained Victoria Gardens and the Butterfly Gardens in Waterloo Park, both of which contain hundreds of bee and butterfly friendly pollinators. The City’s Pollinator Working Group participated in several local events as an exhibitor and provided fun and informational activities on creating healthy habitats for pollinators. As part of the long-standing Partners in Parks Program, residents and staff helped maintain parkland through activities such as bird house maintenance, litter clean-ups, invasive species management, planting and maintaining a garden bed, and much more. During the annual Earth Day clean-up, the City saw over 1,000 volunteers lending a hand to remove 300 bags of litter. Additional information can be found in the [2024 Stewardship Summary](#) report.
- **Climate change and the environment were key themes during the three-year budget discussions with the community.** Throughout the budget process, there was a range of opinions expressed regarding the City’s budget allocation on climate change work (CORP2024-005).
- **Opening of two new community gardens.** These new community gardens were located in Laurelwood Park and Dunvegan Park.
- **Distribution of several grants to local community members and groups to enable sustainability work.** These included grants for pollinator seed giveaways, providing education on harvesting seeds, community garden closing workshops, and nature-based art that used local reeding in a weaving project.

4.0 Partnerships and Collaborations

The City of Waterloo is fortunate to be the home of several post-secondary institutions, non-profit organizations, and community groups who all do work related to climate change. Through 2024, the City continued to strengthen these ties and invest in collaborating locally to meet collective climate change goals. The City continues to fund and collaborate with ClimateActionWR, WRCE, Sustainable Waterloo Region (SWR), and Reep Green Solutions in areas of community mitigation, energy, and resilience.

City staff have also had the opportunity to work with post-secondary students on various local research projects. Examples include:

- ***Methods to Encourage Public Transit Use*** (University of Waterloo, undergraduate class).
- ***Exploring Sustainable and Effective Practices to Encourage Lower Levels of Car Usage Surrounding School Zones in the City of Waterloo*** (Laurier-City Hub, undergraduate class and internship).
- ***Combating Eco-Anxiety Surrounding Climate Change Messages*** (University of Waterloo GreenHouse Program in partnership with an undergraduate class).
- ***Addressing Urban Heat Impacts from Climate Change on a Municipal Scale*** (University of Waterloo, undergraduate class).
- ***Investigating Heat Canopy Inequity in the City of Waterloo*** (University of Waterloo School of Planning collaboration as part of the City's ongoing Urban Forestry Management Strategy work).
- ***RISE-Residential Development Impact Scorecard for the Environment*** (University of Waterloo Research Project).
- ***City of Waterloo Ground Temperature Heat Map*** (University of Waterloo, Graduate Research Project).

The Strategic Initiatives division also had multiple opportunities to connect and present to various staff, students, and partners through the post-secondaries. In May 2024, staff led a presentation hosted by the Waterloo Climate Institute to promote the climate change work being done at the City and highlight the interconnectivity of that work with the Strategic Plan. Later in the year, the division also met with sustainability representatives from the University of Waterloo, Wilfrid Laurier University, and Conestoga College to discuss how to collaborate on sustainability initiatives and leverage the strong existing relationships to best adapt to and mitigate against climate change.

Additionally, a summer co-op student from the University of Waterloo joined the Strategic Initiatives division in 2024. They were critical in supporting the success of the Community Conversation on Environment Sustainability and Climate Action and supported the implementation and tracking of CorCAP and TransformWR actions.

Internally, work is supported by the Environmental Sustainability Team (EST) and the Sustainability Advisory Committee (SAC). EST is a staff group comprised of members from various divisions across the City who help to guide, support, and implement the City's climate change work. They enable the dissemination and coordination of actions through their diverse roles and provide a comprehensive perspective on how the work may fit with existing projects and priorities. SAC is an Advisory Committee of Council comprised of members of the public and post-secondary students. In addition to advising Council on sustainability-related matters, SAC has been invaluable in reviewing work, advancing new ideas, and providing a different perspective.

5.0 Advocacy Update

Climate change is a global problem that requires cooperation and support from all levels of government. Municipalities are uniquely situated to implement mitigation and adaptation solutions, but they cannot do so without significant support from provincial and federal levels of government. In 2024, the City of Waterloo advocated for that support through several advocacy initiatives, including:

- Advocacy for an ongoing commitment to climate adaptation and mitigation from the province through the City's 2024 pre-budget submission. This submission asked for the province to support the City's efforts in reducing GHG emissions.
- Advocacy to the Minister of Transportation on the significant impacts that Bill 212 (*Reducing Gridlock, Saving You Time Act, 2024*) will have on the City's ability to represent the community's needs. Waterloo's active transportation networks provide safe and reliable transportation options that play a crucial role in supporting climate change initiatives by reducing GHG emissions and fostering sustainable urban environments.
- Advocacy to the province on the creation of a working group to study and reconsider current design standards that will facilitate timely approval and installation of safe, secure active transportation corridors over Ministry controlled roadways. This work supports previous advocacy the City has done on protecting active transportation networks and reiterating how important they are to creating green communities and the City's overall work to reduce GHG emissions. This work and the creation of the working group remain ongoing.

6.0 Looking Ahead

2024 saw a significant acceleration of action implementation and a continued focus on capacity building, engagement, and partnerships. Over the course of the next year, the City intends to keep building on this momentum and pushing forward on initiatives to reduce the GHGs and increase the resiliency and sustainability of the corporation and community. Key focuses for the next year include:

- Delivery of a comprehensive update of the CCCAP and a transitional refresh of the plan to better reflect advances in the work and current conditions. This update will be critical as the Strategic Initiatives division begins to look ahead to

the next evolution of policy framework to take the City past its 2030 climate change targets.

