

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – January 9, 2020

REPORTS

Item No. 2 Winnipeg Climate Action Plan – Annual Report

Due to a tie vote, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment submits the matter to Executive Policy Committee and Council without recommendation.

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – January 9, 2020

DECISION MAKING HISTORY:

Moved by Councillor Chambers,

That the recommendation of the Winnipeg Public Service be concurred in and forwarded to the Executive Policy Committee and Council.

The motion was put and in view of a tie vote, was declared lost in accordance with Rule 54 of The Procedure By-law No. 50/2007.

Councillors Klein and Schreyer asked to be recorded as having voted against the above motion, in accordance with Rule 47(7) of The Procedure By-law No. 50/2007.

COUNCIL DECISION:

On December 12, 2019, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and adopted the following:

1. That an extension of time of 30 days be granted for the Winnipeg Public Service to report back on the matter.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On December 3, 2019, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On November 28, 2019, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment recommended to Council:

1. That an extension of time of 30 days be granted for the Winnipeg Public Service to report back on the matter.

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – January 9, 2020

DECISION MAKING HISTORY (continued):

STANDING COMMITTEE RECOMMENDATION (continued):

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

COUNCIL DECISION:

On September 20, 2018, Council adopted the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment which included the following:

6. That the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

ADMINISTRATIVE REPORT

Title: Winnipeg Climate Action Plan – Year 1 Update

Critical Path: Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
L. Mierau	M. Jack	P. Olafson, Interim CFO	M. Ruta, Interim CAO

EXECUTIVE SUMMARY

The ***Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People*** (The Plan) outlines the City of Winnipeg and the broader community's commitment to work together. The Plan received unanimous support from Council on September 20, 2018 and was approved for implementation.

Progress on the Plan's actions include key activities related to corporate sustainability initiatives and enhanced internal communications, updated corporate emissions inventory, building energy benchmarking, pilots and studies on fleet electrification, bus rapid transit expansion, and the development of the long term vision and strategy for Winnipeg's urban forest, parks, and infill. In September 2019, Mayor Bowman announced the One Million Trees Challenge aiming to plant one million trees before the City's population reaches one million people which is an important step to enhancing climate resiliency.

A key 2030 performance indicator related to the waste sector was realized in 2019 by securing the federal funding support to improve the Brady Road Resource Management Facility Landfill Gas Capture System. Upon completion, this expansion will improve the system's methane collection efficiency to 75% and be the equivalent emission reduction of taking 240,000 cars off the road annually.

The Corporate GHG Update and Forecast Report, new Plan Summary communication document and a detailed status update of each individual short-term action are found in Attachments 1, 2 and 3 respectively.

Results of a survey of all departments indicate that of the 77 short-term actions identified in the Plan, approximately 40% were accomplished or underway using existing resources, 30% were partially funded, and approximately 25% required entirely new sources of funding in order to be implement

As per Section 7 of the Plan, successful implementation of the Actions requires increased funding levels and staff resources. This report includes several related recommendations.

RECOMMENDATIONS

1. That, as per Direction 1.2 of Winnipeg's Climate Action Plan, the Public Service undertake detailed financial, energy and emissions mapping and modeling to understand the costs and benefits of implementing the Plan. The funding to conduct this modeling, \$200,000, be referred to the 2020 Budget process.
2. That, as per Direction 1.2 of Winnipeg's Climate Action Plan, the establishment of a Climate Action Reserve Fund be referred to the 2020 Budget process with consideration for a minimum allocation of \$500,000.
3. That, as per Direction 7.1 of the Winnipeg's Climate Action Plan, 1 FTE located within the Office of Sustainability be referred to the 2020 Budget process to lead the development of Winnipeg's Climate Adaptation and Resiliency Strategy.
4. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019. This report provides an update on year 1 of Plan implementation.

IMPLICATIONS OF THE RECOMMENDATIONS

The report recommendations have a combined financial impact of \$808,779 in 2020 decreasing to \$610,390 in 2021 which is recommended to be referred to the 2020 budget process.

HISTORY/DISCUSSION

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released its report about extreme weather, rising sea levels, and sea ice retreat as a consequence of one degree of global warming that the world is already experiencing. Scientists highlighted a number of climate change impacts that could be avoided by limiting warming to 1.5 degrees warming compared to 2 degrees.

Climate action includes two important aspects: mitigation and adaptation. Mitigation actions focus on reducing the use of fossil fuels to lessen the severity of impacts in the long term. Adaptation actions relate to preparing and planning for the impacts on ongoing climate change that is currently being experienced.

On November 25, 1998, Council passed a resolution signing on to the Federation of Canadian Municipalities (FCM) Partners for Climate Protection Program (PCP), committing the City to establish both corporate and community-wide greenhouse gas emissions reduction targets.

In 2006, the Corporate *Climate Change Action Plan* (CCAP) was adopted by Council targeting a 20% reduction in corporate emissions below the baseline year of 1998. A 2007 progress report demonstrated that the 20% target had nearly been achieved. In 2009, the Public Service submitted the 2008 annual report on corporate CCAP as well as a proposed strategy for achieving a further 20% emission reduction.

On July 10, 2011, Council adopted *A Sustainable Winnipeg* (an *OurWinnipeg* Direction Strategy), which re-affirmed Council's prior target resolutions for the corporate and community *Climate Change Action Plan*, directed the Public Service to establish corporate GHG targets for the years 2020 and 2035, and to create a complementary corporate energy plan to reduce energy consumption and promote the use of renewable energy sources.

In 2013, a Federation of Canadian Municipalities' Green Municipal Fund grant of \$94,875 was awarded to the City of Winnipeg to support the development of the Winnipeg Climate Action Plan.

On September 20, 2018, *Winnipeg's Climate Action Plan: Planning for Climate Change, Acting for People* received unanimous support from Council. With Council's approval, Winnipeg achieved Milestone 3 under the Partners for Climate Protection Program and the 2009 Corporate Climate Action Plan was rescinded.

The greenhouse gas reduction targets approved under Winnipeg's Climate Action Plan (the Plan) are as follows:

- 20% reduction in GHG emissions by 2030 relative to 2011 levels
- 80% reduction in GHG emissions by 2050 relative to 2011 levels

The Plan outlines the City of Winnipeg and the broader community's commitment to work together and provides a framework to effectively mitigate climate change by reducing greenhouse gas emissions. It is the result of several years of work by the City of Winnipeg, community leaders, stakeholders, technical experts and the public.

The Plan includes sector specific targets related to transportation, buildings, and waste which are responsible for 50%, 35% and 15% respectively according to the community inventory of total GHG emissions conducted for the 2011 baseline year. These sectors are accompanied by a suite of directions and actions envisioned to achieve emission reductions in collaboration with the community.

In order to meet the emission reduction targets outlined in the Plan, the City will need rigorous information and insights to support decision-making and the business case for programming and infrastructure investment. The development of more detailed and updated modeling of community emissions will provide a clearer pathway to meet Council's 2030 and 2050 GHG reduction targets. It is estimated that up to \$200,000 is required to hire a consultant to assist with this work and an application was submitted to the Innovation Fund in the summer of 2019 requesting funding support to complete this work.

Economic modeling of a low carbon path to meet Council's targets will provide many benefits including support to departments for business case development to advance and support the actions for which they are accountable under the Plan. Modeling would include both macro and micro analysis of the economic impacts of individual actions contained in the Plan, as well as an updated community-wide inventory of emissions that meets the Global Protocol for Community-Scale GHG Emissions.

The initiation of a climate adaptation and resiliency strategy is identified as a critical short term action. For example, the Prairie Climate Centre provides scientific data to show that Winnipeg has historically experienced heat waves lasting 3-4 days. By 2051-2080, these heat waves are predicted to last longer than 7 days. Heat waves can have devastating effect on the health of our communities, as illustrated by more frequent heat waves across North America and Europe. According to the World Health Organization and the Public Health Agency of Canada, extreme heat and high temperatures are linked to premature death, heat stroke, and aggravation of heart and respiratory diseases. Vulnerable populations such as the elderly, children, and people who are structurally disadvantaged (e.g. homeless, those with limited economic means) are at particular risk of heat-related morbidity and mortality. The City has a key role to play in protecting and enhancing green spaces and the urban forest for shade and to mitigate the urban heat island effect. Moreover, extreme heat is just one example of a climate impact that Winnipeg needs to be adapting and preparing for as part of a long term climate resiliency strategy.

A new FTE located in the Office of Sustainability is recommended to lead the Climate Adaptation and Resiliency Strategy on behalf of the City thereby fulfilling Direction 7.1 (p. 53) and the short-action identified in the Plan. Strategy development includes extensive research, analysis, planning, and the development of an implementation and monitoring framework to identify Winnipeg-specific actions that will help to better prepare and respond to climate impacts on our community and environment. The Strategy would include an in-depth risk and vulnerability analysis in collaboration with all departments.

In the past few months alone, Winnipeg has experienced summer heat warnings issued by Environment Canada, record breaking rainfall in September, followed by unprecedented October flooding and a devastating snowstorm which is expected to cost millions in recovery costs.

Winnipeg is not alone. Many communities are facing serious threats related to public health, infrastructure costs, economic viability, and social equity associated with climate change. Proactive climate adaptation planning can help avoid significant financial costs associated with climate-related disasters. For example, Public Safety Canada estimates that every dollar invested in disaster mitigation saves \$3-\$5 in recovery costs. Research from the Insurance Bureau of Canada provides further evidence that foresight reduces disruption to local economies and communities

As per Section 7 of the Plan (p. 56), successful implementation of the Actions requires increased funding levels, staff resources, enhanced corporate collaboration across all City departments, improved monitoring and community collaboration. The City has continued to convene its cross-departmental Climate Change Working Group to ensure that implementation is coordinated and shared throughout the administration.

In 2019, the Office of Sustainability, through the Climate Change Working Group, conducted a survey of all departments regarding the funding status of actions for which they are accountable under the Plan. They were invited to provide input regarding resources (funding, staff) and current status.

Findings from the survey showed that, of the 77 actions identified as short term (2018-2022) priorities:

- 40% of them were “green lighted” meaning they were accomplished or are underway using existing resources;
- 30% were identified as partially funded; and
- 25% were “red lighted” which is to say that they require entirely new sources of funding.

Direction 1.2 includes the short-term action to: “establish a dedicated Climate Action Reserve Fund to support implementation of the Plan” (p. 28). The establishment of a Climate Action Reserve Fund (CARF) with a minimum annual allocation of \$500,000 will help to address the gap in funding to support department’s efforts to implement the Plan. The funds could be used to support actions that provide low cost per tonne of GHG avoided.

For example, recommissioning of City-owned buildings has been shown to provide significant payback with and can be identified from benchmarked Portfolio Manager Information, total utility usage data or information from maintenance/operational staff.

To illustrate the scope of costs involved with the Plan, Direction 1.3 includes the short-term (2018-2022) action to conduct: “regularly scheduled recommissioning and retrofits in existing facilities, guided by data from benchmarking” (p.29). Municipal Accommodations has approximately 1000 buildings within its inventory and assuming \$40,000 as an average cost per retrofit and recommissioning, this action would cost upwards of \$40,000,000. The CARF would be one source of funding to begin to support this action.

As an important part of annual updates to Council, the Public Service will continue to monitor progress towards implementation of short-term actions (2018-2022). The intent is to publicly report on progress on an annual basis, beginning in 2019.

A review and update of the Strategic Opportunity areas will be completed during the last year of each Council term, so that City departments can collectively update changing priorities and needs to reflect completed projects, technology innovations, and continuous learning.

As well, the Office of Sustainability aims to secure funding to update the community GHG inventory by 2020 in order to update community emissions inventory and compare against the 2011 baseline year to show that the City is on track to reach Council’s mandated GHG emission reduction targets for 2030 and 2050.

Summary of Strategic Opportunity 1 – 7: Short-term Actions (2018-2019)

Of the total of 139 actions described in the Plan, 77 of them have been characterized as short term (2018-2022). Key initiatives that align with the Actions described in the Plan are highlighted below. The list is not exhaustive. A more detailed status update on each of the short-term actions and their budget status is provided in Attachment 3.

Strategic Opportunity #1: Corporate Leadership

- *Updated corporate GHG inventory* – The Office of Sustainability has updated the City’s corporate GHG inventory to identify the emissions trend and forecast from its own buildings and operations (see Attachment 1).
- *Enhanced communication efforts* – The Office of Sustainability has undertaken efforts to communicate the Plan as well as other sustainability-related initiatives. This has been accomplished through the use of the City’s intranet, employee newsletters, videos and the recently developed Summary Document to the Plan (see Attachment 2).

- *Office Composting* – Services are currently provided in three City buildings with planning initiated for additional locations. At City Hall, approximately 6,890 kilograms of compostable material was collected in the first eight months of the program and resulted in approximately 6 tonnes of CO₂e (or equivalent of removing 1 passenger car from the road each year). In the first four years of the PPD program located at 65 Garry Street, more than 23,000 kilograms of organic material has been diverted.
- *Transparency in Building Energy* – The City has implemented energy benchmarking for more than 500 City-owned Buildings (using Portfolio Manager) to identify opportunities for improved energy performance and is leading a voluntary energy benchmarking, labelling and disclosure program.
- *Electric Vehicles* - The Winnipeg Fleet Management Agency is piloting two Chevy Bolt electric vehicles deployed to two different places. Outcomes of the pilot will inform next steps on fleet electrification.
- *Sustainable Commuting* – The City supports *GoManitoba* as a way to connect staff and help facilitate carpools, promote public transit use, and match bike and walk mentors. In the fall of 2019, the ‘GoManitoba Department SignUp Challenge’ was launched to incent employee carpooling. Over 400 employees competed in the 2019 *Commuter Challenge*, a week-long friendly competition between Canadian cities and workplaces. A survey of employee commuting behavior is planned for late 2019.
- *External Funding* – funding was secured from the federal government, including support received from Environment and Climate Change Canada, and Natural Resources Canada. Additional applications have been submitted related to electric vehicle charging infrastructure and community climate resiliency.
- *Decision making alignment with Climate Action Plan* - In September 2019, the Public Service was directed to consider and advise as a part of every report, whether the recommendation is consistent with the City of Winnipeg’s objectives and targets with respect to reducing greenhouse gas emissions and adapting to the harmful impacts of climate change.

Strategic Opportunity #2: Empower Community Leaders and Stakeholder Collaboration

- *Local Energy Access Project (LEAP)* – Funded by FCM and led by the Canadian Urban Sustainability Practitioners (CUSP) network, the LEAP project is intended to address the issue of energy poverty while achieving emission reductions. This project involves support from a coalition of community members and organizations to develop solutions that will build climate equity and reduce GHG emissions at the household and neighbourhood level.
- *Green It, Mean It!* – The Winnipeg Public Library initiated a “Green it. Mean it!” series in 2019 with workshops that focus on people who are actively living a sustainable lifestyle. Examples of topics explored to date include: electric vehicles, low waste living, solar energy, how to use less water, and urban beekeeping.

Strategic Opportunity #3: Advancing Sustainable Transportation – Increase Mobility Options and Shift to Zero Emission Vehicles

- *Pedestrian and Cycling Strategies* - Not meeting Pedestrian and Cycling Strategies proposed goals for funding or staff levels.
- *Winnipeg Transit Electrification Study* – Winnipeg Transit is currently working to develop a plan to purchase 12-20 electric buses. The goal is to produce a detailed plan and cost estimates needed to purchase 12-20 electric buses, and to incorporate them into the bus fleet. This larger test fleet allows continuous learning about the operation and

maintenance of electric buses, and to better understand how moving toward large-scale bus fleet electrification affects Transit operations.

- *Southwest Rapid Transit Corridor* – The pedestrian and cycling pathway is expected to open in Fall 2019 and bus service to begin in the spring 2020.
- *Bike Share Innovation Strategy Program* - The Innovation Program has approved a submission for Bike Share and is currently working with the Public Works on pre-requisite by-law information.

Strategic Opportunity #4: Facilitate Compact, Complete Development and Increase Density

- *Infill strategy* – Planning, Property and Development's community consultation efforts are currently underway to advance the Residential Infill Strategy Implementation Action Plan.
- *OurWinnipeg Review* – OurWinnipeg is the City's development plan. It is under review and will result in a plan to accommodate growth sustainably over the next 25-years. The timing, relevance and endorsement of the Climate Action Plan and its targets has informed the OurWinnipeg review process and draft policy and will continue to inform city building policy detail in Complete Communities.
- *Complete Communities Direction Strategy* – the new version is planned to be designed to meet the 2030 Land Use performance indicator. This indicator states that 50% of all new residential construction will take place in strategic infill locations.

Strategic Opportunity #5: Low Carbon and Energy Efficient Buildings

- *Benchmarking, Labelling and Disclosure* – In 2019, the Office of Sustainability received a NR Can grant to implement an energy Benchmarking, Labelling and Disclosure (BLD) program in the City of Winnipeg. This voluntary program will be marketed towards the institutional and commercial sectors, and provides independent, unbiased assessment of buildings with regards to approximate annual energy usage, cost, greenhouse gas emissions and Energy Use Intensity (EUI). It will support property owners to make more informed energy decisions by helping them better understand the energy performance of their buildings.

Strategic Opportunity #6: Waste Reduction and Diversion

- *Brady Road Resource Management Facility Landfill Gas Capture System Expansion* - The Office of Sustainability collaborated with the Water and Waste Department to successfully attain federal funding through the Low Carbon Economy Fund. The \$1.3 million in funding will help the City improve its Brady Road Resource Management Facility landfill gas capture system to 75% efficiency, thereby meeting a key performance indicator for 2030 and reducing GHG emissions by an estimated 1.1 million tonnes of CO₂e over the 30 year lifespan of the asset. This is equivalent to the annual emissions of nearly 240,000 passenger cars.
- *Mattress Recycling* - On February 13, 2019, the Brady Road 4R Winnipeg Depot started a one-year Mattress and Box Spring Recycling Pilot Project in conjunction with Mother Earth Recycling to divert 8,000 mattresses and box springs from the landfill for recycling.

Strategic Opportunity #7: Climate Resiliency

- *Water Quality* - \$100,000 from the Water and Waste Department budget was used to support the Netley-Libau Marsh restoration project.
- *Urban Forest Strategy* – In 2019, the contract was awarded to assist the Public Works Department with the development a long term vision and strategy for sustaining Winnipeg's urban forest.

- The *Recreation & Parks Strategies* project is ongoing and will be complete in 2020. Current efforts and future opportunities to mitigate and adapt to climate risks over the next 25 years will be included.
- *Climate Change Adaptation Workshop* – The Climate Change Working Group participated in a half day workshop to explore the risks and vulnerabilities of climate change. The Office of Sustainability has requested 1 FTE in the 2020 Budget to lead the development of Winnipeg's climate adaptation and resiliency strategy.
- *One Million Trees Challenge* - In September 2019, Mayor Bowman announced the Challenge aiming to plant one million trees before the City's population reaches one million people.