- Continued leveraging of the new Sustainability Officer position to implement the actions in the CorCAP with a focus on the short-term actions to be completed in 2026. The medium and long-term actions will remain a priority and are critical to achieving the goals identified in CorCAP.
- A shift in focus from progress updates on the climate change work completed in 2024 and the CCCAP to implementation of actions to make significant progress on the actions contained in TransformWR.
- Integration of sustainability principles in the planning and execution of the 2025 University Avenue housing project.
- Continued advocacy to provincial and federal levels of government for funding that reduces GHG emissions and supports municipal climate adaptation, and additional sustainable standard design principles.
- Continued expansion of the active transportation network, retrofitting of corporate buildings, and conversion of fleet vehicles to EV.
- Continued work directed at strengthening the relationships with community partners with a goal of working together to achieve collective climate change goals.

The need for accelerated and collaborative action towards reducing greenhouse gas emissions and adapting to the impacts of climate change continues to be on the forefront of social, political, and economic discussions. There is a greater awareness and understanding for the need to collaborate, not only between levels of government, but also among individuals, private industries, post-secondaries, non-profits, school boards, and community organizations. From the way communities are planned, to the food we eat, to the roads we design, the world can no longer afford to continue operating in silos.

Climate change is often painted as a largely environmental issue, but as the understanding and reach of the impacts continue to grow, so does the need for consistent and open collaboration. The cost of goods, the maintenance of infrastructure, the availability of food, the biodiversity of systems, the resilience of the economy, and the safety of people have all begun to see direct and indirect impacts of a changing climate.

Despite current global uncertainties, it remains everyone's responsibility to create a sustainable world for future generations. Local municipalities like the City of Waterloo must continue to undertake and lead consistent and long-term actions to mitigate and adapt to climate change, and to create a community where future generations are safe to live, work, play, and learn.

Appendix A: 2024 Sustainability and Climate Change Financial Update and Grant Submission Summary

Climate Action Reserve Fund

In December 2022, Council established the Climate Action Reserve Fund (CARF), a governing policy, and an ongoing annual funding contribution to facilitate projects, initiatives, and studies that support climate change mitigation and adaptation by targeting energy and GHG reduction in alignment with the Council approved targets.

In 2024, CARF funding was used to fund several 2024 budgeted projects, as outlined in Table *Table 3*.

Table 3 2024 CARF Funded Projects

Ref	Project	CARF	Other Funding (CIRRF, CRF, ER)	Total
142	Community Climate Action Plan- TransformWR Implementation	\$212,000		\$212,000
144	Corporate Climate Change Adaptation Plan Implementation	\$533,000		\$533,000
145	Electric Vehicle Charging Program	\$303,000		\$303,000
146	Grant Opportunities	\$80,000	\$372,000	\$452,000
224	Energy Management and Regulatory Reporting	\$74,000		\$74,000
225	Facility Transformational Projects	\$250,000		\$,250,000
226	Green Building Policy Implementation	\$531,000		\$531,000
420	Fleet Green Strategy and Implementation	\$53,000	\$160,000	\$213,000
	Total	\$2,036,000	\$532,000	\$2,568,000

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). Recent policy updates via the Reserves and Reserve Funds Annual Updates report and the 2024-2026 Budget and 2027-2033 Capital Forecast approved on February 12, 2024, included a number of changes to augment the CARF balance for this important work:

- Redirecting \$100,000 in 2024, \$50,000 in 2025, and an additional \$50,000 in 2026 to increase the ongoing annual funding for CARF.
- Increasing the budgeted annual contribution each year by an inflationary factor (B18-TRAN.2024.007), aligning the inflationary impacts for both the contribution to CARF and the budgeted capital projects.

For 2024, with the above changes incorporated, the annual budgeted contribution from operating increased by \$156,732 over 2023 (\$918,000), to total \$1,074,732. This contribution will continue to increase each year.

In addition, 25% of any annual property tax operating surplus, Enova dividend investment surplus, and general investment surplus will be transferred to CARF. While these amounts will vary from year to year, any contributions will further support the growth of the CARF balance for future projects. For 2023 year-end, this combined to provide CARF an additional \$1,486,000 in funding, with another \$1,500,000 estimated for 2024 year-end.

Sustainability Officer

To better position the Strategic Initiatives division to progress on the actions to reduce the community and corporate greenhouse gas (GHG) emissions and to enable the City to meet its climate change targets in addition to other initiatives led by this division, a new contract resource position was created in 2024. This contract position was funded through the partial repurposing of existing approved capital funding (ref 142 and 144), Strategic Initiatives operating dollars (M11-CAO.2024.013), and an allocation from the Employee Development and Capacity Building Reserve contract budget approved by Council through budget request B28-CORP.2024.004.

Grants Submissions and Funding Opportunities

Progress on sustainability and climate change work cannot be done without assistance from upper levels of government. Staff continuously monitor available grant programs to further this work. As it is often resource-intensive to apply to these programs, staff evaluate the programs for the best return on investment (ROI) and strategic alignment. In 2024, the City applied for 8 grants related to this work, as detailed in *Table 4*.

Table 4 Sustainability and climate change grant application summary for 2024

Grant Program	Council Report	Status	Funding	Funding Agency
2024 Reforestation Grant	N/A	Approved	\$50,000	Enova Power
Growing Canada's Community Canopies Initiative	COM2024-030	Pending	\$1,900,000	Federation of Canadian Municipalities Green Municipal Fund
Local Leadership for Climate Adaptation (LLCA) initiative	COM2024-032	Approved	\$600,000	Federation of Canadian Municipalities Green Municipal Fund and Government of Canada
FCM GMF Sustainable Municipal Buildings GHG Study grant program	COM2024-024	Pending	\$200,000	Federation of Canadian Municipalities Green Municipal Fund
FCM GMF GHG Reduction Pathway Feasibility Study grant program	N/A	Pending	\$200,000	Federation of Canadian Municipalities Green Municipal Fund
Green and Inclusive Community Buildings Program (GICB) third intake– Medium Stream MSCC	COM2024-034	Pending	\$4,400,000	Government of Canada
Green and Inclusive Community Buildings Program (GICB) third intake – Large Stream RIM	COM2024-034	Pending	\$11,000,000	Government of Canada

CSRIF - Stream 1: Repair and Rehabilitation	COM2024-037	Pending	\$775,000	Province of Ontario
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*Note - At times, the City of Waterloo may be successful with grants, the awarding of which may remain confidential until a formal announcement has been made in coordination with the granting agency.

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 Centre
- **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
- **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 (CARF)
- **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 approved 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
 - Climate change considerations are integrated in the 2024 Asset Management Plan and the 2024 Official Plan Review – Phase 1

Appendix C: Corporate Climate Action Plan Progress Summary

Table 4 to Table 7 provide a high-level summary of the work done to date on the actions of the CorCAP divided into Buildings and facilities actions, Short-term actions, medium-term actions, and long-term actions.

Table 5 Buildings and facilities action status summary

Action	Status	Additional context
1) Continue to convert natural gas fuelled heating systems to electrically powered heating systems.	In progress.	
2) Continue to implement the City of Waterloo's Green Building Policy.	In progress.	
3) Ensure that all new iterations of the City of Waterloo's Green Building Policy and any future corporate plans or greenhouse gas modeling align with the corporate 2050 net-zero target.	Complete.	A revision to the Green Building Policy was approved by Council in 2024 (COM2024-010). The revised policy implements the more aggressive corporate reduction target of net-zero by 2050 (as compared to the previous 80% by 2050) set by Council in 2023.
4) Continue to replace equipment at failure with GHG/energy efficient improved performance equipment.	In progress.	
5) Continue to implement energy efficient systems when major building systems (e.g., roofing, cladding, windows, mechanical, electric controls) reach their end of life or require a major overhaul.	In progress.	

Table 6 Short-term action status summary

Action	Status	Additional context
6) Implement a large-scale public awareness and education strategy focused on the sustainability and climate change work done by the City.	In progress.	<p>The City's Sustainability and Climate Change webpage (previously the Environment webpage) was significantly redeveloped in 2024 to update the public on the latest progress the City is making towards its mitigation and adaptation goals.</p> <p>The webpage also provides links to all the relevant City strategies, plans, and reports and additional resources on how residents can get involved with the work.</p> <p>Several divisions also promote sustainable principles such as active transportation and environmental protection through their own events and engagement.</p> <p>In June of 2024 the City hosted a Community Conversation on Environmental Sustainability and Climate Action which featured engagement and discussion on the City's current and future climate change work. The event was attended by over 40 local sustainability representatives from diverse organizations within the City.</p>
7) Formalize the internal decision-making process regarding available funding for corporate sustainability and climate change initiatives.	Complete.	<p>The Director of Strategic Initiatives has been designated as the project manager for the CARF funds. Large funding requests will also be discussed on a case-by-case basis with the Environmental Sustainability Team (EST) and will follow all the existing procurement procedures.</p>

8) Advocate to the provincial and federal government for funding and legislative changes.	In progress.	The City has or is currently advocating to the provincial and federal governments regarding climate change mitigation and adaptation, safe active transportation, and green building funds. Please see section 5.0 of this report for more information.
9) Create and distribute an internal educational list of potential mitigation actions that could benefit from sustainable funding streams or subject matter expertise.	In progress.	Through regular staff engagement, communications distributed by the internal EST, and grant opportunity reviews and discussions, staff have begun to increase internal knowledge on the relationship and opportunities between climate change and existing work. This will continue to be expanded and formalized.
10) Continue to build on the progress of the creation of the Climate Action Reserve Fund (CARF).	In progress.	Several policy changes approved by Council have resulted in an increase to the CARF. Please see Appendix A for more information.
11) Actively seek external funding for sustainability and climate change work.	In progress.	Seven grants related to sustainability and climate change were applied to in 2024. Please see Appendix A for more information.
12) Outline and report which scope 3 emissions will or will not be considered by the City of Waterloo.	In progress.	The City reports corporate GHGs annually through a partnership with the Impact Network, including specific Scope 3 emissions. Staff are clarifying and creating a procedure on future reporting.
13) Continue to leverage debenture financing in support of increased climate action investment.	In progress.	The approved 2024-2026 Capital Budget and 2027-2033 Capital Forecast includes \$10 million for the Facility Transformational project (ref #225), funded by debenture.

14) Create a GHG mitigation goal and roadmap for small equipment used for City operations and maintenance.	In progress.	<p>A preliminary inventory of small equipment used in City operations and maintenance is being undertaken by staff. Individual divisions, such as Parks, Forestry, and Cemetery Services, are and continue to switch their equipment to electric where applicable and practical.</p> <p>A preliminary inventory of small equipment used by Parks, Forestry and Cemetery Services for City operations has been initiated by staff as a first step of this action. All divisions are encouraged to and continue to transition small equipment to electric where applicable and feasible.</p>
15) Determine an internal decision-making structure for greenhouse gas reduction projects.	Not yet initiated.	
16) Increase employee knowledge on all the different ways they can safely commute to various City buildings.	Not yet initiated.	
17) Explore the potential of cross-departmental sharing of zero-emissions vehicles.	In progress.	<p>Vehicles that are primarily used by a division seasonally through the year, such as during the warmer or colder months, have been previously loaned to other divisions for their use during off-peak months.</p> <p>Staff are currently investigating the need and feasibility of an internal car-pooling system.</p>