FINANCIAL IMPACT

Financial Impact Statement

Date: **October 21, 2019**

Project Name:

First Year of Program

2019

Winnipeg Climate Action Plan - Year 1 Update

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Capital					
Capital Expenditures Required	\$ -	\$ -	\$ -	\$ -	\$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Funding Sources:					
Debt - Internal	\$ -	\$ -	\$ -	\$ -	\$ -
Debt - External	-	-	-	-	-
Grants	-	-	-	-	-
Reserves, Equity, Surplus	-	-	-	-	-
Other	-	-	-	-	-
Total Funding	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Total Additional Capital Budget Required	<u>\$ -</u>				
Total Additional Debt Required	<u>\$ -</u>				
Current Expenditures/Revenues					
Direct Costs	\$ -	\$ 808,779	\$ 610,390	\$ 612,456	\$ 614,581
Less: Incremental Revenue/Recovery	-	-	-	-	-
Net Cost/(Benefit)	<u>\$ -</u>	<u>\$ 808,779</u>	<u>\$ 610,390</u>	<u>\$ 612,456</u>	<u>\$ 614,581</u>
Less: Existing Budget Amounts	-	-	-	-	-
Net Budget Adjustment Required	<u>\$ -</u>	<u>\$ 808,779</u>	<u>\$ 610,390</u>	<u>\$ 612,456</u>	<u>\$ 614,581</u>
Additional Comments:					
1. Direct costs above represent the following:					
- A one-time cost of \$200,000 for 2019 for the greenhouse gas and economic modeling of the Winnipeg Climate Action Plan.					
- Climate Action Reserve Fund of \$500,000					
- Salaries and benefits of 1 FTE WAPSO Exempt Grade 3 - Step 21 (2020 - \$108,779, 2021 - \$110,390, 2022 \$112,456, and 2023 - \$114,581.					
2. The Office of Sustainability does not have budget for the above costs and as such all amounts required will be referred to the budget process.					

(Original Signed by T. Yanchishyn)

Tanis Yanchishyn, CPA, CA
 Manager of Finance (Campus)
 Corporate Finance Department

CONSULTATION

This Report has been prepared in consultation with:

Planning, Property and Development
Public Works
Water and Waste
Winnipeg Transit
Winnipeg Parking Authority
Winnipeg Fire and Paramedic Service
Corporate Finance
Winnipeg Fleet Management Agency
Office of Public Engagement
Golf Services

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with *A Sustainable Winnipeg*, Section 09-1, which directs the Public Service to:

- Create and maintain a community-wide Climate Change Action Plan to reduce Winnipeg's greenhouse gas emissions by 6% below 1998 levels.
- Establish a community-wide greenhouse gas reduction target for 2020 and 2035

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

This report is in accordance with direction provided in the Winnipeg Climate Action Plan and the Council Minute 572, recommendation #6.

SUBMITTED BY

Department: Office of the Chief Administrative Officer
Division: Office of Sustainability
Prepared by: Lindsay Mierau
Date: October 24, 2019
File No:

Attachments:

Attachment 1: Corporate GHG Update and Forecast Report

Attachment 2: Winnipeg Climate Action Plan Summary

Attachment 3: Status update on Short-term Actions (2018-2022)

Minute No. 545

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 2, 2021

Item No. 2 2020 Winnipeg’s Climate Action Plan Annual Report

COUNCIL DECISION:

Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and adopted the following:

1. That this report be received as information.

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 2, 2021**DECISION MAKING HISTORY:**

Moved by Councillor Mayes,

That the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment be adopted.

Carried

Councillor Klein asked to be recorded as having voted against the item in accordance with Rule 47(7) of the Procedure Bylaw.

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On June 16, 2021, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On June 2, 2021, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

COUNCIL DECISION:

On September 20, 2018, Council adopted the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment which included the following:

1. That Winnipeg's Climate Action Plan: Planning for Climate Change – Acting for People (the "Plan"), a copy of which is attached as Attachment "A", be approved for implementation and that the Council decision of September 30, 2009 approving the report titled Corporate and Community-wide Climate Change Action Plans to reduce Greenhouse Gas Emissions in Winnipeg, including all subsequent amendments, be rescinded.
2. That the Winnipeg Public Service review its departmental administrative objectives and plans to determine how they align with the strategic opportunity areas and priority actions identified within the Plan, and report the results to the interdepartmental Climate Change Working Group, as required by the Climate Change Working Group.

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 2, 2021

DECISION MAKING HISTORY (continued):

COUNCIL DECISION (continued):

3. That the Winnipeg Public Service identify budget risks for those projects to be implemented in the short, medium and long term, which are currently underfunded or unfunded, within their yearly budget processes.
4. That the Office of Sustainability apply for external funding, through such funding programs identified in Appendix E of Attachment A, in support of the actions identified in the Plan.
5. That the Winnipeg Public Service undertake detailed greenhouse gas and economic modeling of the Plan to understand the estimated costs and benefits to the City of implementing the Plan.
6. That the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.
7. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

ADMINISTRATIVE REPORT

Title: 2020 WINNIPEG'S CLIMATE ACTION PLAN ANNUAL REPORT

Critical Path: Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz, Acting Manager, Office of Sustainability	M. L. Geer, CPA, CA, Director, Water and Waste Department	N/A	M. Ruta, Interim CAO

EXECUTIVE SUMMARY

This annual report to Council summarizes the accomplishments in 2020, the second year of the Winnipeg's Climate Action Plan (The Plan).

The Plan outlines the City of Winnipeg and the broader community's commitment to work together to reduce greenhouse gas emissions and increase resiliency in the face of a changing climate.

Of the total of 139 actions described in the Plan, 77 of them have been characterized as short term (2018-2022). The Corporate Greenhouse Gas Emissions Update and a detailed status update of each short-term action under The Plan are found in Appendices 1 and 2.

In 2020 and into 2021, major planning initiatives in alignment with The Plan are underway, including OurWinnipeg 2045, Complete Communities 2.0, the Transportation Master Plan, the Transit Master Plan, Winnipeg's Parks and Recreation Strategies, Winnipeg Urban Forest Strategy, and the Poverty Reduction Strategy.

The City also initiated a GHG emissions reduction modeling and financial analysis project, to be completed in 2021. The Community Energy Investment Roadmap will forecast energy use and emissions, and provide an estimation of the costs and benefits of implementing actions needed to meet climate targets.

These major planning initiatives through 2020 and 2021, with an updated policy framework, robust data, modeling and financial analysis, along with national and global climate change action targets of net zero by 2050 will inform the process of updating the Winnipeg Climate Action Plan in 2022.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report.

HISTORY/DISCUSSION

The Winnipeg Climate Action Plan was adopted by City Council in September of 2018. Climate action includes two important aspects: mitigation and adaptation. Mitigation actions focus on reducing the use of fossil fuels to lessen the severity of impacts in the long term. Adaptation actions relate to preparing and planning for the impacts on ongoing climate change that is currently being experienced. While the Plan is focused on mitigation, it includes a call to action to develop a climate resiliency and adaptation strategy, to be included as part of the update process in 2022.

The **Winnipeg's Climate Action Plan – Year 1 Update** report included the following recommendation, which was adopted by Council January 30th, 2020:

That as per Direction 1.2 of Winnipeg's Climate Action Plan (WCAP), the Public Service undertake detailed financial, energy and emissions mapping and modeling to understand the costs and benefits of implementing the Plan. The funding to conduct this modeling, \$200,000, be referred to the 2020 Budget process.

Funding was approved for this project and it is now underway. The public service awarded RFP No. 277-2020 to Sustainability Solutions Group Workers Cooperative on July 2, 2020 to model Winnipeg's Community Energy Investment Roadmap, reviewing GHG emissions, energy and financial modelling. The purpose is to update the City's GHG emissions inventory and to identify strategic actions and investments required to achieve the emissions reduction target as outlined in The Plan, and additional actions to meet the goal of net zero by 2050. The work includes:

1. Updated community-wide energy and emissions inventory that aligns with the 2011 baseline year;

2. Determination of additional mitigation measures or refinements to currently planned measures that will be required to take the city beyond 2030 and to net zero by 2050;
3. Forecast of energy and emissions under two different scenarios: a) business as planned; and b) low carbon scenario (*actions identified in The Plan* with additional and refined actions beyond 2030 to reach net zero by 2050);
4. Estimation of the costs and benefits of implementing the Plan (including additional and refined actions beyond 2030) and provision of recommended priorities.

As of December 2020, data collection activities were largely completed and the consultant is preparing to inventory baseline energy and emissions data. Internal and external stakeholder engagement will take place at strategic milestones through 2021, with the entire project expected to wrap up at the end of 2021. The outcomes of this work will inform City decision-making, contributing to departmental planning, programs and policies, and will inform the process of updating the Winnipeg Climate Action Plan in 2022.

Updates on Short Term Actions (2018-2022)

Of the total of 139 actions described in the Plan, 77 of them have been characterized as short term (2018-2022). These short-term actions provide direction on how the City will achieve its 2030 target of 20 percent GHG emissions reduction. Of the 77 actions identified as short term (2018-2022) priorities:

- 42% of them are accomplished or are underway using existing resources,
- 31% are partially funded;
- 18% require new sources of funding in order to action; and,
- 8% are not yet underway.

A few current City initiatives that align with achieving the actions described in the Plan are highlighted below. A more detailed status update on each short-term action and budget status is provided in Attachment 2.

Strategic Direction #1: Corporate Leadership

In 2020, significant progress was made on GHG and economic modelling of the actions required to reach climate targets through the Community Energy Investment Roadmap. An enhanced methodology was implemented for the City's corporate GHG inventory, increasing the accuracy of the data gathering and reporting. The impacts of COVID-19 in 2020 necessitated advancing food related actions under direction 1.7, including increasing collaboration with the Winnipeg Food Council. An inter-departmental COVID-19 food security working group was established to help meet community needs.

Strategic Direction #2: Empower Community Leaders and Collaborate with Stakeholders

Consultation with a community advisory committee and working group under the Local Energy Access Program (LEAP) continues towards the development of a GHG and energy poverty reduction pilot project. The LEAP pilot project focuses on construction of low carbon energy-efficient affordable housing by selling City-owned lots for \$1 and investing the purchase cost savings towards energy efficiency upgrades. This pilot is part of a new program designed after

the expired William Whyte Pilot Project for the sale of City-owned lands to affordable housing providers.

Strategic Opportunity #3: Advancing Sustainable Transportation

Development of the Winnipeg Transit Master Plan coming forward in 2021, and the Transportation Master Plan coming forward in 2022, address several transportation related actions, including integration of transportation planning with land use planning, and improvements to transit route planning. Drafts of OurWinnipeg 2045 and Complete Communities 2.0 also coming forward in 2021 include provisions to increase the density of urban development along key transportation corridors. Additionally, in 2020, work on the 12 to 20 bus pilot and larger electric bus deployment strategy was completed.

Strategic Opportunity #4: Facilitate Compact, Complete Development and Increase Density

The OurWinnipeg 2045 Development Plan in draft includes Environmental Resilience as one of its six localized sustainable development goals and objectives, policy direction that enables transition to a resilient, low-carbon future. The related companion plan Complete Communities 2.0 draft which also came forward in early 2021 aligns development targets with the land use performance indicator of 50 percent of all new residential construction to take place in strategic infill locations. Together with the Residential Infill Strategy also coming forward in 2021 the Residential Growth Study, and drafting neighbourhood design guidelines support complete communities. Further alignment with the Winnipeg Transit Master Plan also serves to support the actions related to transit oriented development.

Strategic Opportunity #5: Low Carbon and Energy Efficient Buildings

The building energy benchmarking, labelling and disclosure program (Building Energy Disclosure Project) launched in June 2020. In the first nine months of the program, 161 buildings registered to participate. This initiative is aimed at helping Winnipeg commercial and institutional building owners better understand the energy performance of their buildings while supporting overall reductions in greenhouse gas emissions and energy consumption.

Strategic Opportunity #6: Waste Reduction and Diversion

The Residential Food Waste Collection Pilot Program started curbside collection in October, 2020. This pilot program will service about 4,000 homes over two years. As part of the Biosolids Master Plan, over 49 percent of biosolids were diverted from landfill and beneficially used through composting, soil fabrication, and land application. The Summit Soil fabrication pilot project entered year three, using six months' worth of biosolids create enough soil to cover and vegetate approximately 10 hectares of closed landfill.

Strategic Opportunity #7: Community Climate Resiliency

In the Fall of 2019, Mayor Brian Bowman shared a vision to protect and expand our City's immense tree canopy and named it the Million Tree Challenge. The Challenge aims to promote

tree planting and make it so Winnipeggers collectively plant one million trees by the time our City's population reaches one million people. In 2020 over 9,000 trees were planted towards this challenge and a grant was provided to Trees Winnipeg to run the Challenge.

In 2020 work began on the Urban Forestry Strategy. The first phase of public engagement was complete in 2020 with the strategy scheduled to come forward at the end of 2021. The development of this strategy addresses key actions of The Plan, including developing canopy cover targets, and indicators that address public health and climate change considerations. In 2020, the City continued support for urban food production through allotment garden plot rentals, and improvements to zoning by laws for urban agriculture. Due to the pandemic, the City also encouraged residents to garden by supporting Harvest Manitoba's Grow-a-Row program.

These initiatives make progress toward action 7.1 to implement opportunities to improve Winnipeg's resilience and adaptability to the effects of a changing climate.

Corporate GHG Inventory

Total corporate emissions for 2019 amounted to 129,154 tonnes eCO₂. This represents an increase of three percent since 2014. After accounting for increased additional emissions sources in the most recent inventory, emissions have actually decreased by eight percent since 2014.

The buildings sector accounted for a significant portion of the City's energy consumption in 2019 (electricity plus natural gas) at about 37 percent of energy use. This translated to about 23 percent of the City's corporate GHG emissions. In 2019, vehicle fleet emissions approximated 61 percent of the City's total emissions. This is a notable increase from previous years that is largely attributable to increased reporting and tracking (e.g., hauling contracts, commuter travel). The waste sector (water, waste water and corporate waste) accounted for about 16% of the City's emissions.

FINANCIAL IMPACT

Financial Impact Statement

Date: [April 30, 2021](#)

Project Name:

2020 WINNIPEG'S CLIMATE ACTION PLAN ANNUAL REPORT

COMMENTS:

No financial implications related to the recommendations of this report

"Original signed by L. Szkwarek, CPA, CGA"
Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

Planning, Property and Development Department
Public Works Department
Winnipeg Transit
Community Services Department

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through:

OurWinnipeg reference: Section 02-2 ENVIRONMENT - Reduce the environmental impact of our activities, through strategies such as planning for sustainable energy use and greenhouse gas reduction.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

This report is in accordance with direction provided in the Winnipeg Climate Action Plan and the Council Minute 572, recommendation #6.

SUBMITTED BY

Department: Water and Waste Department
Division: Office of Sustainability
Prepared by: B. Raddatz,
Date: May 10, 2021
File No: O-005

ATTACHMENTS:

Attachment 1: Corporate GHG Update and Forecast Report for 2019 Data

Attachment 2: 2020 Status Update on Short-term Actions (2018-2022)

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 28, 2022

REPORTS

Item No. 3 Winnipeg Climate Action Plan – Annual Report

STANDING COMMITTEE RECOMMENDATION:

The Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and recommended to Council:

1. That the report be received as information.

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 28, 2022

DECISION MAKING HISTORY:

Moved by Councillor Nason,

That the recommendation of the Winnipeg Public Service be concurred in and forwarded to the Executive Policy Committee and Council.

Carried

COUNCIL DECISION:

On May 26, 2022, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and adopted the following:

1. That an extension of time of up to 60 days be granted for the Winnipeg Public Service to report back on the Winnipeg Climate Action Plan.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the forgoing.

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On May 18, 2022, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On May 3, 2022, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment submitted the following to the Executive Policy Committee and Council:

1. That an extension of time of up to 60 days be granted for the Winnipeg Public Service to report back on the Winnipeg Climate Action Plan.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the forgoing.

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 28, 2022

DECISION MAKING HISTORY (continued):

COUNCIL DECISION:

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and adopted the following:

1. That Winnipeg's Climate Action Plan: Planning for Climate Change – Acting for People (the "Plan"), a copy of which is attached as Attachment "A", be approved for implementation and that the Council decision of September 30, 2009 approving the report titled Corporate and Community-wide Climate Change Action Plans to reduce Greenhouse Gas Emissions in Winnipeg, including all subsequent amendments, be rescinded.
2. That the Winnipeg Public Service review its departmental administrative objectives and plans to determine how they align with the strategic opportunity areas and priority actions identified within the Plan, and report the results to the interdepartmental Climate Change Working Group, as required by the Climate Change Working Group.
3. That the Winnipeg Public Service identify budget risks for those projects to be implemented in the short, medium and long term, which are currently underfunded or unfunded, within their yearly budget processes.
4. That the Office of Sustainability apply for external funding, through such funding programs identified in Appendix E of Attachment A, in support of the actions identified in the Plan.
5. That the Winnipeg Public Service undertake detailed greenhouse gas and economic modeling of the Plan to understand the estimated costs and benefits to the City of implementing the Plan.
6. That the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.
7. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

ADMINISTRATIVE REPORT

Title: 2021 WINNIPEG'S CLIMATE ACTION PLAN ANNUAL REPORT

Critical Path: Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz, RPP Manager, Office of Sustainability	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste	N/A	M. Jack

EXECUTIVE SUMMARY

This annual report to Council summarizes the accomplishments in 2021, the third year of the Winnipeg Climate Action Plan (Plan).

The Plan outlines the City of Winnipeg and the broader community's commitment to work together to reduce greenhouse gas emissions and increase resiliency in the face of a changing climate.

Of the total 139 actions described in the Plan, 77 of them have been characterized as short term (2018-2022). The 2020 Corporate Greenhouse Gas (GHG) Emissions Update and a detailed status update of each short-term action under the Plan are found in Appendices 1 and 2.

In 2021, major planning initiatives in alignment with The Plan were underway, including OurWinnipeg 2045, Complete Communities 2.0, the Transportation Master Plan, the Transit Master Plan, Winnipeg's Parks and Recreation Strategies, and the Winnipeg Urban Forest Strategy.

The City also initiated a GHG emissions reduction modeling and financial analysis project, which was completed in 2022. The Community Energy Investment Roadmap forecasts energy use and emissions, and provides an estimation of the costs and benefits of implementing actions needed to meet climate targets (to be presented for Council consideration in 2022).

These major planning initiatives, with an updated policy framework, robust data, modeling and financial analysis, along with national and global climate change action targets of net zero by 2050, will inform the process of updating the Winnipeg Climate Action Plan in 2023.

RECOMMENDATIONS

That Council receive the report as information.

REASON FOR THE REPORT

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report.

HISTORY/DISCUSSION

The Winnipeg Climate Action Plan (the Plan) was adopted by City Council in September of 2018. Climate action includes two important aspects: mitigation and adaptation. Mitigation actions focus on reducing the use of fossil fuels to lessen the severity of impacts in the long term. Adaptation actions relate to preparing and planning for the impacts on ongoing climate change that is currently being experienced. While the Plan is focused on mitigation, it includes a call to action to develop a climate resiliency and adaptation strategy, to be included as part of the update process in 2023.

The **Winnipeg's Climate Action Plan – Year 1 Update** report included the following recommendation, which was adopted by Council January 30th, 2020:

That as per Direction 1.2 of Winnipeg's Climate Action Plan (WCAP), the Public Service undertake detailed financial, energy and emissions mapping and modeling to understand the costs and benefits of implementing the Plan. The funding to conduct this modeling, \$200,000, be referred to the 2020 Budget process.

With the assistance of the project's consultant (Sustainable Solutions Group) the Public Service collaborated with internal and external stakeholders to develop the Community Energy Investment Roadmap in 2021, which included detailed updates of Greenhouse Gas (GHG) emissions, energy and financial modelling. The purpose was to update the City's GHG emissions inventory and to identify strategic actions and investments required to achieve the emissions reduction target as outlined in the Plan, and additional actions to meet the goal of net zero by 2050. The work includes:

1. Updated community-wide energy and emissions inventory;
2. Determination of additional mitigation measures or refinements to currently planned measures that will be required to take the city beyond 2030 and to net zero by 2050;
3. Forecast of energy and emissions under two different scenarios: a) business as planned; and b) low carbon scenario (*actions identified in The Plan* with additional and refined actions beyond 2030 to reach net zero by 2050);
4. Estimation of the costs and benefits of implementing the Plan (including additional and refined actions beyond 2030) and provision of recommended priorities.

As of December 2021, the analysis and updating of emissions was completed and internal and external stakeholder engagement was in its final stages. The entire project will wrap up, and

the report will be presented for Council's consideration in 2022. The outcomes of this work will inform City decision-making, contributing to departmental planning, programs and policies, and will inform the process of updating the Winnipeg Climate Action Plan in 2023.

Updates on Short Term Actions (2018-2022)

Of the total 139 actions described in the Plan, 77 of them have been characterized as short term (2018-2022). These short-term actions provide direction on how the City will achieve its 2030 target of 20 percent GHG emissions reduction. Of the 77 actions identified as short term (2018-2022) priorities:

- 53% are green (significant progress/complete)
- 33% are yellow (initiated/moderate progress)
- 14% are red (not yet initiated)

A few current City initiatives that align with achieving the actions described in the Plan are highlighted below. A more detailed status update on each short-term action and budget status is provided in Appendix 2.

Strategic Direction #1: Corporate Leadership

In 2021, GHG and economic modelling of the actions required to reach Net Zero climate targets in consultation with internal and external stakeholders was completed through the Community Energy Investment Roadmap. An enhanced methodology was implemented for the City's corporate GHG inventory, increasing the accuracy of the data gathering and reporting. The Winnipeg Fleet Management Agency continues to investigate the feasibility of incorporating electric vehicles into its fleet. The impacts of COVID-19 in 2021 continued raising the importance of food-related actions under direction 1.7, including increasing collaboration with the Winnipeg Food Council. In 2021, coordination activities for the Winnipeg Food Council were incorporated in the Office of Sustainability. This allowed for increased collaboration and support for the Food Council within the Public Service.

Strategic Direction #2: Empower Community Leaders and Collaborate with Stakeholders

The Local Energy Access Program (LEAP) pilot project was established to focus on construction of low carbon energy-efficient affordable housing by selling City-owned lots for \$1 and investing the purchase cost savings towards energy efficiency upgrades. LEAP is supported by the Federation of Canadian Municipalities and was developed in consultation with community stakeholders.

Strategic Opportunity #3: Advancing Sustainable Transportation

With the approval of the Winnipeg Transit Master Plan in 2021, and the Transportation Master Plan coming forward in 2023, several transportation-related actions, including the integration of transportation planning with land use planning, and improvements to transit route planning, were advanced. OurWinnipeg 2045 and Complete Communities 2.0 came forward in 2021 and include provisions to increase the density of urban development along key transportation corridors. Additionally, in 2021, transition planning for Phase 1 of the Transit Master Plan (including a roll out of approximately 100 Zero Emission Buses) was completed and related funding has been applied for.

Strategic Opportunity #4: Facilitate Compact, Complete Development and Increase Density

The OurWinnipeg 2045 Development Plan includes Environmental Resilience as one of its six localized sustainable development goals and objectives, policy direction that enables transition to a resilient, low-carbon future. OurWinnipeg and Complete Communities 2.0 were given second reading by Council in July 2021 (and third reading on May 26, 2022, subsequent to the reporting period of this report). Design guidelines for New Communities will be considered as part of the plan implementation following adoption of Complete Communities Directions Strategy. The Residential Infill Strategy was approved by Council in June 2021. Further alignment with the Winnipeg Transit Master Plan also serves to support the actions related to transit oriented development.

Strategic Opportunity #5: Low Carbon and Energy Efficient Buildings

The building energy benchmarking, labelling and disclosure program (Building Energy Disclosure Project, BEDP) completed its first year. This initiative is aimed at helping Winnipeg commercial and institutional building owners better understand the energy performance of their buildings while supporting overall reductions in greenhouse gas emissions and energy consumption. Energy performance scorecards were provided to all participants, highlighting reported energy use information and providing comparison to the National Median Site Energy Use Intensity. The first annual BEDP report was also circulated to all BEDP participants focusing on detailed results by building type, case studies, key findings and next steps. This report is also posted on the project's webpage on the City of Winnipeg website.

Strategic Opportunity #6: Waste Reduction and Diversion

The Residential Food Waste Collection Pilot Program completed its first year. This pilot program services about 4,000 homes over two years. As part of the Biosolids Master Plan, 100 percent of biosolids were diverted from landfill and beneficially used through composting, soil fabrication, and land application. In 2021, Council approved funding to launch a food waste reduction campaign in partnership with the Winnipeg Food Council and Love Food Hate Waste Canada. In June 2021, a three-year partnership agreement was signed with Love Food Hate Waste Canada to continue to support Winnipeg residents in reducing their food waste using a variety of communications methods. These programs add to the benefits of the organic waste diversion of the ongoing leaf and yard waste composting program, and the compost giveaway events and commercial compost sales.

Strategic Opportunity #7: Community Climate Resiliency

In 2021, work continued on the Urban Forestry Strategy, including Phase 1 public engagement summary reports that were made public. In May 2021, a *State of the Urban Forest* report was released and the draft Urban Forestry Strategy is currently under development. The development of this strategy addresses key actions of the Plan, including developing canopy cover targets, and indicators that address public health and climate change considerations. In 2021, the City continued support for urban food production through allotment garden plot rentals, and improvements to zoning by-laws for urban agriculture. Due to the pandemic, the City also encouraged residents to garden by supporting Harvest Manitoba's Grow-a-Row program. These initiatives make progress toward Action 7.1: To implement opportunities to improve Winnipeg's resilience and adaptability to the effects of a changing climate.

Corporate GHG Inventory

Total corporate emissions for 2020 amounted to 114,610 tonnes CO₂e. The global pandemic began in March 2020 and this had a significant impact on energy consumption. Energy consumption dropped by 17 percent overall, and emissions dropped by 11 percent.

The buildings sector accounted for a significant portion of the City's energy consumption in 2020 (electricity plus natural gas) at about 34 percent of energy use. This translated to about 20 percent of the City's corporate GHG emissions. In 2020, vehicle fleet emissions approximated 63 percent of the City's total emissions. The waste sector (including waste and products of wastewater processes) accounted for about 17 percent of the City's emissions.

FINANCIAL IMPACT

Financial Impact Statement

Date:

May 4, 2022

Project Name:

2021 WINNIPEG'S CLIMATE ACTION PLAN ANNUAL REPORT

COMMENTS:

No financial implications related to the recommendations of this report

Lucy Szkwarek, CPA, CGA

Lucy Szkwarek, CPA, CGA

Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

- Planning, Property and Development
- Public Works
- Winnipeg Transit
- Community Services

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through:

OurWinnipeg reference: Section 02-2 ENVIRONMENT - Reduce the environmental impact of our activities, through strategies such as planning for sustainable energy use and greenhouse gas reduction.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

This report is in accordance with direction provided in the Winnipeg Climate Action Plan and the Council Minute 572, recommendation #6.

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

The Winnipeg Climate Action Plan aligns with the Winnipeg Poverty Reduction Strategy as both place focus on building a more resilient, sustainable, and equitable city for all residents. The Plan and the Winnipeg Poverty Reduction Strategy both represent the intention for increased resiliency of our communities, municipalities, and the city as a whole, while also placing emphasis on providing increased support to residents experiencing poverty related to the effects of climate change.

SUBMITTED BY

Department: Water and Waste Department
Division: Office of Sustainability
Prepared by: L. Mierau
Date: May 27, 2022
File No: O-005

Attachments:

Appendix 1: Corporate GHG Update and Forecast Report for 2020 Data

Appendix 2: 2021 Status Update on Short-term Actions (2018-2022)

Appendix 1: Corporate GHG Update and Forecast Report for 2020 Data

City of Winnipeg Corporate Greenhouse Gas Emissions Inventory and Forecast, 2013 to 2020

A. INTRODUCTION

Purpose

The purpose of this report is to provide an update on the City's corporate greenhouse gas (GHG) inventory for 2020. The report provides an update on the City's GHG emissions profile for the time period of interest, and presents the results of modelling exercises to forecast future emissions under different GHG emission reduction scenarios. Opportunities for further reductions in emissions are described as well.

B. CORPORATE GHG INVENTORY (2013-2020)

Table 1 and Table 2, below, show the total energy consumption and Greenhouse Gas Emissions (GHGs) for City operations for the year ending December 31, 2020.

Table 1 shows **Vehicle fuel** from operations and contractors was the largest energy consumer (41% of all energy) and largest eCO₂ emitter for the year (63% of all emissions). **Buildings** not involved in providing water & wastewater services were the second largest consumer of energy and emitter of GHGs (34% and 20%, respectively). **Water & wastewater** services were the third largest consumer of energy (20%), and fourth highest emitter of GHGs (6%), after **Corporate waste** (11% of all emissions, but does not have an energy consumption component). **Streetlights & Traffic signals** consumed the least energy (5%) and were less than one percent of total emissions.

Table 1 - Energy Costs and eCO₂ Emission by Sector

Sector	Energy (GJ)	% Energy (GJ)	Total eCO ₂ (t)	% ECO ₂ (t)
Buildings	770,193	34%	22,385	20%
Vehicle Fuel	928,199	41%	72,010	63%
Streetlights	109,565	5%	40	0%
Water and Sewage	445,962	20%	7,079	6%
Corporate Waste	-		13,097	11%
Total	2,253,918 GJ	100%	114,610 t	100%

Table 2 shows that **Diesel fuel** makes up the largest portion of all energy consumed by City operations, at 35% of total consumption, and 48% of GHGs. **Electricity** is the next highest, at 33% of consumption. Electricity's emissions, however, is just 1% of total emissions, owing to the low-carbon

profile of Manitoba's electrical grid. **Natural gas** consumption accounts for 26% of total consumption and 25% of emissions. **Gasoline** (in an ethanol blend) accounts for 15% of emissions, but just 6% of energy consumption. **Aviation** fuel's impacts are negligible.

Table 2 - Energy Costs and eCO₂ Emissions by Source

Energy Type	Total Use	Energy (GJ)	% Energy (GJ)	Total eCO ₂ (t)	% eCO ₂ (t)
Electricity	203,749,792 kWh	733,499	33%	265	1%
Natural Gas	15,410,370 m ³	592,221	26%	29,239	25%
Ethanol Blend (E8.5)	4,025,477 litres	138,400	6%	16,750	15%
Biodiesel Blend (B2)	20,496,650 litres	783,956	35%	54,856	48%
Aviation	162,015 litres	5,843	0%	404	0%
Waste	-	-		13,097	11%
Total	-	2,253,918	100%	114,610	100%

Table 3 and Figure 1, below, show year to year changes in emissions arising from energy consumption for the City. Table 1 shows a net 11% decrease from 2019 to 2020, coming from decreases in emissions across all sectors with the exception of **Waste**, which had an increase of 12% from 2019.

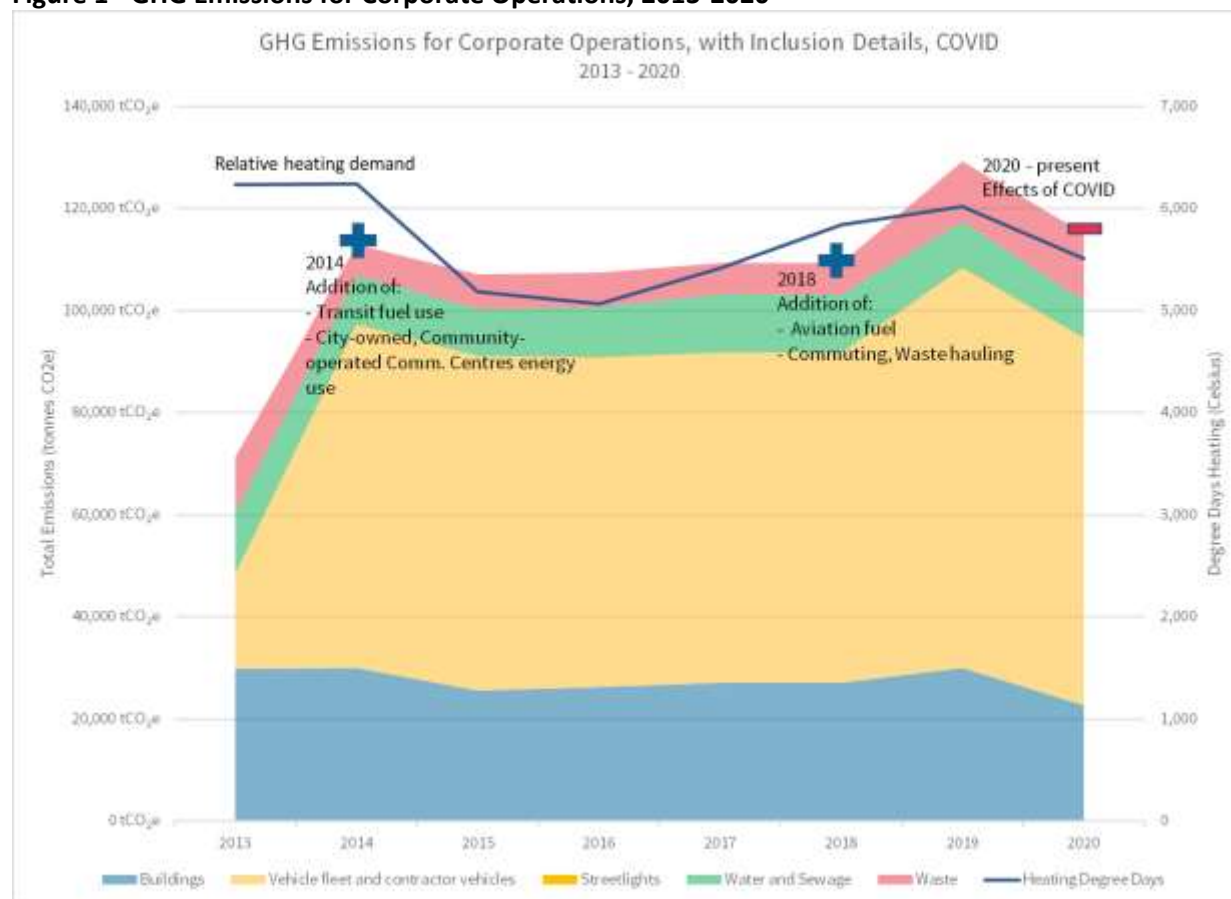
Table 3 - Total Annual Corporate Emissions by Sector, 2013-2020 (tonnes CO₂e)

Year	2013	2014	2015	2016	2017	2018	2019	2020
Buildings	29,840 t	29,983 t	25,633 t	26,258 t	27,102 t	27,102 t	29,951 t	22,385 t
Vehicle Fuel Use	18,569 t	67,333 t	65,435 t	64,584 t	64,644	64,644 t	78,439 t	72,010 t
Street Lights	125 t	125 t	125 t	125 t	125 t	125 t	125 t	40 t
Water & Sewage	12,002 t	9,560 t	9,108 t	9,678 t	11,336 t	11,336 t	8,897 t	7,079 t
Corporate Waste	10,923 t	5,840 t	6,872 t	6,756 t	6,158 t	6,158 t	11,741 t	13,097 t
Total	73,472 t	114,855 t	109,188 t	109,417 t	111,382 t	111,383 t	129,154 t	114,610 t

Figure 1 shows the trajectory of inventories from 2013 to 2020, and includes notes to help understand the reasons behind a number of significant deviations shown. Improvements of process in 2014 and 2018 increased the breadth of scope for the inventory. This resulted in increases in reported sectoral consumption and emissions, relative to what those sectors would have reported using the previous years' methodology. Thus, 2014 shows a significant increase from 2013, and 2018 shows a fairly constant level from the previous year where repeating the methodology of 2017 for the 2018 data would likely have shown a decrease. The blue line of relative heating demand shows an increase in heating demand from 2016-2019, and the relative stability of the inventory over that time speaks to the effectiveness of some city measures in reducing emissions.

The COVID pandemic began in March 2020, and had a significant impact on operational energy consumption. Energy consumption dropped by 17% overall, and emissions dropped by 11%, driven by significant decreases **Building** operations (23% decrease) and **Vehicle fuel** (9% decrease).

Figure 1 - GHG Emissions for Corporate Operations, 2013-2020



2020 in depth

Buildings

The COVID pandemic's effects on building consumption are apparent across most of the building portfolio of the City. Multiple lockdowns in 2020 reduced energy consumption across the City's portfolio of buildings to bare-minimum energy use, decreasing electricity use by 14% and natural gas use by 22% (higher in recreation focused buildings, lower in essential service buildings).

Vehicle Fuel & Transportation

Generally, fuel use in 2020 was consistent with levels seen in 2019, with one large exception. Transit's reduced service dropped fuel use for that department by 2.28 million litres of diesel fuel, or 13% from 2019. This was the major contributor to the 13% decrease in energy consumed from 2019.

Streetlights

Safety refinements in October of 2020 to the traffic signaling protocol meant an increase of 5% in energy consumption per hour. These improvements ended the practice of putting streetlights on blinking yellow/blinking red late at night, and instead continued a normal operation cycle. This change had a negligible impact on total GHGs for the City.

Water and Sewage

Water and Sewage electrical consumption dropped 20% and natural gas consumption dropped 8% across the portfolio between 2019 and 2020. This comes from an 18% decrease in treated wastewater.