18) Right-size fleet.	In progress.	<p>Requests for each new or replacement City vehicle undergo a right-sizing exercise to determine if the vehicle is a proper fit for the intended role. For example, in 2024 the City decided to rent rather than purchase a front loader due to limited need.</p> <p>Newer types of vehicles, such as electric bikes, have also been added to the City's fleet.</p>
19) Improve fleet and equipment tracking.	In progress.	<p>Reports on vehicle performance and use are continuously pooled and monitored to ensure proper utilization.</p>
20) Explore opportunities to reduce vehicle use during regular City operations.	In progress.	<p>Many vehicle trips have been reduced due to the increased use and adoption of virtual meetings. This includes activities involving staff, leadership, the public, and elected officials.</p> <p>Accommodations to work-from-home brought on by the Covid-19 pandemic have continued to be implemented with applicable City staff and significantly reduced the emissions from daily commuting.</p> <p>Use of telematics software is allowing for the increased efficiency in route optimization for winter control equipment. This is resulting in less redundancy of service and greater fuel savings.</p>
21) Explore further opportunities to transition annual floral displays to perennials.	Not yet initiated.	

22) For annual reporting purposes (e.g. the Sustainability and Climate Change Update Reports) ensure the distinction and inclusion of both greenhouse gas and energy reductions/increases for the City.	Not yet initiated.	
23) Determine the feasibility of doing an assessment on GHG retrofits of wastewater pump stations.	Not yet initiated.	
24) Provide employee training for energy efficiency.	Not yet initiated.	
25) Provide employee training for efficient driving.	Not yet initiated.	
26) Integrate Sustainability and climate change wording into job postings.	Not yet initiated.	
27) Create 'green event' guides for all City hosted, endorsed, and sponsored events. This includes:	In progress.	Staff are currently developing an internal events guidance document that will incorporate suggestions for how to increase an event's sustainability and accessibility. This project is being done in partnership between Strategic Initiatives and Reconciliation, Equity, Accessibility, Diversity, and Inclusion (READI).
28) Embed sustainability and climate change as part of departmental and divisional staff meetings.	Not yet initiated.	
29) Continue to review the potential of limiting grass mowing in areas that could be replaced with perennial gardens, meadows, or naturalized.	In progress.	There is an ongoing Park Reclassification project to increase the accuracy of park land classifications which will allow for more precise and flexible naturalization.

30) Create division-use accounts for the ION, GRT, Neuron, and any other widely available modes of active or public transportation.	In progress.	This program is currently under development with an anticipated pilot launch date of Q2 2025.
31) Define City policy on consideration of sequestration sources in possible carbon accounting and possible future carbon budgeting activities.	In progress.	City staff are working with the University of Waterloo on a preliminary research project and environmental scan into this topic.
32) Implement sustainability and climate change considerations into all applicable How-to guides available on the City of Waterloo's neighbourhood's webpage.	In progress.	Climate change considerations are being implemented into community guidance documents as they are updated. Most recently this includes the newest addition of the " Becoming a Prepared Neighbour " guide, updated in 2024.
33) Explore further opportunities to promote programs to reduce the amount of congestion at school drop-offs.	In progress.	The Active Transportation Team works with the Student Transportation Services of Waterloo Region and collaborates on several programs to reduce vehicle use and increase students taking active transportation.
34) Partner with Enova Power and Waterloo Region Community Energy (WRCE) to increase the general literacy of the City's energy system and transition plans among staff.	Not yet initiated.	
35) Incorporate sustainability and climate change into neighbourhood newsletters and events.	In progress.	The City provides messaging around various sustainability and climate change topics through several channels. City staff are working on streamlining and ensuring consistency in this messaging. Staff are currently preparing materials to be incorporated as a "Green Section" in neighbourhood newsletters.

36) Communicate the location of all dog waste bins.	In progress.	A full list of dog waste disposal units can be found on the City's Animals and Pets webpage.
37) Encourage neighbourhood green representatives.	In progress.	City staff engaged with community members on this topic at the 2024 Neighbors Summit. The information gathered is being used to inform community mitigation and adaptation initiatives.
38) Create education for residents on the ways that they can green their homes under established by-laws and existing programs.	In progress.	The City is a funding partner of Reep Green Solutions which provides information and education for residents on improving their homes sustainability. Staff will supplement this engagement with Waterloo-specific by-law information.
39) Conduct a review of all City by-laws and propose amendments that would allow residents to increase their own sequestration potential or decrease their emissions.	Not yet initiated.	
40) Continue to support private tree planting campaign efforts.	In progress.	The City provides funding to Reep Green Solutions to provide subsidized tree consultation, planting, and guidance services for residents.
41) Continue to conduct an urban tree canopy study.	In progress.	This action is being completed as part of the Urban Forest Management Strategy with an anticipated completion date of 2025.
42) Install a poop power bin in Uptown Waterloo.	Not yet initiated.	

Table 7 Medium-term action status summary

Action	Status	Additional context
43) Create a corporate electric vehicle charging strategy.	In progress.	Staff are currently conducting a review of the City's EV charging needs and developing an inventory of existing vehicles, equipment, and chargers.
44) Develop economic development resource guides for various sectors related to sustainability and climate change.	Not yet initiated.	
45) Create training and information materials for incoming members of Council and leadership.	Not yet initiated.	
46) Provide consultants and contractors with the City's carbon reporting expectations for projects.	Not yet initiated.	
47) Create an internal accountability system for staff.	Not yet initiated.	
48) Use existing opportunities to connect with staff on sustainability and climate change issues using tailored materials and messaging.	In progress.	Staff in all divisions are engaged annually regarding their sustainability and climate change work which is then presented as part of the Sustainability and Climate Change Update Report. This has shown to be an effective foundation for increasing staff input and knowledge on how climate change may impact their roles.
49) Investigate a mileage reimbursement initiative for non-vehicular transit alternatives as personal sustainable travel during work activities.	Not yet initiated.	
50) Propose a green grant for mitigation-related community projects.	In progress.	Staff are currently creating a grant policy proposal for Council's review and approval. It is anticipated the grant will be brought to Council in Q3 or Q4 2025.

Table 8 Long-term action status summary

Action	Status	Additional context
51) Develop a green purchasing strategy.	Not yet initiated.	
52) Integrate climate change and energy into all major community and corporate plans.	In progress.	Several plan updates have included considerations of climate change and sustainability including the 2024 Asset Management Plan (CORP2024-18) and the Official Plan Amendment 58 (IPPW2024-061).
53) Create a high-level pathway to net-zero by 2050 for all corporate emissions not considered in the Corporate Greenhouse Gas and Energy Roadmap-Phase 1 (CORP2022-013).	Not yet initiated.	
54) Create a process to monitor embodied carbon from construction projects.	In progress.	The Green Building Policy includes considerations of embodied carbon for City-owned buildings.
55) Create an internal process to embed emissions considerations into selected City projects.	Not yet initiated.	
56) Ensure that any City facilities that have food services or can be reasonably expected to host large events where food will be served have adequate compost facilities.	In progress.	The City is creating an internal events guide which will include information on sustainable food and composting for City events. This will be the foundation of this action.
57) Create a City policy on the holistic evaluation of the environmental impacts of equipment switching.	Not yet initiated.	
58) Ensure consistency in garbage disposal across City facilities.	Not yet initiated.	
59) Continue to monitor and evaluate the progress of carbon budgeting as a GHG reduction mechanism in other municipalities.	In progress.	Staff continuously monitor the work of other municipalities nationally and globally. They have consulted with the City of Edmonton who have completed a carbon budget and the Region of Waterloo, who are currently conducting one.

60) Continue the implementation of the Environmental, Social, and Governance Investment Framework.	In progress.	Council approved the addition of ESG investments to our portfolio (up to \$10 million dollars) as part of the Investment Policy Update approved on February 28, 2022. The City invested in its first ESG (environmental, social, governance) investment instrument in early 2023. A GIC was developed by Kindred Credit Union in partnership with Waterloo Region Community Foundation (WRCF). Its goal is to help affordable housing projects become a reality by making low-cost capital available in a timelier fashion. The City invested \$1 million dollars in 2023 in a Kindred GIC to help seed this, and a further \$1.5 million in 2024.
61) Review alternative building materials for construction projects.	In progress.	IN 2022 the City adjusted its “like-for-like” approach to replacing end-of-life assets with “like for modern equivalent” which will allow staff to adjust to changing needs and available technologies.

Appendix D: Corporate Climate Change Adaptation Plan Progress Summary

Table 8 to Table 15 provide a high-level summary of the work done to date on the actions of the CCCAP. The information is divided by goal.

Table 9 Goal 1: Create conditions to minimize health and safety risks to outdoor workers and community members action status summary

Action	Status	Additional context
1.1 Map areas vulnerable to heat extremes and use mapping to inform planning and programming initiatives.	In progress.	<p>A ground surface heat map for the City of Waterloo was created by researcher Dr. Peter Crank from the University of Waterloo in partnership with Parks, Forestry and Cemetery Services. This work was conducted as part of the Urban Forest Management Strategy and presented to Council as a delegation on November 18, 2024.</p> <p>Shade is also continuously incorporated into capital projects, and as temperatures increase, there has been a renewed focus on the importance of shade trees and shade structures in public spaces.</p>
1.2 Continue to carry out outreach activities that target vulnerable populations during extreme heat and cold events.	In progress.	Select City buildings are open to the public as warming and cooling spaces.
1.3 Update the Emergency Circumstances/Extreme Weather Policy and the Heat Stress/Cold Stress Policy to account for climate change impacts.	In progress.	<p>The City has several emergency and business continuity plans that are regularly updated to include new information and best practices. There are specific policies and procedures in place for employees who work in areas vulnerable to extreme heat and cold.</p> <p>Several City staff members are also a part of the Waterloo Region Heat, Cold and Air Quality Network which meets biannually to discuss responses to extreme weather. In</p>

Action	Status	Additional context
		<p>2024 the group added “Air Quality” to its name to reflect the new reality of wildfire-related smog.</p> <p>City staff are also involved in regional adaptation workshops and continue to engage with and disseminate knowledge where applicable.</p>
1.4 Review winter control practices to ensure climate change impacts are considered and to identify opportunities for improvement.	In progress.	<p>Winter control policies are reviewed and updated regularly. The City has also increased the flexibility in staffing operations which allows for alternative work during winter operations and a greater adaptability to new circumstances.</p> <p>The City is also using the telematics software “Citizen Insights” to track winter control equipment routes and increase efficiencies in route optimization.</p>
1.5 Carry out education and engagement activities to increase awareness of the importance of 72-hour emergency preparedness and emergency response plans for individuals and families, community organizations, and businesses.	In progress.	The Fire Prevention Team does continuous education around emergency preparedness which includes education on 72-hour emergency kits. Several other local organizations, including the Region of Waterloo, Alert Waterloo Region, and Waterloo Regional Police Services also educate residents on the contents and importance of kits.
1.6 Investigate the feasibility of implementing warming and cooling centres outside of normal business hours.	Completed.	Currently staff are recommending that it is not feasible to increase the operational hours of City facilities due to the increased funding, training, and resource needs but they continued to explore potential opportunities.