Waste

Waste increased 12% from 2019 to 2020. This coincides with an 8% decrease in collected and reported recycling.

Appendix 2: 2021 Status Update on Short-term Actions (2018-2022)

Strategic Opportunity #1: Corporate Leadership

Key Direction 1.1 Cultivate a Corporate Culture that Values Climate Action (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Celebrate staff taking initiative in corporate and community climate action.	Initiated
Incorporate a Climate Action Plan alignment section into all Council reports.	Complete
Integrate sustainability and climate action into procurement standards which can demonstrate increasing impact from year to year.	Moderate progress
Encourage department ownership of climate mitigation measurement, ongoing reporting and implementation through cross-departmental working group	Moderate progress
Key Direction 1.2: Understand and Integrate Business and Economic Implications of Climate Action into Decision Making Processes (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Undertake detailed greenhouse gas and economic modeling of the Climate Action Plan to understand the estimated costs and benefits to the City of implementing the Plan.	Complete
Establish a dedicated Climate Action Reserve Fund to support implementation of this Action Plan	Initiated
Create an annual capital program for departmental sustainability and climate initiatives. Applications should be accepted by all departments	Not started
Incorporate climate action priorities into the annual budget process to ensure the City has resources to implement priority projects	Not started

Key Direction 1.3: Implement Low Carbon and Energy Efficient City Facilities and Buildings (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Implement energy benchmarking for all City-owned Buildings (using Portfolio Manager) to identify opportunities for improved energy performance	Significant progress
Conduct an energy audit of all City facilities to seek opportunities to implement equipment and programs that will maximize energy performance	Moderate progress
Key Direction 1.4: Encourage Sustainable Transportation Options (Primary Responsibility: Winnipeg Fleet Management Agency)	
Short Term Action (2018-2022)	Progress
Ongoing implementation of the Green Fleet Plan (2010) to reduce vehicle emissions	Moderate progress
Conduct a comprehensive business case evaluation of the City electric vehicle pilot project and look to accelerate the electrification of the City's fleet	Significant progress
Key Direction 1.5: Reduce Employee Vehicle Kilometers Travelled (VKT) and associated GHGs (Primary Responsibility: Winnipeg Parking Authority)	
Short Term Action (2018-2022)	Progress
Implement the 'Intuitive Routing System' program, which provides information to service providers conducting work on behalf of the City on the most optimal route for completing their required visits each day while ensuring minimal vehicle kilometers travelled. Benefits from a climate change mitigation lens include, but are not limited to: reduced fuel, reduced paper and minimized distance travelled for unscheduled enforcement requests	Complete

Key Direction 1.6: Reduce Consumption and Increase Waste Diversion (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Building on direction from the Corporate Waste Strategy (2015), examine procurement policies to look for opportunities to reduce consumption (e.g. paper products)	Moderate progress
Key Direction 1.7: Increase Opportunities to Respond to Food Needs Throughout Winnipeg and Increase Access to Local and Sustainable Food (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Support local food procurement at City of Winnipeg facilities	Initiated
Work with Winnipeg Food Council to advise on opportunities for greenhouse gas mitigation, including local food procurement, support for urban agriculture, and promoting plant-based diets	Significant progress
Supported by the Winnipeg Food Council, create the Winnipeg Agricultural and Food Strategy to improve food security and address food system issues with respect to climate mitigation and resiliency	Initiated
Key Direction 1.8: Ensure that City Land Use, Transportation and Built Environment Policy, Bylaw, and Regulation Recognize the Council-Approved Climate Protection and Mitigation Priorities (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Incorporate climate risks and mitigation targets and opportunities related to land use, transportation and development into <i>OurWinnipeg</i> review that is currently underway. This will necessitate a review of all four Direction Strategies (<i>Sustainable Winnipeg, Sustainable Water and Waste, Sustainable Transportation</i> and <i>Complete Communities</i>).	Significant progress
Incorporate climate risks and mitigation targets and opportunities that relate to parks and recreation development as part of the Recreation and Parks Strategies and Urban Forestry Strategic Plan.	Significant progress

Incorporate climate risks and mitigation targets and opportunities into the anticipated Transportation Master Plan update and the Winnipeg Transit Master Plan.	Moderate progress
Incorporate climate risks and mitigation targets and opportunities into the Comprehensive Integrated Waste Management Strategy (CIWMS).	Complete
Key Direction 1.9 Work with Indigenous Communities, the Province, and Federal Government to Advance Climate Action (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Collaborate with senior levels of government for increasing investment in programs supporting climate action.	Moderate progress
Leverage funding from the province and federal governments to advance climate action.	Moderate progress
Engage Winnipeg's Indigenous population on issues around climate change	Initiated

Strategic Opportunity #2: Empower Community Leaders and Collaborate with Stakeholders

Key Direction 2.1 Engage Community Leadership and Associations on an Ongoing Basis to Help Shape Implementation of the Climate Action Plan (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Establish a Community Advisory Committee representative of the local population and a series of Community Action Teams to provide strategic advice and guidance during the implementation of the Plan. The Action Teams will support collaboration amongst the City and community in advancing action. Establish clear roles and responsibilities, terms of references, and transparency in roles, participation, and outcomes.	Initiated
Engage with the Mayor's Indigenous Advisory Circle twice a year to solicit feedback on actions, priorities, and opportunities for engaging Winnipeg's Indigenous community.	Initiated

Key Direction 2.2: Develop Public Education and Awareness Campaigns related to Sustainable Transportation (Primary Responsibility: Public Works Department)	
Short Term Action (2018-2022)	Progress
With every new transit, cycling or pedestrian infrastructure investment, launch an education and awareness campaign targeting residents who live and work in the areas served by the infrastructure to gain the most from the City's investments in infrastructure (including GHG emissions reductions)	Moderate progress
Key Direction 2.3: Create Conditions to Enable Community Climate Action (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Develop and implement a strategy to empower and celebrate community-led climate action successes by advising on funding opportunities, technical expertise, and facilitating organization/industry/government linkages	Initiated

Strategic Opportunity #3: Advancing Sustainable Transportation – Increase Mobility Options and Shift to Zero Emission Vehicles

Key Direction 3.1 Increase Use and Efficiency of Public Transit Systems (Primary Responsibility: Winnipeg Transit)	
Short Term Action (2018-2022)	Progress
Integrate and align transportation master planning with land use planning by conducting a comprehensive review of transportation and development bylaw, policy and regulation for alignment with OurWinnipeg	Complete
Deliver continuous improvement in transit service with a focus on customer service, reliability, route connectivity, and public education	Complete

Improve existing park and ride services, and increase the total number throughout the City. Explore partnerships to increase convenient park and ride services. Work with retailers with large surplus parking close to transit services and with the Winnipeg Metro Region to increase availability of park and rides near the City boundary, to facilitate ridesharing across the region	Significant progress
Improve active transportation connectivity to transit services by installing sidewalks and cycling routes to link stops with the surrounding community, and provide bike racks at stops and on buses	Significant progress
Key Direction 3.2: Increase the Density of Urban Development Along Key Transit Corridors (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Implement the policies included in the Transit Oriented Development Handbook, which guides and facilitates mixed-use, pedestrian-oriented infill development along high frequency transit corridors	Significant progress
Align transit route planning with growth and development trends to ensure neighbourhoods undergoing transition have convenient and frequent transit services	Complete
Key Direction 3.3: Design New Suburban Communities to Enable Enhanced Transit Services and Access to Transit Corridors (Primary Responsibility: Winnipeg Transit)	
Short Term Action (2018-2022)	Progress
Require sidewalks in new residential developments to ensure safe walking routes to transit stops	Significant progress
Ensure street network layout in new communities forms an overarching grid pattern with direct connections to adjacent neighbourhoods to allow for convenient and efficient transit routes along major streets	Complete
Key Direction 3.4: Increase Active Transportation Rates (Primary Responsibility: Public Works Department)	
Short Term Action (2018-2022)	Progress
Accelerate the implementation of the Pedestrian and Cycling Strategies (e.g. through increased funding and staffing)	Significant progress

Continue to fund the Bike Education and Skills Training Program currently run by the Green Action Centre in partnership with Seven Oaks School Division and MPI. Work with partners to pilot, improve, and expand the program to other school divisions	Significant progress
Continue to fund and develop W.R.E.N.C.H, an organization focusing on core area education and outreach on bike repair	Significant progress
Continue to partner and promote initiatives that encourage active transportation (e.g., Bike to School Month, Commuter Challenge)	Significant progress
Enhance operation and maintenance of pedestrian and cycling facilities during winter months through re-prioritization of snow-clearing activities, assessing equipment needs, and engaging the active transportation community	Significant progress
Update the City's Snow Clearing Priorities to align with sustainable transportation modal shift goals. Adopt Priority 1 Pedestrian and Cycling snow clearing network Policy and associated budget that is separate and distinct from road priority snow clearing routes	Significant progress
Key Direction 3.5: Reduce Traffic Congestion (Primary Responsibility: Public Works Department)	
Short Term Action (2018-2022)	Progress
Adopt intelligent railway crossing measurement and compensation mechanisms that reduce congestion due to railway crossings	Initiated
Adopt intelligent and automated signal timing systems that adapt signal timings to weather and traffic conditions, alleviating congestion and reducing transit times	Initiated
Improve clarity and precision of Transit services through enhanced data analytics and insights into Transit service consumption and delivery	Significant progress

Key Direction 3.6: Increase the Use of Electric Vehicles (Primary Responsibility: Public Works Department)	
Short Term Action (2018-2022)	Progress
Develop an Electric Vehicle Strategy for Winnipeg	Initiated
Partner with Red River College's Electric Vehicle Technology and Education Centre (EVTEC) to develop an education and information program to inform citizens about the latest developments and opportunities related to electric vehicles, charging infrastructure and policies	Not started
Key Direction 3.7: Utilize Zero Emission Buses (Primary Responsibility: Winnipeg Transit)	
Short Term Action (2018-2022)	Progress
Building on the momentum of the Electric Bus Pilot Project, plan for and initiate the deployment of electric buses at a larger scale	Complete
Prepare a transition plan outlining approaches to network integration, facility needs (charging facilities and storage), maintenance requirements and expected training considerations	Significant progress
Leverage funds from the Government of Manitoba or federal government to support the planning, capital investment, and operating costs associated with the shift	Initiated

Strategic Opportunity #4: Facilitate Compact, Complete Development and Increase Density

Key Direction 4.1 Increase Strategic Infill Development That Provides Access to and Capitalizes on Existing and Planned Corridors with Frequent Transit Service (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Complete the Residential Infill Strategy which will provide direction for infill development that supports complete communities and increased mobility options. Implementation tools that should be considered include innovative financial incentives (e.g. taxation, permits), non-financial incentives (e.g. streamlining permit process) and opportunities to enhance customer service by establishing clearer systems and simpler permitting pathways to help reduce processing times	Complete
Complete the OurWinnipeg Residential Growth Study which will identify priority areas for residential growth within Winnipeg	Complete
Key Direction 4.2: Ensure New Areas of Growth are Designed According to the Principles of Complete Communities (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Develop neighbourhood design guidelines and other tools that incorporate design elements essential to support a shift to sustainable modes of travel and which capitalize on opportunities to use passive renewable energy (e.g. street and lot orientation to capture passive solar energy)	Significant progress
Key Direction 4.3: Pursue Transit-Oriented Development (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
In new transit-oriented development, ensure there are active transportation linkages and connections to facilitate a connected diverse and sustainable transportation network	Complete

Gain further insight into the opportunities and constraints to transit-oriented development through the current Eastern Corridor Study	Significant progress
Key Direction 4.4: Support Redevelopment of Former Commercial and Industrial Lands into Active Use (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Develop a Brownfield Redevelopment Strategy for public and private lands. Implementation tools that should be considered include financial incentives to encourage redevelopment of key sites, development approval process incentives that encourage private sector investment into redevelopment activities, and streamlined processes	Not started

Strategic Opportunity #5: Low Carbon and Energy Efficient Buildings

Key Direction 5.1 Increase Energy Performance of Existing Buildings (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Advance a business case analysis to support the design and development of a residential and commercial energy performance program that includes both financial and non-financial incentives	Not started
Review City by-laws to identify opportunities to facilitate retrofits and renovations that improve building energy performance, and/or increase the presence of renewable energy technologies	Not started
Work with the Manitoba Chapter of the Canada Green Building Council and Manitoba Hydro to generate Winnipeg-specific energy performance data for existing buildings with a goal of strategically targeting the highest emitting buildings to ensure the greatest return on investment	Significant progress
Work with key stakeholder groups to accelerate the implementation of an energy performance labelling program for existing and new buildings	Significant progress

Key Direction 5.2: Improve Energy Performance of New Buildings (Primary Responsibility: Planning, Property and Development Department)	
Short Term Action (2018-2022)	Progress
Complete a review of existing practices used to enforce existing Energy Codes and determine if there are opportunities for continuous improvement and innovation	Complete
Review City by-laws to identify opportunities to help facilitate the innovative application of technologies that reduce energy use, and/or increase the presence of renewable energy technologies	Not started
Key Direction 5.3: Increase Access to Educational Materials (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Work with American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), Building Energy Management Manitoba (BEMM), CaGBC, BOMA, Sustainable Buildings Manitoba and other key stakeholders (such as builders) to develop and offer courses to support green building standards	Moderate progress
Work with American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), Building Energy Management Manitoba (BEMM), CaGBC, BOMA, Sustainable Buildings Manitoba and other key stakeholders to provide access to locally-sourced (when possible) green building material resources.	Moderate progress

Strategic Opportunity #6: Waste Reduction and Diversion

Key Direction 6.1 Reduce Consumption and Increase Waste Diversion from Residential, Commercial and Industry (Primary Responsibility: Water and Waste Department)	
Short Term Action (2018-2022)	Progress
Implement direction from the Comprehensive Integrated Waste Management Strategy to advance the priority of organic material diversion from landfill	Significant progress
Continue to invest in educational and awareness programming to help maximize waste diversion (i.e. recycling and organics)	Complete

Key Direction 6.3: Utilize Biosolids in Agriculture and Landscaping Industries (Primary Responsibility: Water and Waste Department)	
Short Term Action (2018-2022)	Progress
Continue to work with key stakeholders to accelerate the implementation of the Biosolids Master Plan and maximize the diversion of biosolids from landfill	Complete
Strategically support (incentives, pilot projects, etc.) the application of biosolids in agriculture and the use of biosolids in soil manufacturing	Complete
Key Direction 6.4: Support Integrated Resource Recovery Opportunities (Primary Responsibility: Water and Waste Department)	
Short Term Action (2018-2022)	Progress
Complete a feasibility analysis to determine the value of investing in integrated resource recovery projects (including capture and reuse of methane and combined heat and power) within the City's wastewater facilities and landfills	Complete

Strategic Opportunity #7: Community Climate Resiliency

Key Direction 7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate (Primary Responsibility: Office of Sustainability)	
Short Term Action (2018-2022)	Progress
Develop a Climate Resiliency Strategy. Ensure the Strategy considers the cobenefits and opportunities for alignment with the City's climate mitigation and adaptation efforts	Not started
Encourage climate-friendly landscaping in residential, commercial and industrial buildings	Not started
Launch a public awareness campaign to highlight opportunities for residential climate resilience initiatives, including backyard composting and use of rain barrels	Not started

Explore regional opportunities to better connect the ecological network to add resiliency to Winnipeg and surrounding municipalities	Not started
Key Direction 7.2: Increase and Preserve Tree Canopy (Primary Responsibility: Public Works Department)	
Short Term Action (2018-2022)	Progress
Continue and explore opportunities to expand the Winnipeg Releaf Program	Significant progress
Continue partnership with the University of Winnipeg and Trees Winnipeg to map the City's canopy cover and to determine canopy cover targets for the city overall and for various land use categories	Significant progress
Prepare an Urban Forestry Strategic Plan that includes key indicators based on public health and climate mitigation considerations. The Strategic Plan should recognize and consider different strategies for Winnipeg's diverse communities, including new, developing and mature neighbourhoods	Significant progress
Continue to work with neighbourhoods/communities to ensure equal access to resources and funds that facilitate urban forest initiatives. In these cases, the City should consider how best to enable community organizations or other neighbourhood scale forestry investment initiatives	Initiated

REPORTS

Item No. 4 Winnipeg Climate Action Plan – 2022 Annual Report

STANDING COMMITTEE RECOMMENDATION:

The Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and recommended to Council:

1. That the report be received as information.
2. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.
3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Minutes – Standing Policy Committee on Water, Waste and Environment – June 23, 2023

DECISION MAKING HISTORY:

Moved by Councillor Gilroy,

That the recommendation of the Winnipeg Public Service be concurred in and forwarded to the Executive Policy Committee and Council.

Carried

COUNCIL DECISION:

On May 30, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That an extension of time of up to 60 days be granted for the Winnipeg Public Service to report back with the Winnipeg Climate Action Plan Annual Report, including the following:
 - A. Review the Climate Action Plan to highlight the specific areas and strategic directions where the City needs to invest, and improve departmental coordination under the Office of the CAO to help meet our long-term targets.
 - B. Provide an update on the collaboration with other levels of government for increasing investment in programs supporting climate action, and any other initiatives that will help the City meet its targets.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the forgoing.

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On May 16, 2023, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION (continued):

On May 1, 2023, the Standing Policy Committee on Water, Waste and Environment submitted the following to the Executive Policy Committee and Council:

Minutes – Standing Policy Committee on Water, Waste and Environment – June 23, 2023

DECISION MAKING HISTORY (continued):

STANDING COMMITTEE RECOMMENDATION (continued):

1. That an extension of time of up to 60 days be granted for the Winnipeg Public Service to report back on the matter.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

David Grant submitted a communication with respect to the matter.

COUNCIL DECISION:

On June 21, 2022, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment, and adopted the following:

1. That the Winnipeg Public Service be directed to report back on the following during its annual report on the Winnipeg Climate Action Plan in 2023:
 - A. Review the Climate Action Plan to highlight the specific areas and strategic directions where the City needs to invest, and improve departmental coordination under the Office of the CAO to help meet our long-term targets.
 - B. Provide an update on the collaboration with other levels of government for increasing investment in programs supporting climate action, and any other initiatives that will help the City meet its targets.
2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

On September 20, 2018, Council adopted the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment, which included the following:

6. That the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

ADMINISTRATIVE REPORT

Title: Winnipeg Climate Action Plan – 2022 Annual Report

Critical Path: Standing Policy Committee on Water, Waste and Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz, RPP, MCIP Manager, Office of Sustainability	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste Department	N/A	M. Jack

EXECUTIVE SUMMARY

This report provides an outline of climate action and policy development in 2022. 2022 marked the end of the Winnipeg Climate Action Plan (WCAP) short term actions, and significant updates to the City's climate goal through OurWinnipeg 2045. In alignment with federal and international targets, OurWinnipeg 2045 targets net zero emissions by 2050. This replaces previous climate targets from 2018 identified in the WCAP.

The Community Energy Investment Roadmap (CEIR) is the most recent update to the City's climate policy, and updates both corporate and community greenhouse gas (GHG) inventories. Council directed the Public Service to implement CEIR on July 21, 2022.

As the end of 2022 marks the end of the short-term actions of the WCAP, the modelling results, GHG inventory, and implementation framework of the CEIR will be used to inform a planned update to the WCAP and develop a Climate Resiliency Strategy. This update will begin in 2023.

Appended to this report are the 2021 and 2022 Corporate GHG inventories.

RECOMMENDATIONS

1. That this report be received as information.
2. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.
3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

On June 23, 2022, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back on the following during the annual report on the Winnipeg Climate Action Plan in 2023:

1. Review the Climate Action Plan to highlight the specific areas and strategic directions where the City needs to invest, and improve departmental coordination under the Office of the CAO to help meet our long-term targets.
2. Provide an update on the collaboration with other levels of government for increasing investment in programs supporting climate action, and any other initiatives that will help the City meet our targets.

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report.

HISTORY/DISCUSSION

This report provides an outline of climate action and policy development across the organization in 2022. 2022 marked the end of the Winnipeg Climate Action Plan (WCAP) short term actions, and significant updates to the City's climate goal through OurWinnipeg 2045. As such, this report is organized in alignment with the Community Energy Investment Roadmap (CEIR) key areas of action, to showcase both overarching climate policy and actions.

In May 2022, OurWinnipeg 2045 received final approval by Council and included an updated climate target of net zero emissions by 2050 to align with federal and international targets. This replaced previous climate targets identified in the WCAP in 2018.

The CEIR is the most recent update to the City's climate policy, and updates both corporate and community greenhouse gas (GHG) inventories. The CEIR uses state-of-the-art modelling to identify City and community-wide systems level actions and investments to achieve net zero emissions by 2050. It fulfills Council direction to undertake detailed financial energy and emissions modeling to understand the costs and benefits of implementing climate action. Council directed the Public Service to implement CEIR in July 2022.

The financial assessment in the CEIR shows how meeting our climate target will require community-wide investment of \$23 billion over 28 years (from 2022–2050), averaging \$800 million per year. The CEIR also shows how this investment pays for itself two times over within that timeframe. These investments in climate action will generate savings of \$53.7 billion from avoided carbon costs, reduced energy costs, and avoided maintenance costs. The net benefit to

the community is \$35.6 billion over 28 years, a climate dividend that averages \$1.2 billion per year. Furthermore, the savings and benefits from these investments will continue beyond 2050.

As the end of 2022 marks the end of the short-term actions of the WCAP, the modelling results, GHG inventory, and implementation framework of the CEIR will be used to inform a planned update to the WCAP and develop a Climate Resiliency Strategy. This update will begin in 2023.

A Whole City Approach

Climate action requires systemic transformation, where climate considerations are embedded into all policy and spending decisions within government and across the city. The City of Winnipeg can continue to show leadership in this area by leveraging its physical, financial and human assets to support full implementation of the CEIR. This section outlines the corporate actions taken in 2022 to embed climate action into internal decision-making processes.

In 2022, the City continued the process of employing a climate lens in decision-making for the South Winnipeg Recreation Campus and St. James Civic Centre expansion projects. A climate lens aligns projects with climate goals by considering GHG and resiliency impacts in decision-making at all stages of the project, including design, construction and operation.

In January 2022, the Asset and Project Management team hired an Energy Analyst, as approved by Council in April 2021. This role analyzes energy use in City facilities to improve energy efficiency and conservation.

Council approved a new Climate Action Reserve Fund in March 2022 to finance strategy and policy development for achieving net zero emissions goals, in alignment with the City's strategic plans.

The Sustainable Procurement Action Plan (SPAP) was approved in July 2022. The Plan includes four pillars, including one focused on environmental considerations. An overarching goal of the SPAP is to have the City's procurement practices fully consider relevant social, economic, cultural and environmental impacts related to the goods and services purchased and the suppliers who deliver them.

The City updated construction specifications to allow for General Use Limestone cement, which is a more sustainable, lower carbon cement that reduces CO₂e emissions by up to 10 percent while still producing concrete of equivalent performance. Additionally, the updated specifications allow for increasing fly ash dosage based on concrete type and updating the Concrete Mix Design to decrease the carbon intensity of concrete used in City projects.

Council approved the creation of the Climate Action and Resilience Committee in September 2022 to formalize engagement with sector-based experts on climate action. A steering committee at the senior management level was also established in 2022 to oversee implementation of the City's high-level climate policy through budget, reporting and strategic planning processes and steer updates to the Winnipeg Climate Action Plan.

A Green Meetings Guide was also developed in 2022 to support meeting and events at City facilities which are organized in a way that all aspects (location, transportation, food/drinks, and supplies) are eco-friendly and encourages ways to be more sustainable before, during, and after an event.

Green Buildings

Buildings represent one of the largest sources of GHG emissions in Winnipeg, accounting for 44.4 percent of community-wide emissions in 2022. Corporately, City facilities accounted for 34 percent of overall energy use and 21 percent of emissions. Most building emissions at the community-wide and corporate levels come from the use of natural gas for heating purposes.

The Green Building Policy has been directing sustainability requirements for new City-owned buildings and major additions since 2010. The City applied CEIR findings to three facilities in 2022 to go beyond the Green Building Policy and provide alignment with the OurWinnipeg 2045 climate target. Energy efficiency and carbon reduction were the focus of these requirements. Targeted facilities included the South Winnipeg Recreation Campus, St. James Civic Centre Facility Expansion and the Winnipeg Fire Paramedic Service Amalgamated Station 9. Energy efficiency upgrades for existing City buildings, including those for lighting, building envelope, HVAC and related operations controls, and custom energy solutions, also received financial support through Efficiency Manitoba programs in 2022.

Creating Affordable Housing Opportunities in Housing Improvement Zones Program - Local Energy Access Program (LEAP) was expanded in February 2022 to include Energy Poverty and High Poverty Areas. These City-owned lots are available to non-profit housing providers for \$1 to construct net zero energy efficient housing. Program energy performance requirements were developed to provide a clear definition of net zero development and to provide alignment with Efficiency Manitoba's New Homes Program.

The Building Energy Disclosure Project (BEDP) completed its second year. Winnipeg commercial and institutional building owners, representing 161 total buildings, gained better understanding of the energy performance of their buildings while supporting overall reductions in greenhouse gas emissions and energy consumption.

Zero-Emissions Transportation

Transportation represents the largest source of GHG emissions in Winnipeg. This sector accounts for 48 percent of community-wide emissions, comprising of personal vehicle use, commercial operations, transit, heavy transportation and off-road vehicle use. Personal vehicle use accounts for most community-wide emissions. Corporately, fuel use for operations, including fleet, equipment and waste hauling contractors, accounted for 42 percent of overall energy use and 58 percent of emissions.

Funding was received at the federal and provincial levels in 2022, in support of various Winnipeg Transit initiatives, including the Transition to Zero Emissions Bus Program. As part of the Program, a tender was issued and awarded for the initial supply and delivery of battery electric and fuel cell electric buses. Preliminary work on the design and development of charging and hydrogen infrastructure was also initiated.

The Winnipeg Fleet Management Agency completed the two-year Electric Vehicle (EV) Fleet Pilot program. The EV Fleet Pilot program assessed the operation and maintenance costs of two vehicles and two charging stations, and the full life cycle value of EVs compared to internal combustion engines (ICE). Operation and maintenance costs were lower with the EVs than for comparable ICEs and saved 10.5 tonnes of CO₂e over the course of the pilot program.

The EV Public Charger Pilot Program was launched in 2022 to build operational experience with EV charging infrastructure and assess usage of charging stations at City facilities. The stations became available in March 2022 at St. Vital Park, Kildonan Park, Seven Oaks Pool and the Bill and Helen Norrie Library and are free to use for a two-year period, ending in March 2024. In 2022 the chargers had over 1,760 charging sessions and dispensed over 15 gigawatt-hours of electricity, resulting in 15.6 tonnes of CO₂e avoided.

Several active transportation programs continued in 2022. The Neighbourhood Greenway Reduced Speed Pilot established neighbourhood greenways as on-street routes for active transportation with reduced speeds and traffic calming measures for motor vehicles. The Enhanced Summer Bike Route Program similarly provided more cycling opportunities for recreational and commuting users. Implementation of the Pedestrian and Cycling Strategies is also ongoing. Projects underway in 2022 included the construction of approximately 1,850 metres of pathways and 1,320 metres of protected bicycles lanes.

Local Renewable Energy

CEIR identifies that after reducing the need for energy and increasing energy efficiency, electrification of heating and transportation is key to meeting our climate targets. Overall need for electricity can be supplemented by local production, including solar generation. By supplementing the current electricity grid in this way, the need to build new grid-scale generating capacity is reduced.

An “Energy Twin” study was completed in 2022 as part of the Transition to Zero-Emissions Bus Program. This study analyzed different design configurations to optimize a battery-electric bus facility for grid resilience, GHG emissions reductions and operational cost savings. The study recommended a battery-electric bus facility powered by Manitoba Hydro generated electricity, supplemented with roof-mounted solar, a battery energy storage system and a microgrid controller to optimize design.

Solar energy opportunities at the Pan Am Pool were reassessed in 2022 with the intent of reducing operating costs and GHG emissions. Based on the assessment, it was determined that replacing five of the original air handling units with solar ventilation air heating systems would result in a GHG reduction of approximately 184.5 tonnes of CO₂e.

As part of the Winnipeg Electrical By-law No. 72/2022, a previous requirement for electrical engineering and certification for solar photovoltaic (PV) below 10 kilowatts (kW) for single detached dwelling units was eliminated.

Sustainable Waste Management

Community GHG emissions from waste come from both City-owned and private landfills. Organic matter in landfills decays over time and can continue to release GHGs long after it is buried. Waste accounts for six percent of community-wide emissions, and 13 percent of corporate emissions.

In January 2022, Council approved a compost support grant which awarded \$65,000 to Compost Winnipeg to assist in developing new programs and expand its existing food waste collection service to Winnipeg residents starting in 2023.

The 18-month Residential Food Waste Collection Pilot Project ended in September 2022. The pilot provided weekly curbside green cart collection to approximately 4,000 households across five pilot areas. Approximately 743 tonnes of residential food waste were diverted from landfill throughout the duration of the project, equivalent to 170.89 tonnes of CO₂e avoided.

The Landfill Gas Expansion Project was completed at the Brady Road Resource Management Facility (BRRMF), with the installation of 18 dual-purpose wells to collect landfill gas and leachate, bringing closed landfill area covered by gas collection up to 80 percent.

For the second consecutive year, 100 percent of biosolids were beneficially used through soil fabrication and land application. In total, 54,307 tonnes were diverted from landfill, equivalent to 12,567 tonnes of CO₂e avoided.

Resilience

The Winnipeg Climate Action Plan update starting in 2023 will include the development of a Climate Resilience Strategy. Resilience refers to actions taken to address the impacts of climate change and to respond to the local risks and opportunities climate change may bring. Projected climate impacts include more extreme heat days, fewer but more intense summer precipitation events, and an increased risk of drought. Winters will be more moderate, with increased freeze-thaw events, and winter, spring and fall are expected to get more precipitation. This section outlines the actions the City is already taking to increase climate resiliency.

In May 2022, Council approved the Winnipeg Parks Strategy and Winnipeg Recreation Strategy. Climate resilience in the Recreation Strategy prioritizes support for municipal emergency and disaster response, such as providing warming and cooling centres for residents during extreme weather in addition to improving energy efficiency of current and future facility inventory. It also includes policies requiring the utilization of climate-sensitive design principles, the pursuit of opportunities to reduce GHG emissions and developing or retrofitting recreation facilities to be low or zero carbon facilities. The Parks Strategy aims to increase residential proximity to parks, supporting active transportation goals, clean air zones, reduced emissions and overall improved quality of life.

The draft Winnipeg Comprehensive Urban Forestry Strategy underwent a public comment period in 2022 and revisions are currently in progress through to spring 2023. Work on the Master Greenspace and Natural Corridors Plan also began in 2022, with project scoping anticipated to be completed in late Spring 2023. Also, the City reviewed green infrastructure opportunities in the Armstrong combined sewer district, including opportunities for urban agriculture that can support stormwater management.

In 2022, the City initiated a five-year enhanced tree planting program branded “Home Grown” in partnership with the Government of Canada as part of their 2 Billion Trees program (2BT). The City has planted 4,333 trees in 2022 and will be planting approximately 70,000 trees over the course of the program which includes direct community participation to grow the urban canopy.

In 2022 the Winnipeg Food Council completed the Food System Snapshot report that outlined actions for the City of Winnipeg to support the creation of a sustainable and equitable urban food system. The Winnipeg Food Council also established its first urban agriculture and community garden small grants program to increase urban food production.

In 2022 the City of Winnipeg partnered with seven community centres across Winnipeg to offer cooling spaces and water during extreme heat. Additionally, three bottle filling stations were installed for residents to access cool, clean drinking water throughout the summer. City facilities were also available during operating hours as warm up spaces during the winter.

In September 2022, the City approved \$130,000 funding from Health Canada Air Quality for a Clean Air Spaces project. This project will develop a facility assessment tool to identify clean air spaces in existing community facilities for possible use during wildfire smoke events. The project will be completed in March 2023.

Community and Corporate Greenhouse Gas Inventories

Winnipeg's Community GHG Inventory was updated as part of preparing the CEIR, replacing the 2011 inventory. GHG inventories at both Community and Corporate levels are used to support climate action planning and performance tracking. The updated Community inventory uses the Global Protocol for Community-Scale GHG Emissions (GPC), a globally accepted standard for municipal emissions, to compile 2016 emissions with projections into 2022 and beyond.

Community-wide emissions for 2022 are estimated at 4.76 million tonnes of CO₂e. This includes emissions from residential, commercial, institutional and industrial buildings. It also includes emissions from transportation, the decomposition of waste, the transmission of electricity and natural gas, and some agricultural processes.

The Corporate GHG inventory is updated annually, following the Partners for Climate Protection (PCP) protocol for municipal GHG accounting. The PCP protocol was developed to provide a more appropriate method for analyzing the scope of annual operations undertaken in a municipality, and is the protocol used for all Corporate GHG inventories produced to date.

This annual report contains both the 2021 and the 2022 Corporate GHG inventories. The Corporate GHG Inventory relies on departmental reporting of emissions-related data. This data is cleaned, validated, and used by the departments to meet their own reporting requirements. It becomes available for inclusion in the Corporate GHG Inventory in Q2 of the following year.

The Corporate GHG Inventory includes energy use and emissions from buildings, vehicles, equipment, water and waste infrastructure, and streetlights to measure the energy used and CO₂e emitted in providing the services and infrastructure for Winnipeg. In 2022, the City emitted almost 122,000 tonnes of CO₂e and used over 2.5 million gigajoules of energy. This energy use is comprised of 212.4 million kWh of electricity, 18.4 million cubic meters of natural gas, 21.1 million litres of diesel fuel, and 7.2 million litres of gasoline.

The COVID-19 global pandemic continues to impact corporate emissions, though emissions levels are rising as activity levels continue to rebound. In 2020 emission levels fell eight percent from 2019 levels. 2021 was the first full year of the pandemic and emissions fell a further seven percent for a total decrease of 14 percent from 2019 levels. 2022 saw emissions increase by 11 percent coinciding with pandemic restrictions decreasing and City operations beginning to return to pre-pandemic levels. Additionally, a relatively colder winter season increased the need for space heating, which caused an increase in natural gas use.

Appendix A contains Corporate GHG inventories for 2021 and 2022.

FINANCIAL IMPACT

Financial Impact Statement**Date:**

May 11, 2023

Project Name:

Winnipeg Climate Action Plan - 2022 Annual report

COMMENTS:

There is no Financial Impact associated with the recommendation of this report.

Lucy Szkwarek, CPA, CGA

Lucy Szkwarek, CPA, CGA

Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

Assets and Project Management
Chief Financial Office
Community Services Department
Planning, Property and Development
Public Works Department
Winnipeg Fire Paramedic Services
Winnipeg Fire Paramedic Services – Office of Emergency Management
Winnipeg Fleet Management Agency

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg Goal: Leadership and Good Governance
Objective 1. **Establish and implement priority actions through evidence-informed decision-making processes.** Evidence-informed actions require transparent and accountable decision-making to determine the long-term public interest and the appropriate trade-offs in levels of service, taxation, and budget priorities.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Strategic Opportunity #1: Corporate Leadership
Key Direction #1.1 Cultivate a Corporate Culture That Values Climate Action

Strategic Opportunity #7 Community Climate Resiliency
Key Direction #7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

The Winnipeg Climate Action Plan aligns with the Winnipeg Poverty Reduction Strategy as both place focus on building a more resilient, sustainable, and equitable city for all residents. The Plan and the Winnipeg Poverty Reduction Strategy both represent the intention for increased resiliency of our communities, municipalities, and the city as a whole, while also placing emphasis on providing increased support to residents experiencing poverty related to the effects of climate change.

SUBMITTED BY

Department: Water and Waste Department
Division: Office of Sustainability
Prepared by: Jeanette Sivilay
Date: May 11, 2023
File No: O-005

Attachments:

Appendix A: City of Winnipeg Corporate Greenhouse Gas Emissions 2021 – 2022

Appendix A: City of Winnipeg Corporate Greenhouse Gas Emissions 2021 – 2022

City of Winnipeg Corporate Greenhouse Gas Emissions

2021 – 2022

INTRODUCTION

This report provides an update on the City's corporate greenhouse gas (GHG) inventory for 2021 and 2022. The tracking and measurement of GHG emissions is called for in OW2045:

Good Governance Objective 1 - Establish and implement priority actions through evidence-informed decision-making processes.

Environmental Objective 1 - Prioritize the transition to a resilient, low-carbon future through demonstrated organizational and community leadership, and collaborative actions that mitigate and adapt to a changing climate.

The Corporate inventory follows the Partners for Climate Protection (PCP) protocol for municipal GHG accounting. The PCP Inventory protocol focuses on municipal operations and is consistent with the Corporate GHG inventories produced to date. The scope of data collected has increased since the first inventory for 1998. The collection process has been also refined to improve the accuracy and completeness of the inventory.

Energy used for operations comes in different forms, usually litres of vehicle fuel, kilowatt hours of electricity, and cubic meters of natural gas. To allow comparisons between these energy sources the volume of each is converted to the amount of work each unit of fuel does. This translates these different fuel types into gigajoules (GJ) of energy. With this, 30 litres of gasoline, 26 litres of diesel, 26 m³ of natural gas, and 278 kilowatt hours (kWh) of electricity all contain the same amount of energy: 1 GJ.