Table 10 Goal 2: Generate awareness of changing climate conditions with staff and the public action status summary

Action	Status	Additional context
2.1 Undertake a gap analysis of existing communication processes related to climate change and extreme weather.	Not yet initiated.	Existing processes exist to communicate extreme weather events and safety information. The City also sends out educational messaging regarding adapting to certain weather conditions. At this time, a dedicated gap analysis has not been conducted.
2.2 Implement an opt-in email/text alert system to notify community members about extreme weather events and emergencies.	Complete.	The City is a member of and promotes AlertWR, an emergency messaging service that communicates hazards to the public. The City has also begun an initiative to ensure that there is awareness of the AlertWR app among the English-as-an-additional language community through translated materials.
2.3 Investigate the feasibility of incorporating extreme weather event and emergency information into the Pingstreet app.	NA (marked as Complete).	This action has been removed from consideration as the City decommissioned its use of the Pingstreet app in June 2024. The Pingstreet app will be entirely decommissioned in 2025. The City continues to promote the use of the AlertWR service for emergency notices. The City has also begun an initiative to ensure that there is awareness of the AlertWR app among the English-as-an-additional language community through translated materials.

Table 11 Goal 3: Ensure a coordinate response to and recovery from extreme weather events action status summary

Action	Status	Additional context
3.1 Enable website updates outside of normal business hours to address extreme weather events and emergency situations.	Complete.	The City's website can be updated remotely at any time by staff. In the event of an emergency, the Emergency Communications Procedures would be triggered and followed.
3.2 Assess training needs for staff to ensure informed response to extreme weather events.	In progress.	There are several existing procedures and policies in place to protect staff against extreme weather events. A formal assessment of these procedures has not been conducted.
3.3 Ensure climate change considerations are incorporated into the City's Hazard Identification and Risk Assessment tool as part of the annual review process and training.	In progress.	The Hazard Identification and Risk Assessment tool is reviewed annually and updated as needed and as new information is presented and available.

Table 12 Goal 4: Consider climate change impacts in the design, construction and maintenance of built infrastructure action status summary

Action	Status	Additional context
4.1 Upsize storm sewers to current standards as part of renewal (where possible).	In progress.	Older storm sewers are upsized to current standards when necessary during other planned capital projects to increase efficiency. Sewers may be replaced or repaired independently if they pose an operation, health, or safety risk.
4.2 Establish a process for reviewing localized climate projections at regular time intervals.	Not yet initiated.	
4.3 Provide training to staff to ensure climate change impacts and risks are considered as part of the Project Management Manual's risk management framework.	Not yet initiated.	
4.4 Incorporate climate change considerations into the City's approach to asset management and	In progress.	Considerations of climate change adaptation and mitigation have been integrated into the 2024 Asset Management Plan. This includes

Action	Status	Additional context
provide training to staff as required (e.g. lifecycle costing, asset level of service, accelerated deterioration rates).		potential demand drivers and recommendations for continued integration. Complete incorporation will be an iterative process that evolves as more data becomes available.

Table 13 Goal 5: Foster resiliency within the urban forest and natural landscape action status summary

Action	Status	Additional context
5.1 Develop an Urban Forest Strategy, including a canopy target.	In progress.	The City is currently developing an Urban Forest Management Strategy with an anticipated completion date of 2025.
5.2 Review the canopy cover mapping protocol and identify tree deficit areas.	In progress.	The City is currently developing an Urban Forest Management Strategy with an anticipated completion date of 2025. This work will be completed as part of that strategy.
5.3 Update the Emergency Forestry Plan.	In progress.	Staff are working cross-regionally to develop an emergency readiness plan for activating staff in the event of a forestry-related emergency. There are currently standard operating procedures in place for extreme weather events.
5.4 Continue to incorporate City-owned green infrastructure into the Asset Management Plan.	In progress.	The City continues to include green infrastructure in asset management planning. Woodlots are currently being valued for their inclusion in the next iteration of the Asset Management Plan. Information from the Urban Forest Management Strategy (2025) will help to increase the accuracy of the green infrastructure data.

Table 14 Goal 6: Reduce risks associated with heavy rainfall and flooding action status summary

Action	Status	Additional context
6.1 Review existing regulatory floodplain	In progress.	While several flood mapping activities have occurred for specific project areas of the City, including a risk

Action	Status	Additional context
mapping and prioritize opportunities for updates.		assessment, floodplain mapping is under the purview of the Grand River Conservation Authority (GRCA). Climate change integration into floodplain mapping has not yet been undertaken.
6.2 Map areas prone to urban flooding and model scenarios.	In progress.	Floodplain mapping is under the purview of the GRCA. The City collects data on areas where frequent flooding events occur, and project-specific risk assessment have been conducted.
6.3 Review the protocols for inspecting creeks and stormwater infrastructure to minimize flood risks.	In progress.	In 2022 the City began a CCTV inspection program of storm sewers. The program is intended to expand to the entire City within 5 years. There are also existing reporting requirements to monitor flood risk.
6.4 Increase public education on clearing catch basins	In progress.	<p>The City engages with the community on clearing catch basins through a variety of media such as social media posts and videos.</p> <p>The City also has an established program that provides a variable stormwater rate credit to property owners through implementation of runoff control measures such as rainwater capture (rain barrels) or quality control (stormwater pond).</p>
6.5 Investigate the feasibility of a sump pump disconnection program.	In progress.	The City will be initiating a feasibility study of this program as part of the inflow and infiltration analysis of the wastewater system.
6.6 Investigate the feasibility of a backwater valve program.	Complete.	After further evaluation of their effectiveness and cost, the City has determined that it is not economical or effective to implement a backwater valve program at this time.
6.7 Complete and implement the Stormwater Management Master Plan.	In progress.	The Stormwater Master Plan was completed in 2019. Implementation is currently underway.
6.8 Review and upgrade flood proofing measures in City-owned buildings in the	In progress.	Implementation and review are done on a case-by-case basis as buildings are renovated or retrofitted.

Action	Status	Additional context
regulatory floodplain where possible.		