Similarly, there are the three most significant GHGs causing climate change, with different strengths of impacts. These are carbon dioxide, nitrous oxide, and methane (CO₂, NO₂, and CH₄). The impacts of these last two GHGs are expressed in equivalent CO₂ levels, and the sum of the three is expressed in "CO₂ equivalent", or CO₂e.

2021 Inventory

Energy use in 2021 from City operations decreased 2% while GHG emissions decreased 7% compared to 2020. The change in energy use was primarily the result of a 4% decrease in Vehicle & Equipment fuel use. Decreases in energy consumed in the Buildings, and Water & Wastewater sectors were smaller, at 1%. Emissions dropped more than energy use as stricter fuel emissions regulations came into effect, requiring higher ethanol content in fuels.

2022 Inventory

Energy use and emissions increased in all sectors in 2022. Total energy use increased 8% and total emissions increased 11% compared to 2021. Use of natural gas increased 20% while electricity increased 6%.

CORPORATE GHG INVENTORY (2021-2022)

Source	2021			
	Energy GJ	%	CO ₂ e tonnes	%
Buildings	761,654	33%	21,660	20%
Vehicle Fleet	1,020,711	44%	68,846	63%
Streetlights	109,849	5%	37	0%
Water & Wastewater	442,117	19%	7,713	7%
Corporate Waste	-	-	11,324	10%
TOTAL	2,334,332	100%	109,580	100%

Table 1 - Energy Use and GHG Emissions for City Operations 2021

Source	2022			
	Energy GJ	%	CO ₂ e tonnes	%
Buildings	857,176	34%	25,890	21%
Vehicle Fleet	1,056,257	42%	70,560	58%
Streetlights	110,042	4%	37	0%
Water & Wastewater	504,396	20%	9,246	8%
Corporate Waste	-	-	16,259	13%
TOTAL	2,527,871	100%	121,991	100%

Table 2 - Energy Use and GHG Emissions for City Operations 2022

	Buildings	Vehicle Fleet	Streetlights	Water & Wastewater	TOTAL
2019	970,583 (↓ -1%)	1,147,662 (↑ 12%)	112,776 (↓ -16%)	575,004 (↑ 1%)	2,806,025 (↑ 4%)
2020	770,193 (↓ -21%)	1,056,530 (↓ -8%)	109,565 (↓ -3%)	445,962 (↓ -22%)	2,382,249 (↓ -15%)
2021	761,654 (↓ -1%)	1,020,711 (↓ -3%)	109,849 (↑ 0%)	442,117 (↓ -1%)	2,334,332 (↓ -2%)
2022	857,176 (↑ 13%)	1,056,257 (↑ 3%)	110,042 (↑ 0%)	504,396 (↑ 14%)	2,527,871 (↑ 8%)

Table 3 - Energy Use, in Gigajoules, by Sector, with Annual Change: 2019-2022

	Buildings	Vehicle Fleet	Streetlights	Water & Wastewater	Waste	TOTAL
2019	29,251 T (↓ -3%)	78,439 T (↓ 0%)	125 T (↓ -16%)	8,897 T (↓ -3%)	11,741 T (↓ -10%)	128,454 T (↓ -2%)
2020	22,376 T (↓ -24%)	72,010 T (↓ -8%)	37 T (↓ -71%)	7,070 T (↓ -21%)	16,126 T (↑ 37%)	117,619 T (↓ -8%)
2021	21,660 T (↓ -3%)	68,846 T (↓ -4%)	37 T (↑ 0%)	7,713 T (↑ 9%)	11,324 T (↓ -30%)	109,580 T (↓ -7%)
2022	25,890 T (↑ 20%)	70,560 T (↑ 2%)	37 T (↑ 0%)	9,246 T (↑ 20%)	16,259 T (↑ 44%)	121,991 T (↑ 11%)

Table 4 - GHG Emissions, in Tonnes CO₂e by Sector, with Annual Change: 2019-2022

ENERGY USE AND GHG EMISSIONS IN 2020 TO 2022

Between 2020 and 2022 energy use and emissions both rose. Energy use increased 6% over this time, with increases in all sectors. Emissions increased 4%, with 20% increases in the Buildings, and Water & Wastewater sectors and a 2% decrease in Vehicle & Equipment emissions.

Energy Use

In 2022, Diesel was the largest energy source at 32% of energy used and, owing to its high carbon content, was 45% of emissions. This is despite increases in ethanol content for diesel and gasoline which decreases the emissions per litre of fuel.

Electricity was the second largest energy source at 30% of total use, and just 0.2% of all GHGs. This is due to the low-carbon profile of Manitoba's electrical grid.

Natural gas use accounted for 28% of total energy use and 29% of emissions.

Gasoline (in an ethanol blend) accounted for 10% of energy use and 12% of emissions.

Aviation fuel's impacts were negligible.

The Waste sector's impacts are 13% of total emissions. GHGs from waste are estimated from volume of waste collected from City facilities and from incidental waste collected during operations. From 2019 to 2022 there was a 31% increase in reported waste and a similar increase in estimated emissions.

	2019	2020	2021	2022	Annual Change to 2021	Annual Change to 2022
Electricity	32%	31%	31%	30%	-1%	6%
Natural Gas	27%	25%	25%	28%	0%	20%
Gasoline	9%	11%	11%	10%	-7%	-1%
Diesel	32%	33%	33%	32%	-2%	5%
Aviation	0%	0%	0%	0%	-27%	31%

Table 5 - Fuel Type Proportion of Use and Annual Change - 2019-2022

Energy Type	Total Use (litres)	Energy (GJ)	% Energy	Total CO ₂ e (tonnes)	% CO ₂ e
Electricity	212,366,588	764,520	30%	262	0%
Natural Gas	18,399,552	707,095	28%	34,910	29%
Ethanol Blend (E10)	7,247,728	245,408	10%	15,225	12%
Biodiesel Blend (B5)	21,096,568	805,256	32%	54,947	45%
Aviation Fuels	156,309	5,593	0%	387	0%
Waste	-	-	-	16,259	13%
Total		2,527,871	100%	121,991	100%

Table 6 – 2022 Energy Use and CO₂e Emissions by Energy Source

Energy and Emissions by Sectors

Vehicle & Equipment fuel use was the largest energy user and CO₂e emitter in 2022 at 42% of total energy use and 58% of emissions.

Buildings (excluding those involved in providing water & wastewater services) were the second largest user of energy, using 34% of all energy, and producing 21% of emissions.

Water & Wastewater infrastructure was the third largest user of energy. In 2022 it used 20% of total energy and had the fourth highest GHG emissions at 8% of total.

Corporate waste accounted for 13% of all emissions but does not have an energy use component.

Streetlights & Traffic Signals used the least energy at 4% and were less than 1% of total emissions.

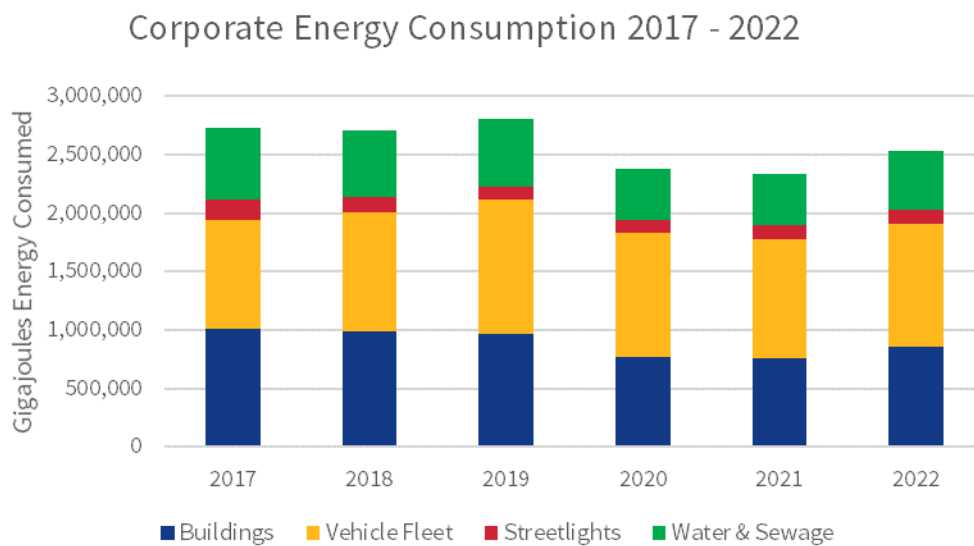


Figure 1 - Energy Use for Corporate Operations 2017 – 2022

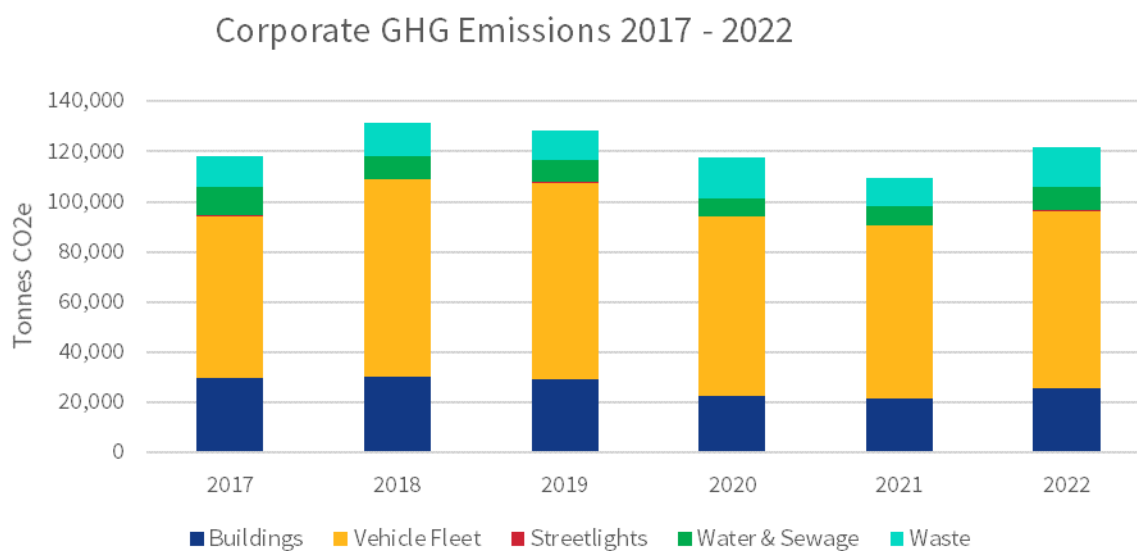


Figure 2 - GHG Emissions for Corporate Operations 2017 – 2022

Buildings

The COVID pandemic's effects on building energy use was apparent across most of the City's building portfolio. Energy use in the Buildings sector dropped 21% from 2019 to 2020 and declined again to 2021 by 1%. Energy use in the 2022 Buildings portfolio increased 13%.

The Buildings sector is heavily influenced by the weather; colder weather requires more energy for heating needs. However, the sector has shown efficiency gains over the last five years. From 2018 onwards, Buildings emissions drop relative to heating needs. 2020 shows a significant decrease relative to heating needs, with this difference decreasing slightly in 2021, but still noticeably continuing into 2022.

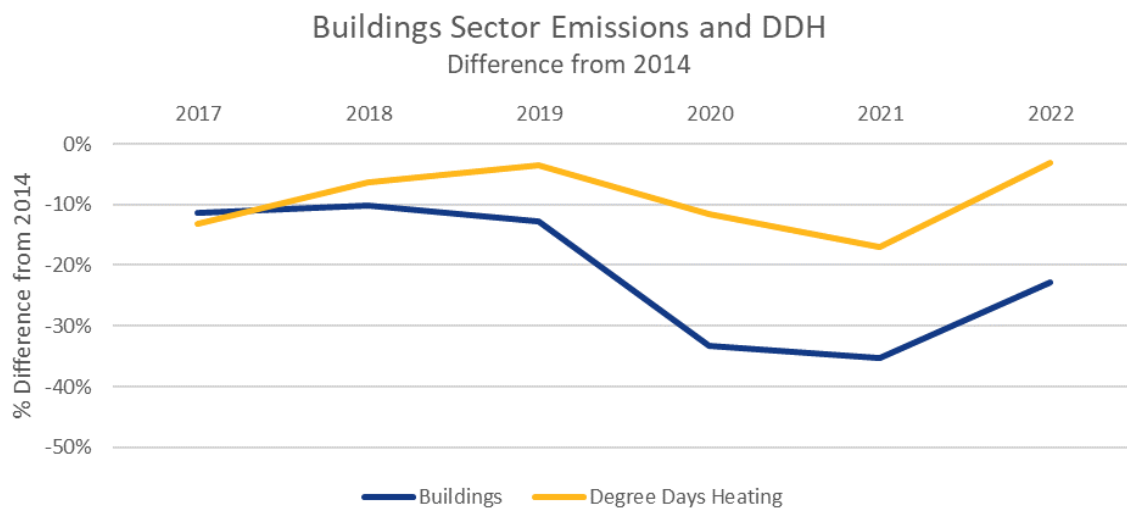


Figure 3 - Influence of Climate on Buildings Sector's Emissions

Vehicle Fleet

The Vehicle Fleet sector includes energy and emissions from vehicles and heavy equipment used in City operations. Generally, fuel use in 2021 and 2022 was significantly lower than levels seen pre-pandemic. Transit accounts for an average of 60% of all Vehicle Fleet energy use and emissions for City operations. Reduced bus service resulted in an average 8% lower fuel use for Transit and, consequently, emissions. This was the major contributor to the 11% decrease in emissions from 2019 to 2021. Between 2021 and 2022 there was a 5% increase in Transit emissions, contributing to a 3% increase in total Vehicle Fleet emissions.

The Corporate Operations category includes all fuel issued by Winnipeg Fleet Management Agency. This includes fuel for Public Works, Police Services, Water & Waste, Fire & Paramedic Services, and others. The Corporate Operations category accounts for an average of 22% of emissions from the Vehicle Fleet sector.

Provincial fuel regulations in the *Ethanol General Regulation (165/2007)* and the *Biodiesel Mandate for Diesel Fuel Regulation (147/2009)* required fuel suppliers to increase ethanol content in gasoline and diesel in 2021 and 2022. This raised the minimum proportion in gasoline from 8% in 2020 to 9.25% in 2021, and 10% in 2022. The minimum ethanol content in diesel increased from 2% to 3.5% in 2021 and 5% in 2022. This change decreased emissions by 1,254 tonnes CO₂e in 2021, and 2,158 tonnes in 2022.

Commuter emissions are based on the 2019 Employee Commuting survey and are kept constant.

	2019 CO ₂ e	2020 CO ₂ e	2021 CO ₂ e	2022 CO ₂ e	Average Proportion of Emissions
Corporate Operations	17,075	17,212	13,881	14,734	22%
Personal Vehicle Use (E8.5)	408	472	353	369	1%
Winnipeg Transit	47,062	40,975	42,008	42,638	60%
All Waste vehicles	5,395	4,692	4,315	4,446	7%
Helicopter - Insect Control	46	144	95	174	0%
Helicopter - WPS	261	260	199	214	0%
Commuter Generated Emissions	8,059	8,059	7,841	7,841	11%
Leachate Hauling	133	196	154	143	0%
Total	78,439	72,010	68,846	70,560	
Impact of changing ethanol percentage			-1,254	-2,158	

Table 7 - Total Vehicle & Equipment Emissions by Type, 2019-2022 (tonnes CO₂e)

Streetlights

Streetlights only use electricity. In Manitoba this is a relatively clean energy source, so this sector produces only negligible emissions. Most Winnipeg streetlights have been switched to LED lights. This has decreased energy use substantially.

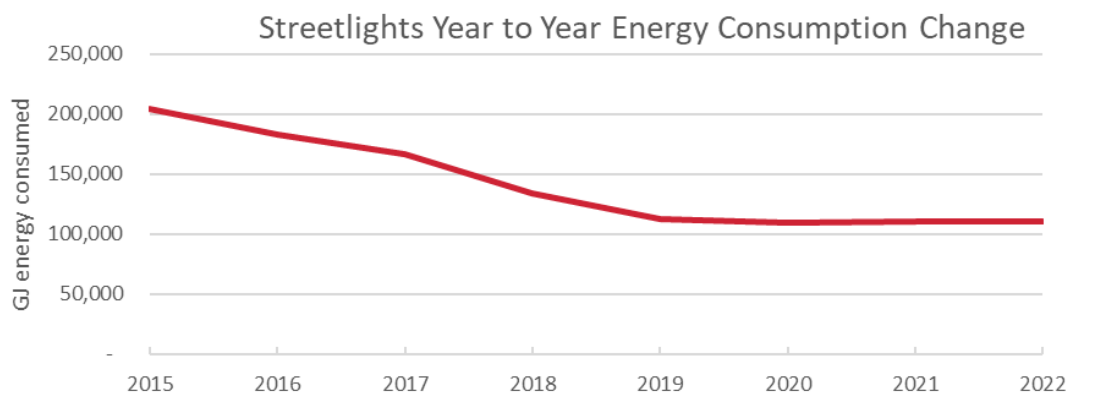


Figure 4 - Change in Streetlights Energy Use

Water and Wastewater

Water & Wastewater infrastructure energy use increased in 2021 by 22%, returning to 2019 levels. Energy use for the sector increased again in 2022, by 7%. This coincided with a total 90% increase in treated wastewater volumes. Treated wastewater volumes are significantly affected by spring flooding, and these energy use changes reflect the relatively dry springs of 2020 and 2021, and the much wetter spring of 2022.

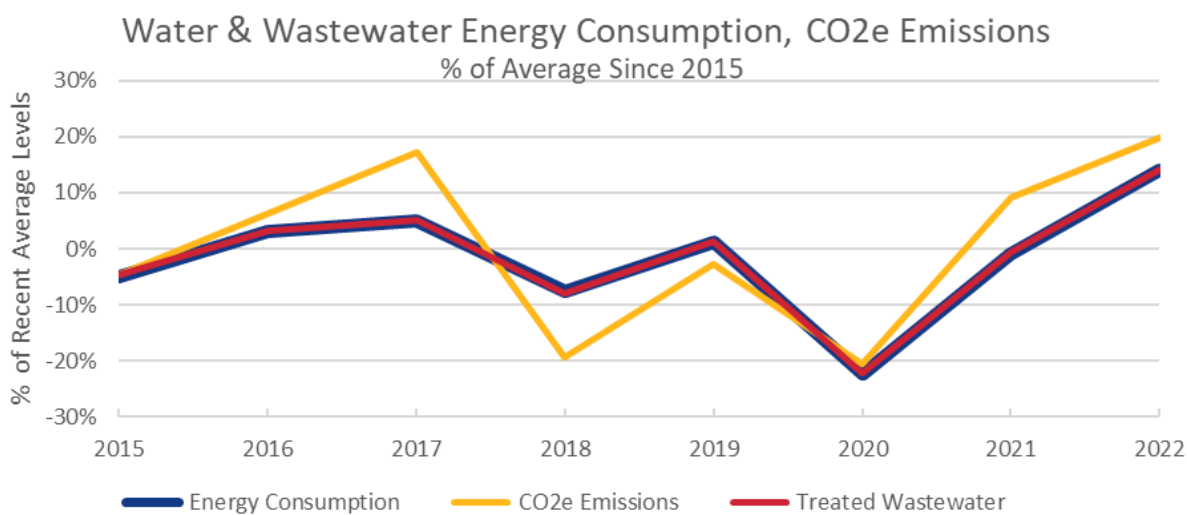


Figure 5 - Change in Water & Wastewater Energy Use, Emissions

Waste

Waste emissions are based on weighed tonnage of City Refuse, and waste collected from City facilities. City Refuse is materials from departments collected during operations.