Table 15 Goal 7: Minimize disruptions to City services action status summary

Action	Status	Additional context
7.1 Undertake business continuity planning and training to identify and plan for the City's essential and secondary services.	Complete.	The City of Waterloo has a high-level Business Continuity Plan that is regularly updated and reviewed.
7.2 Review practices around back-up power generation and ensure critical facilities are covered.	In progress.	The City is creating the REF 238 Emergency Response Building Systems and has applied for a grant for back-up power generation (COM2024-032).
7.3 Develop a fuel supply protocol to manage supplies during extreme events and emergencies.	Not yet initiated.	The City does not currently have a fuel-supply protocol for extreme events and emergencies. A new staff resource was hired in 2024 to manage fuel supplies.
7.4 Consider alternative work arrangements that reduce commuting during extreme weather events and hazardous road conditions.	Complete.	
7.5 Review the existing 211 service agreement to identify potential advancements of the 211 network.	Not yet initiated.	

Table 16 Goal 8: Integrate climate change adaptation into the City's strategies, plans, policies, procedures, and operations action status summary

Action	Status	Additional context
8.1 Identify financial implications and incorporate adaptation-related costs into short and long-term financial budgets and projections.	In progress	The City's previous policy regarding assets and procurement was to replace "like for like" when a new asset was needed. The City has changed this policy to "like for modern equivalent" which allows for a flexible and phased approach to adapt to new conditions. Preliminary

Action	Status	Additional context
		discussions have begun regarding projecting long-term financial costs of adapting to climate change, however there is a lack of established data and methodology reducing the accuracy of these assessments.
8.2 Continue annual reviews of the General Operating Contingency Reserve Policy and the Winter Control Reserve Policy to ensure they appropriately account for extreme weather events.	In progress.	An annual review of these funds and policies is conducted annually.
8.3 Review plans, policies, and procedures for alignment with adaptation goals and update where appropriate (e.g. Official Plan, Emergency Response Plan, master plans, maintenance protocols).	In progress.	Preliminary considerations of adaptation, especially as it relates to heat, have been incorporated into comprehensive plans such as the Official Plan and Parks Master Plans. This is an ongoing iterative effort.
8.4 Identify corporate champion(s) to help lead implementation of adaptation actions.	Complete.	The City's Environmental Sustainability Team (EST) which consists of a cross-divisional group of leadership and staff works to integrate sustainability work across the City.

Appendix E: TransformWR Progress Summary

Table 16 to Table 21 provides a high-level summary of the work done to date on the actions of TransformWR. The information is divided into the six Transformative Changes.

Table 17 Transformative Change #1: By 2050, most trips are taken using active transportation, with the support of a robust public transit system action status summary

Action	Status	Additional context
1.1.1: Plan a network of major active transportation corridors across cities and townships, that will provide high-volume priority travel for walking, cycling, and rolling to key destinations across the region, as well as access to public transit.	Complete.	This action is addressed through the Transportation Master Plan Update (2020) which includes expansion and improvement of the active transportation network. Several of the low priority actions in this plan have been implemented. The City also continues to collaborate with neighbouring municipalities to increase the interconnectivity of active transportation routes.
1.1.2: Plan for and build neighbourhood connections to the active transportation network.	Complete.	This action is addressed through the Transportation Master Plan Update and the City of Waterloo Official Plan which both encourage and plan for complete communities and comprehensive active transportation networks.
1.1.3: Implement further policies across the region to prioritize active transportation in road and trail design and reconstruction.	In progress.	This action is addressed through the Transportation Master Plan Update and the Comprehensive Engineering Landscape Manual which both consider the reach and security of all road and path users.
1.1.4: Identify and implement policy and program opportunities to de-incentivize driving.	In progress.	This action is addressed through the Transportation Master Plan Update and the City of Waterloo Official Plan which both encourage and plan for complete communities and comprehensive active transportation networks to meet daily commuting needs.
1.1.5: Design and maintain active transportation infrastructure to ensure year-round access, safety,	In progress.	Assets in the City are designed to consider the winter maintenance needs and the life cycle needs under winter conditions. The City also has

Action	Status	Additional context
and comfort for people of all abilities.		Minimum Maintenance Standards for its transportation system and periodically reviews its Winter Control Modernization Policies. In addition, the Transportation Master Plan Update includes considerations of aligning standards and maintenance requirements with available technology and prioritizing key network areas.
1.2.2: Ensure priority access for walking, cycling, and rolling to transit stations and bus stops.	In progress.	<p>The City of Waterloo is listed as a Collaborator for this action.</p> <p>This action is supported through the Transportation Master Plan Update and the City of Waterloo Official Plan which both encourage and plan for complete communities and comprehensive active transportation networks to meet daily commuting needs.</p>
1.2.4: Connect people to intercity, multimodal, and emerging transportation solutions.	In progress.	<p>This action is addressed through the Transportation Master Plan Update and the City of Waterloo Official Plan which both encourage and plan for complete communities and comprehensive active transportation networks to meet daily commuting needs.</p> <p>In addition, the City participates in advocacy work related to the higher-level modes of transportation (e.g. provincial and inter-City).</p>
1.3.1: Launch micro mobility systems (bike, e-bike and e-scooter-sharing systems) in Waterloo Region communities.	Complete.	The City participates in the Neuron micromobility program which provides electric bikes and scooters for public use.
1.3.5: Post-pandemic continued adoption of work from home and flexible work schedules for reducing trips or shifting trips to off-peak times.	Complete.	<p>The City of Waterloo is listed as a Participant for this action.</p> <p>The City of Waterloo has established a post-pandemic work from home options for City staff. This allows</p>

Action	Status	Additional context
		qualifying individuals to work a select number of days remotely each week. This reduces commute times and the associated GHG emissions.
1.4.1: Increase the efficiency of commercial goods movement	Not yet initiated.	The City of Waterloo is listed as a Support for this action.
1.5.1: Create “15-minute neighbourhoods” where people can meet their daily needs by walking, cycling, or rolling.	In progress.	This action is addressed through the City of Waterloo Official Plan (2024 Phase 1 review) which heavily emphasizes planning for complete communities through various mechanisms.
1.5.2: Implement design standards for new developments to build for walking, cycling, and rolling to be the primary mode of travel.	In progress.	<p>This action is addressed through the Transportation Master Plan Update and the City of Waterloo Official Plan which both encourage and plan for complete communities and comprehensive active transportation networks to meet daily commuting needs.</p> <p>The City is also contributing to the development of harmonized high performance development standards which will include considerations for design standards to facilitate active transportation in new build developments.</p>