From 2019 to 2020 there was a 37% increase in reported waste and a similar increase in estimated emissions. 2021 waste decreased 30% but rebounded in 2022 back to 2020 levels.



Figure 6 - Change in Waste Emissions, 2019-2022

Minutes – Executive Policy Committee – June 18, 2024

Report – Standing Policy Committee on Water, Waste and Environment – May 31, 2024

Item No. 4 Winnipeg Climate Action Plan – 2023 Annual Report

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

The Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and submitted the following to Council:

1. That the report be received as information.

Minutes – Executive Policy Committee – June 18, 2024

Report – Standing Policy Committee on Water, Waste and Environment – May 31, 2024

DECISION MAKING HISTORY:

Moved by Councillor Mayes,

That the recommendation of the Standing Policy Committee on Water, Waste and Environment be concurred in and forwarded to Council.

Carried

STANDING COMMITTEE RECOMMENDATION:

On May 31, 2024, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and submitted to Council:

1. That the report be received as information.

B. Raddatz, Manager, Office of Sustainability, Chief Administrative Office, provided a presentation on the matter.

COUNCIL DECISION:

On July 13, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

ADMINISTRATIVE REPORT

Title: Winnipeg Climate Action Plan – 2023 Annual Report

Critical Path: Standing Policy Committee on Water, Waste and Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz, RPP, MCIP Manager, Office of Sustainability	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste Department	N/A	M. Jack

EXECUTIVE SUMMARY

This report provides an outline of climate action and policy development in 2023. This was the first full year of implementation for OurWinnipeg 2045 and the Community Energy Investment Roadmap (CEIR). In alignment with federal and international targets, OurWinnipeg 2045 targets net zero emissions by 2050. This replaces previous climate targets from 2018 identified in the Winnipeg Climate Action Plan (WCAP).

The Community Energy Investment Roadmap (CEIR) is the technical, evidence-based roadmap to achieve this climate action target, and updates both corporate and community greenhouse gas (GHG) inventories. Council directed the Public Service to implement CEIR in July 2022. The modelling results, GHG inventory, and implementation framework of the CEIR will be used to inform a planned update to the WCAP and development of a Climate Resiliency Strategy (Appendix A).

Emissions from City operations in 2023 are 316,626 tonnes of CO₂e. This reflects a decrease of 10,039 tonnes of CO₂e from the year prior. Factors that helped reduce emissions in 2023 include a decrease in waste landfilled, drier weather which reduced volumes treated in wastewater treatment plants, and a reduction in commute time for staff as part of the Flexible Workplace Program. These factors helped offset the emission increases that occurred from buildings and transit.

RECOMMENDATIONS

1. That this report be received as information.

REASON FOR THE REPORT

On July 13, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report.

HISTORY/DISCUSSION

This report provides an outline of climate action and policy development across the organization in 2023. 2023 was the first full year of implementation for OurWinnipeg 2045 and the Community Energy Investment Roadmap (CEIR).

OurWinnipeg 2045 is Winnipeg's guiding climate policy with an updated climate action target of net zero emissions by 2050. The CEIR is the technical, evidence-based roadmap to achieve this climate action target, and updates both corporate and community greenhouse gas (GHG) inventories. The CEIR uses state-of-the-art modelling to identify City and community-wide systems level actions and investments to achieve net zero emissions. It fulfills Council direction to undertake detailed financial energy and emissions modeling to understand the costs and benefits of implementing climate action. Council directed the Public Service to implement CEIR in July 2022. Through the Corporate Greenhouse Gas Inventory process, the City tracks annual progress towards our climate action targets.

Corporate Greenhouse Gas (GHG) Inventory

The Corporate GHG Inventory relies on departmental reporting of emissions-related data. This data is used by the departments to meet their own reporting requirements.

The Office of Sustainability makes improvements every year to the accounting protocol used to report GHGs. This year's update changed what is reported for Corporate Waste to use measured tonnage of waste streams, as opposed to estimated volume. Additional waste streams were also included: residential curbside pickup, commercial waste, and waste collected from 4R Winnipeg Depots. This better aligns the inventory with the Partners for Climate Protection (PCP) protocol for municipal GHG accounting because it includes measured tonnage and all waste going to the City owned and operated landfill. This means that more waste was included in the 2023 inventory and that increased the GHGs associated with the Corporate Waste sector compared to previous reports. This report incorporates this change for past inventories to facilitate cross-year comparisons.

The Corporate GHG Inventory includes energy use and emissions from buildings, vehicles, equipment, water and waste infrastructure, and streetlights to measure the energy used and CO₂e emitted in providing the services and infrastructure for Winnipeg. In 2023, the City emitted a 316,636 tonnes of CO₂e and used over 2.7 million gigajoules of energy. This energy use is comprised of 238.7 million kWh of electricity, 20.4 million cubic meters of natural gas, 23.9 million litres of diesel fuel, and 5.1 million litres of gasoline.

Emissions have decreased by 3.1 percent since 2022, with energy use also decreasing by 2.8 percent. This comes from a reduction in gasoline, natural gas, aviation fuels, and electricity usage. These decreases offset the increase in diesel usage. The additional decrease of 8,045 tonnes CO₂e comes from less landfilled waste.

	2023 Energy		2023 CO ₂ e		
	Total Energy (GJ)	Change from 2022 (%)	Total CO ₂ e (tonnes)	Change from 2022 (%)	Change from 2022 (tonnes CO ₂ e)
Buildings	952,162	2.9%	28,925	4.7%	1,290
Vehicle Fleet	1,092,792	-0.9%	73,484	-0.3%	-242
Streetlights	110,042	0.0%	37	0.0%	0
Water and Wastewater	580,614	-14.3%	10,039	-23.3%	-3,042
Corporate Waste	-	-	204,152	-3.8%	-8,045
Total	2,735,610	-2.8%	316,636	-3.1%	-10,039

The largest areas of emissions change were due to:

- Total amount of waste landfilled at the Brady Road Resource Management Facility was down from 2022 with projected emissions down by 3.8 percent (8,045 CO₂e).
- Total wastewater treated was down by 43 percent due to 50 percent less precipitation than in 2022.
- The Flexible Workplace Program reduced staff commuting trips and related emissions by 1,156 CO₂e.
- Transit use continues to recover from the pandemic with an increase in fuel use emissions of 2.6 percent (1,099 tonnes CO₂e) from 2022, but still below 2019 levels.

A Whole City Approach

Our climate action goals require a city-wide approach to climate considerations for all policy and spending decisions. This section outlines the corporate actions taken in 2023 to embed climate action into internal decision-making processes.

Council's Strategic Priorities Action Plan identifies five key priority themes and 42 priority actions for strategic focus and investment. The Green and Growing City with Sustainable Renewal of Infrastructure theme includes 10 actions that focus on climate resiliency, renewable energy, waste diversion, protecting and growing the urban forest, road and pedestrian safety, and public and active transportation. The measurement and reporting framework identifies the Community Energy Investment Roadmap as one of the key performance indicators.

Council approved six citizen members to sit on the Climate Action and Resilience Committee(CARC) through the Boards and Commissions process. CARC's function is to advise Council on climate change issues, support the update of the Winnipeg Climate Action Plan and development of the Climate Resilience Strategy, and support community climate action.

The Office of Sustainability added three full-time equivalent positions. The Senior Sustainability Planner, Green Buildings Specialist and Sustainability Planner positions will lead high level strategies and projects, including the Winnipeg Climate Action Plan update and development of

the Climate Resilience Strategy, green building policy and program development, and support the Climate Action and Resilience Committee.

2023 marked the first full year of implementation for the Sustainable Procurement Action Plan. An Environmental Procurement Questionnaire was designed for the formal request process (including bids, information, proposals, quotations and tenders) to ask for information about business practices that can contribute to the environmental goals of the City and community. Environmental clauses and specifications were also included as part of the design of the Social Value Menu, a mechanism that can be used to drive measurable environmental outcomes from the City's procurement.

The first phase of the Zoning By-law Review was completed. This initial review identified ways the City's current zoning by-laws work well, challenges surrounding their use, and ways to make future revised zoning by-laws more user-friendly. Climate resilience and sustainability were considered throughout the review. Making climate-resilient development a part of the "core DNA" of the by-law through strategic development approaches and zoning tools was identified as a key recommendation to be carried into the next phase of the review process.

The Government of Canada and the City of Winnipeg announced an agreement under the Housing Accelerator Fund to fast-track housing development. Funding from this program will support the development of more affordable, diverse, and climate-resilient buildings through seven local initiatives and help to increase the supply of housing in Winnipeg.

Municipal Accommodations hosted internal presentations on building energy and carbon related topics. These presentations highlighted impacts of climate change and available City sustainability resources. Through this peer learning group, information surrounding sustainable design, building and energy codes, energy demand, life cycle costing analysis and City policies and programs was shared and discussed.

Green Buildings

Buildings are the second largest source of GHG emissions in Winnipeg, accounting for 42.5 percent of community-wide emissions in 2023. City facilities accounted for 34.8 percent of overall energy use and 9.1 percent of emissions at the corporate level. The use of natural gas for heating purposes is a significant driver of building emissions.

The CEIR includes actions related to new buildings that are energy efficient and electric, retrofitting existing buildings and the installation of heat pumps to increase overall efficiency. These actions can be measured through improvements to energy performance metrics for new buildings and total number of buildings and total floor area retrofit for existing buildings.

The Green Building Policy has been directing sustainability requirements for new City-owned buildings and major additions since 2010. An update to the Green Building Policy was initiated to align with the OurWinnipeg 2045 emissions targets and buildings related actions outlined in the CEIR. While the update is in progress, the City has applied actions from the CEIR to multiple facilities, including energy efficiency targets and carbon reduction requirements in requests for proposals. These incremental targets support a higher tier of energy efficiency in the 2020 version of the National Energy Code for Buildings than what was adopted by the Province. Sustainability workshops for the South Winnipeg Recreation Campus were held in 2023 and examined net zero carbon ready design, passive strategies, active systems and LEED requirements.

Energy efficient upgrades for existing City buildings, including those for lighting, building envelope, HVAC and related operations controls, and custom energy solutions received over \$280,000 in financial support through Efficiency Manitoba programs.

Council approved the development of a Building Emissions Reduction Strategy (BEDP) for existing buildings in September. The strategy is expected to be reported back to Council in Q3 2024. The energy and emissions performance of these buildings is tracked through the City's Building Energy Disclosure Project. The BEDP helps commercial and institutional buildings owners in Winnipeg better understand the energy performance of their buildings while supporting overall reductions in greenhouse gas emissions and energy consumption.

Zero-Emissions Transportation

Transportation is the largest source of GHG emissions in Winnipeg, accounting for 49.4 percent of community-wide emissions. It includes personal vehicle use, commercial operations, transit, heavy transportation and off-road vehicle use. Fuel use for City operations, including fleet, equipment and waste hauling contractors accounted for 39.9 percent of overall energy use and 23.2 percent of emissions.

Transit electrification, increased transit use, active transportation, flexible workplaces and the electrification of vehicle transportation (personal, commercial, city fleet) are identified in the CEIR as actions to be undertaken towards zero-emissions transportation. These actions can be measured through percentage shares of total personal vehicles and energy used for transit which is electric, and mode share targets.

The City of Winnipeg Flexible Workplace Program (FWP) underwent its first-year review in May. Flexible work locations reduce the number of vehicle kilometres traveled by City employees for commuting and for attending meetings and training. For the program's first year, about 22,803 trips per month were saved just for commuting, with a total of 1,153 tonnes of CO₂e avoided.

The Transition to Zero Emissions Bus Program progressed, including issuing tenders for the construction of charging and hydrogen infrastructure, and facility modifications to service and repair battery electric and hydrogen fuel cell buses at the Fort Rouge Garage. The Standing Policy Committee on Public Works also approved the recommendation that all future reports regarding the replacement of transit buses consider the purchase of zero-emission buses, unless there are extenuating circumstances.

The Winnipeg Fleet Management Agency began work on a study of the City's infrastructure compatibility for electric vehicles. This project will determine the electrical capacity of sites to serve future fleet electrification, and the necessary charging infrastructure required.

The EV Public Charger Pilot Program continued through 2023. There were 2,956 charging sessions and 24.7 gigawatt-hours of electricity dispensed throughout the year, resulting in 25.2 tonnes of CO₂e avoided.

The Winnipeg Parking Authority worked with Peg City Car Co-op (PCCC) to expand the carshare parking permit program to include a free-floating zone-based option. These free-floating cars will be exempt from on-street parking time limits within a designed zone that extends around downtown. Launched in June 2023, PCCC currently has 38 of these permits in their free-floating (FLO) program.

Active transportation programs continued to advance. Council approved the permanent conversion of nine bicycle routes to neighbourhood greenways in March. An additional five

bicycle routes were designated as seasonal routes for 2023 and beyond through the Enhanced Summer Bike Route Program.

Local Renewable Energy

CEIR identifies that after reducing the need for energy and increasing energy efficiency, electrification of heating and transportation is key to reaching net zero emissions. Hydroelectricity can be supplemented by local production, including solar generation which can reduce the need to build new grid-scale generating capacity. Clean energy actions included in the CEIR focus on the installation of solar photovoltaics (PV) on new and existing buildings, and use of renewable natural gas (RNG) as a zero emissions fuel during the decarbonization transition. These actions can be measured through megawatts of solar PV installed and percentage of natural gas displaced with RNG.

Five possible location types were identified as part of an administrative report for solar power generation on City property, including new buildings, deep energy retrofits, major additions, renovations and special use cases. Consideration of these location types and futureproofing for solar power generation were referred to the update process for the Green Building Policy.

Winnipeg Transit awarded the contract for the development of a preliminary design and a Class 3 cost estimate for a grid-tied microgrid as part of the Transition to Zero-Emissions Bus Program. The microgrid is expected to consist of energy generation from a rooftop solar photovoltaic installation and an existing diesel genset, supported by an integrated battery storage system and microgrid controller.

Sustainable Waste Management

Community GHG emissions from waste come from both City-owned and private landfills. Organic matter in landfills decays over time and can continue to release GHGs long after it is buried. The CEIR includes actions for sustainable waste management related to waste diversion, reduction of water consumption and increase of wastewater efficiency. These actions can be measured through an established waste diversion rate, waste generation target and incremental increase of the efficiency of water pumps. Waste accounted for 6.9 percent of community-wide emissions, and 64.5 percent of corporate emissions in 2023.

The first phase of engagement for the Comprehensive Integrated Waste Management Strategy (CIWMS) Review took place. As part of this phase of engagement, an online survey and ideas wall were publicly available for input and stakeholder meetings and interviews were conducted. Waste audits were completed in the summer and autumn to understand the waste composition of residential (single- and multi-family dwellings) and industrial, commercial and industrial, and construction, renovation and demolition sectors.

The Multi-Family Waste Diversion and Management Strategy was approved by Council. The goals and objectives of the strategy are to reduce GHGs and increase diversion of waste from multi-family dwellings (MFD). The strategy includes enhanced or new diversion programs, implementing a sustainable MFD waste management program that balances social, environmental and financial considerations, and developing design standards for storage and collection of waste.

An options analysis and high-level cost estimate was completed for an organic waste processing facility to support a city-wide green cart program for single-family residential dwelling units. The concept and development of this program was approved by Council. Progress on the development of the program is expected to be reported back to Council in June 2024.

Council approved a compost support grant which awarded \$65,000 to Compost Winnipeg to improve affordability, efficiency and reliability of their organic waste collection service. As part of program development for the green cart program, Council also approved continued administration of the grant annually until the program is operational.

For the third consecutive year, 100 percent of biosolids were beneficially used through soil fabrication and land application. In total, 59,976 tonnes were diverted from landfill, equivalent to 13,879 tonnes of CO₂e avoided, a 10 percent increase from 2022.

Resilience

The Winnipeg Climate Action Plan update will include the development of a Climate Resilience Strategy. Resilience refers to actions taken to address the impacts of climate change and to respond to the local risks and opportunities climate change may bring. Projected climate impacts include extreme heat days, intense summer precipitation events, drought, and increased freeze-thaw events. Overall, the climate will continue to become more unstable as more carbon pollution is released into the atmosphere. In 2023, the City contributed \$450,000 towards various community-based initiatives that are building climate resilience. This section outlines these initiatives and actions that the City is already taking to increase climate resilience.

Council approved the second phase of implementation (2024-2027) for the Poverty Reduction Strategy. The Poverty Reduction Strategy aims to increase community resilience and provide increased support to residents experiencing poverty-related effects of climate change, such as during increased extreme weather events.

The City of Winnipeg approved becoming a signatory to the Montreal Pledge. The Montreal Pledge challenges municipalities to take 15 tangible actions towards pursuing and accelerating efforts to preserve their ecosystems. These actions are well aligned with the City of Winnipeg's established policies and operating procedures, including OurWinnipeg 2045. The Pledge further supports forthcoming City strategies on greenspace and climate resilience.

The Winnipeg Comprehensive Urban Forestry Strategy was approved by Council. The strategy includes City-wide and public tree targets and policy priority actions. These actions focus on planning, planting, management, protection and partnerships. Alongside enhanced tree protection, the strategy encourages Winnipeg to embrace the ecological role of the urban forest in providing valuable climate adaptation and mitigation, habitat, and other ecosystem services.

Project scoping for the Master Greenspace and Natural Corridors Plan was completed. Preliminary design work was also advanced for two green infrastructure projects in the Armstrong combined sewer district. These projects aim to improve sewer system performance by slowing down rainwater. They will also boost the number of trees in the area and provide opportunities for an urban garden for community-led local food production.

City staff planted approximately 16,180 trees in parks and on boulevards, greenspaces and naturalized areas as part of the second year of the Home Grown Winnipeg Tree Planting Program. Grants were established as part of this program to support tree planting projects on public land. Projects planned for geographic areas of higher poverty and underserved communities were given priority in the evaluation process. Through the first intake cycle of the program, \$180,000 was awarded to 13 not-for-profits and incorporated community groups, with approximately 280 trees planted.