Table 18 Transformative Change #2: By 2050, remaining personal and commercial vehicles are zero emissions vehicles action status summary

Action	Status	Additional context
2.1.1: Complete a region-wide electric vehicle strategy.	In progress.	<p>The City of Waterloo is listed as a Collaborator for this action.</p> <p>There are various policies in the Official Plan referring to minimum EV requirements for residential dwellings. In addition, preliminary discussions have begun to undertake a community-scale EV strategy.</p>
2.1.2: Plan and begin to implement a transition to	In progress.	Out of all the equipment in the municipal fleet that currently has a

Action	Status	Additional context
zero-emission vehicles for municipal fleets, working towards a goal of at least half of municipal vehicles being zero-emissions by 2030.		market EV equivalent and can meet operational needs, 37% of fleet has been converted to EV. There are significant barriers to converting 50% of the entire fleet due to limited availability of EV vehicles that meet specific municipal needs.
2.1.3: Plan and begin to implement the transition of commercial vehicle fleets to zero-emissions vehicles.	Not yet initiated.	The City of Waterloo is listed as a Participant for this action.
2.2.1: Provide more public electric vehicle charging stations in public spaces, commercial spaces and other places visited by the public.	In progress.	The City of Waterloo owns four publicly accessible EV charging stations.
2.2.2: Require all new residential parking spaces, and a portion of new non-residential parking spaces, to be constructed as "EV-ready".	In progress.	As per By-Law NO.2020-061 all structure parking spaces for apartment buildings, multi-use residential buildings, mixed use buildings, and non-residential buildings constructed on or after January 1st, 2021, shall be Designated Electric Vehicle Parking Spaces. This is a parking space designed and constructed to be electric vehicle ready, allowing for the future installation of electric vehicle supply equipment that conforms to Section 86 of the Electrical Safety Code.

Table 19 Transformative Change #3: By 2050, business and homes not longer use fossil fuels for space heating and cooling, and hot water heating action status summary

Action	Status	Additional context
3.1.9: Offer innovative loans for energy-related residential and commercial building upgrades.	Not yet initiated.	
3.2.3: Develop region-wide building standards to	In progress.	The City is contributing to the development of harmonized high

Action	Status	Additional context
encourage and support zero-carbon development of all new buildings in the region.		performance development standards which will focus on reducing the GHG emissions of new builds.
3.2.4: Incorporate energy planning considerations into the development application review process.	In progress.	The City of Waterloo has requirements for select new builds to conduct an Energy Study as part of the planning applications process.
3.2.7: Show leadership by building net-zero carbon in the public sector.	In progress.	The City of Waterloo's Generation Park employment lands have been designed to encourage net-zero construction and high sustainability standards. Additionally, under the Green Building Policy for City-Owned Buildings, new construction of City facilities must be net-zero.

Table 20 Transformative Change #4: By 2050, Waterloo Region Uses less, wastes less, and no longer disposes of organic matter in landfills action status summary

Action	Status	Additional context
4.2.1: Implement community waste reduction and circular economy campaigns.	Not yet initiated.	
4.2.4: Reduce unnecessary building demolitions and construction waste.	Not yet initiated.	

Table 21 Transformative Change #5: By 2050, Waterloo Region has a thriving local food system built on local farming and food processing that feeds much of our community action status summary

Action	Status	Additional context
5.1.1: Continue to develop and enforce robust land use planning protections for prime agricultural land.	Complete.	There is no designated agricultural land in the City of Waterloo.
5.4.2: Provide a variety of low GHG food options plant-based dining options in local restaurants,	In progress.	The City of Waterloo is listed as a Participant for this action. The City provides vegetarian and vegan options at catered events. Plant based food options are available at

Action	Status	Additional context
grocery stores, and catered events.		RIM Park and WMRC. There are several private restaurants and grocery stores within the City that offer plant-based food.

Table 22 Transformative Change #6: By 2050, Waterloo Region has leveraged reducing GHG emissions to increase equity, prosperity, and resiliency for all action status summary

Action	Status	Additional context
6.1.1: Establish metrics to measure progress on increasing equity through GHG reduction initiatives in our community.	Not yet initiated.	The City has several ongoing projects related to measuring equity in the community. However, at this time the City has not initiated a project dedicated to measuring equity as it relates to GHG reduction projects.
6.1.2: Fund a climate justice committee led by community members from equity-seeking groups.	Not yet initiated.	
6.1.5: Build reciprocal relationships between Indigenous groups and local municipalities and climate action organizations to ensure GHG reduction work is done in equitable ways that respect the land and traditions of Indigenous groups.	In progress.	The City of Waterloo is listed as a Participant for this action. The City's READI team continuously works to establish and strengthen relationships between Indigenous groups and the municipality.
6.1.6: Apply an equity lens to all the actions in this transformation.	In progress.	The City of Waterloo is listed as a Participant for this action. The City endeavors to include equity considerations as a key component in all climate work. The City is also a member of The Reconciliation Action Partnership (RAP).
6.3.4: Evaluate how to identify and protect optimal areas for industrial-scale renewable energy generation.	In progress.	The City of Waterloo is listed as a Collaborator for this action. WRCE has completed mapping for several types of renewable energy generation in the Region.

Action	Status	Additional context
6.5.1: Bring community organizations and local government together to collectively identify and communicate advocacy priorities to multiple levels of government.	Not yet initiated.	