The Land Dedication Reserve Fund provided over \$260,000 for community projects that support the creation or continuation of a physical legacy of parks and recreation facilities for the City of Winnipeg. Several projects implemented tree planting and naturalization, community gardens and nature education programs, nature play and outdoor learning spaces, and education on food security.

For the second consecutive year, the Winnipeg Food Council offered small grants to support community gardens and urban agriculture initiatives. Thirteen organizations were selected, with \$10,000 awarded in grant money to new projects, garden renovations and upgrades, engaging over 500 participants.

The first phase of the Winnipeg Clean Air Spaces project was completed, and a facility assessment tool was developed to identify clean air spaces in existing community facilities for possible use during wildfire smoke events. An additional \$100,000 in funding from Health Canada was also approved to advance the second phase of the project. This phase will include the coordination of a clean air space exercise in April 2024 at a facility identified through the assessment tool in the previous phase. Community consultation and workshops are also expected to take place in the second phase to identify risk perceptions, expectations and concerns to help develop communication tools and increase awareness surrounding air quality events.

FINANCIAL IMPACT

Financial Impact Statement

Date:

May 8, 2024

Project Name:

Winnipeg Climate Action Plan - 2023 Annual report

COMMENTS:

There is no Financial Impact associated with the recommendation of this report.

Lucy Szkwarek, CPA, CGA

Lucy Szkwarek, CPA, CGA

Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

- Assets and Project Management
- Community Services Department
- Planning, Property and Development
- Public Works Department
- Winnipeg Fire Paramedic Services
- Winnipeg Fleet Management Agency
- Winnipeg Parking Authority
- Winnipeg Transit

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg Goal: Leadership and Good Governance

Objective 1. **Establish and implement priority actions through evidence-informed decision-making processes.** Evidence-informed actions require transparent and accountable decision-making to determine the long-term public interest and the appropriate trade-offs in levels of service, taxation, and budget priorities.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Strategic Opportunity #1: Corporate Leadership

Key Direction #1.1 Cultivate a Corporate Culture That Values Climate Action

Strategic Opportunity #7 Community Climate Resiliency

Key Direction #7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

The Winnipeg Climate Action Plan aligns with the Winnipeg Poverty Reduction Strategy as both place focus on building a more resilient, sustainable, and equitable city for all residents. The Plan and the Winnipeg Poverty Reduction Strategy both represent the intention for increased resiliency of our communities, municipalities, and the city as a whole, while also placing emphasis on providing increased support to residents experiencing poverty related to the effects of climate change.

SUBMITTED BY

Department: Water and Waste Department

Division: Office of Sustainability

Prepared by: J. Harper / A. Brinton

Date: May 15, 2024

File No: O-005

Attachment:

Appendix A: City of Winnipeg Corporate Greenhouse Gas Emissions 2023

City of Winnipeg Corporate Greenhouse Gas Emissions

2023

INTRODUCTION

This report provides an update on the City's Corporate Greenhouse Gas (GHG) Inventory for 2023. The tracking and measurement of greenhouse gas (GHG) emissions is called for in OurWinnipeg 2045:

- Good Governance Objective 1: Establish and implement priority actions through evidence-informed decision-making processes.
- Environmental Objective 1: Prioritize the transition to a resilient, low-carbon future through demonstrated organizational and community leadership, and collaborative actions that mitigate and adapt to a changing climate.

The Corporate GHG Inventory follows the Partners for Climate Protection (PCP) protocol for municipal GHG accounting. The PCP Inventory protocol focuses on municipal operations and is consistent with Corporate GHG inventories produced to date. The scope of data collected has increased since the first inventory in 1998. The collection process has been refined over the years to improve the accuracy and completeness of the inventory.

Energy used for operations comes in different forms; including litres of vehicle fuel, kilowatt hours of electricity, and cubic meters of natural gas. To allow comparisons between these energy sources, the volume of each is converted to the amount of work each unit of fuel does. This translates these different fuel types into gigajoules (GJ) of energy. With this, 30 litres of gasoline, 26 litres of diesel, 26 m³ of natural gas, and 278 kilowatt hours (kWh) of electricity all contain the same amount of energy: 1 GJ.

Similarly, there are the three most significant GHGs related to climate change, with different strengths of impacts. These include carbon dioxide (CO₂), nitrous oxide (NO₂), and methane (CH₄). The impacts of the latter two GHGs are expressed in equivalent CO₂ levels, and the sum of the three is expressed in "CO₂ equivalent", or CO₂e.

Updates to Accounting Practice

The Office of Sustainability makes improvements every year to the accounting protocol used to report GHGs. This year's update changed what is reported for Corporate Waste to use measured tonnage of waste streams, as opposed to estimated volume. Additional waste streams were included: residential curbside pickup, commercial waste, and waste collected from 4R depots. This better aligns the inventory with the Partners for Climate Protection (PCP) protocol for municipal GHG accounting because it includes measured tonnage and all waste going to the City owned and operated landfill. This means that more waste was included in the 2023 inventory and that increased the GHGs associated with the Corporate Waste sector compared to previous reports. This report incorporates this change for past inventories to facilitate cross-year comparisons.

2023 Inventory

In 2023, total energy use decreased 2.8% and total emissions decreased 3.1% compared to the previous year. Energy use and emissions increased within the Buildings and Transportation sectors in 2023. Use of natural gas and electricity decreased 4%, gasoline decreased 29%, and diesel fuel use increased 13%. The Corporate Waste sector emitted 3.8% less GHGs compared to 2022 and constituted 64.5% of total emissions.

CORPORATE GHG INVENTORY (2023)

Source	2023			
	Energy (GJ)	% change from 2022	Total CO ₂ e (tonnes)	% change from 2022
Buildings	952,162	2.9%	28,925	4.7%
Vehicle Fleet	1,092,792	-0.9%	73,484	-0.3%
Streetlights	110,042	0.0%	37	0.0%
Water & Wastewater	580,614	-14.3%	10,039	-23.3%
Corporate Waste	-	-	204,152	-3.8%
TOTAL	2,735,610	-2.8%	316,636	-3.1%

Figure 1 - Energy Use and GHG Emissions for City Operations

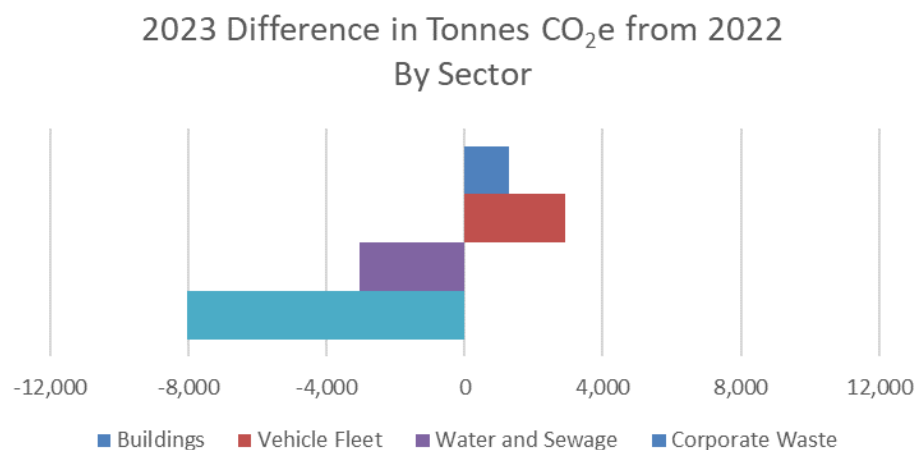


Figure 2 – Difference in GHG emissions tonnages from 2022 to 2023

ENERGY USE AND GHG EMISSIONS IN 2023

Energy use and emissions decreased between 2022 and 2023. Energy use decreased 2.8% over this time, with increases in the Buildings sector (2.9%) offset by a significant decrease in the Water & Wastewater sector (14.3%) and a smaller decrease in the Vehicle Fleet sector (0.9%). Emissions decreased 3.1% overall, with offsetting increases in the Buildings sector (4.7%), a significant decrease in the Water & Wastewater sector (23.3%), as well as a smaller decrease in the Vehicle Fleet sector (0.3%). The relatively large impact of the Corporate Waste sector (64.5% of emissions in 2023) meant that its decrease in emissions has a significant impact on the year-to-year change of total emissions.

Energy Use by Source

The Corporate Waste sector emissions are excluded from this section. Waste emissions do not come from the consumption of energy but from the decomposition of waste in landfills.

In 2023, diesel was the largest energy source at 33.4% of energy used and, owing to its high carbon content, was 55.4% of energy-related emissions, or 19.7% of total emissions. This is despite increases in ethanol content for diesel and gasoline which decreases the emissions per litre of fuel.

Electricity was the second largest energy source at 31.4% of total use, 0.3% of energy use related GHGs, or 0.1% of total emissions. This is due to the low-carbon profile of Manitoba's electrical grid.

Natural gas use accounted for 28.6% of total energy use and 34.4% of energy use related GHGs, or 12.2% of total emissions.

Gasoline (in an ethanol blend) accounted for 6.4% of energy use and 9.7% of energy use related emissions, or 3.4% of total emissions.

Aviation fuel's impacts were negligible.

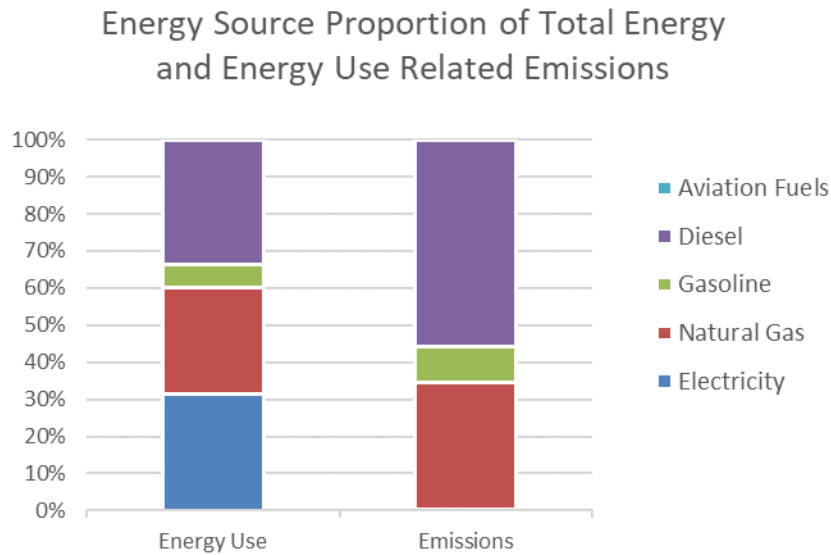


Figure 3 – Energy sources proportion of total energy use and total emissions – excludes Corporate Waste emissions

Emissions and Energy Use by Sector

The Corporate Waste sector impacts 64.5% of total emissions. GHGs from waste are calculated from the tonnage of waste landfilled at Brady Road Resource Management Facility. 2023 is the first year the Corporate GHG Inventory has included this measured waste tonnage; previous years accounted for an estimated waste volume produced at City facilities. This new process accounts for all waste under the control of the City at its landfills.

In general, the graphs below show an increase in energy use with no corresponding increase in emissions. This indicates that the City operations energy mix is lower carbon than in previous years.

Vehicle & equipment fuel use was the largest energy user and second largest CO₂e emitter in 2023 at 39.9% of total energy use and 23.2% of emissions.

Buildings (excluding those involved in providing water & wastewater services) were the second largest user of energy, using 34.8% of all energy, and producing 9.1% of emissions.

Water & Wastewater infrastructure was the third largest user of energy. In 2023 it used 21.2% of total energy and had the fourth highest GHG emissions at 3.2% of total.

Streetlights & Traffic Signals used the least energy at 4% and were 0.01% of total emissions.

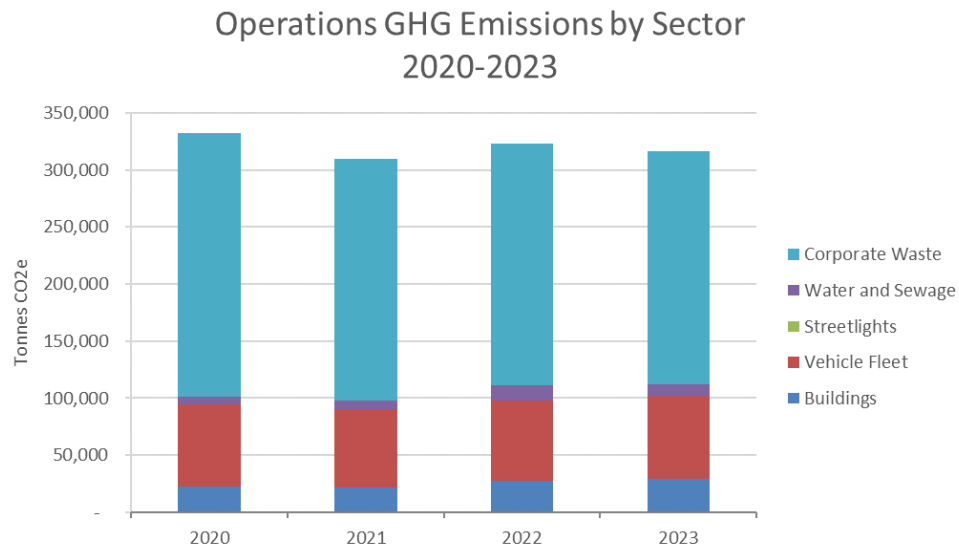


Figure 4 - Emissions Use for Corporate Operations 2020 – 2023

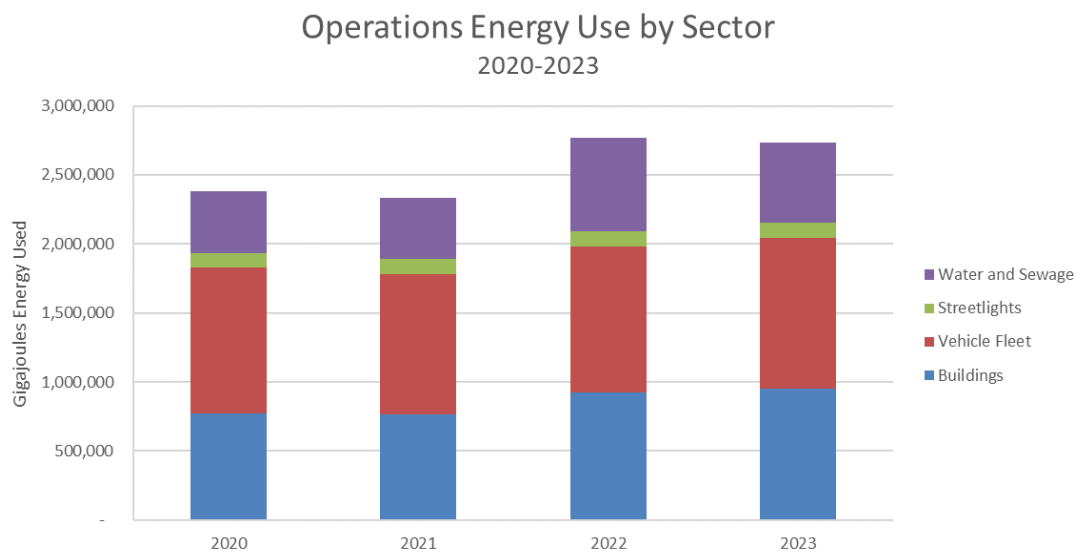


Figure 5 – Energy Use for Corporate Operations 2020 – 2023

Buildings

The effects of the pandemic on building energy use were apparent across most of the City's building portfolio from 2020 to 2022. Energy use in the Buildings sector dropped 21% from 2019 to 2020 and declined again in 2021 by 1%. Energy use in the 2023 Buildings portfolio increased 2.9%.

The Buildings sector is heavily influenced by the weather; colder weather requires more energy for heating needs. This sector has also shown efficiency gains over the last five years. From 2018 onwards, emissions dropped relative to heating needs, until 2021, when the difference began to decrease. 2023 showed that these efficiency gains seem to decrease still further, as energy use increased while heating needs decreased.

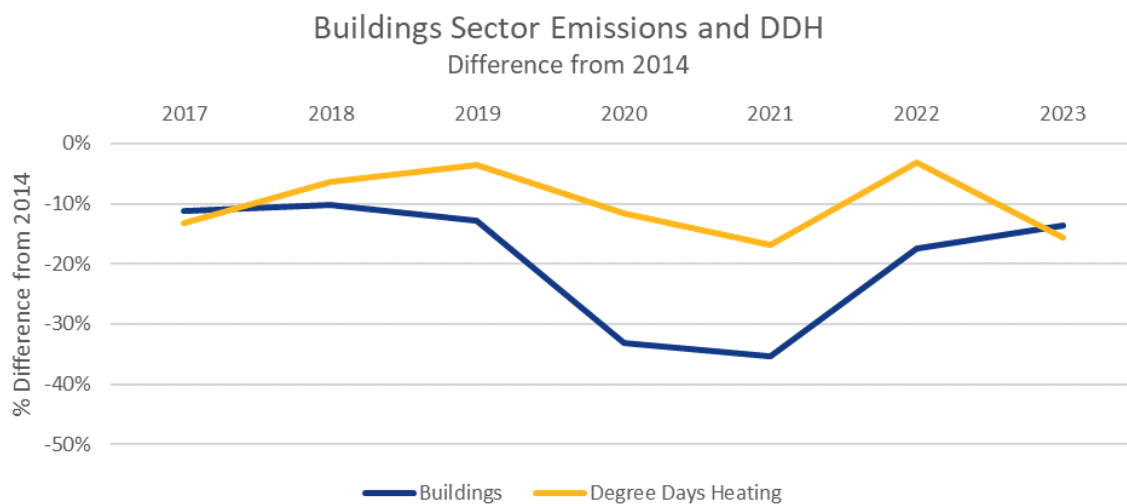


Figure 6 - Influence of Climate on Buildings Sector Emissions

Vehicle Fleet

The Vehicle Fleet sector includes energy and emissions from vehicles and heavy equipment used in City operations.

2023 reported a negligible decrease in emissions, dropping 0.3% compared to 2022. This was not the result of a lack of change, but rather the counterbalancing of two large changes related to transit and staff commuting. Transit increased fuel use and emissions by a small amount (2.6%, 1,099 tonnes), while commuting for City workers decreased emissions (14.7%, 1,153 tonnes) because of the Flexible Workplace program. Corporate vehicle use (City owned and operated vehicles not used by Transit, and not helicopters) increased by 0.8% (113 tonnes) and use of Air1 by WPS increased by 1.7% (4 tonnes) while there were decreases in waste hauling vehicles (2.3%, 175 tonnes), insect control (51.6%, 90 tonnes), leachate hauling (21.6%, 31 tonnes), and Personal Vehicles for City Business (PVCB) (2.5%, 9 tonnes).

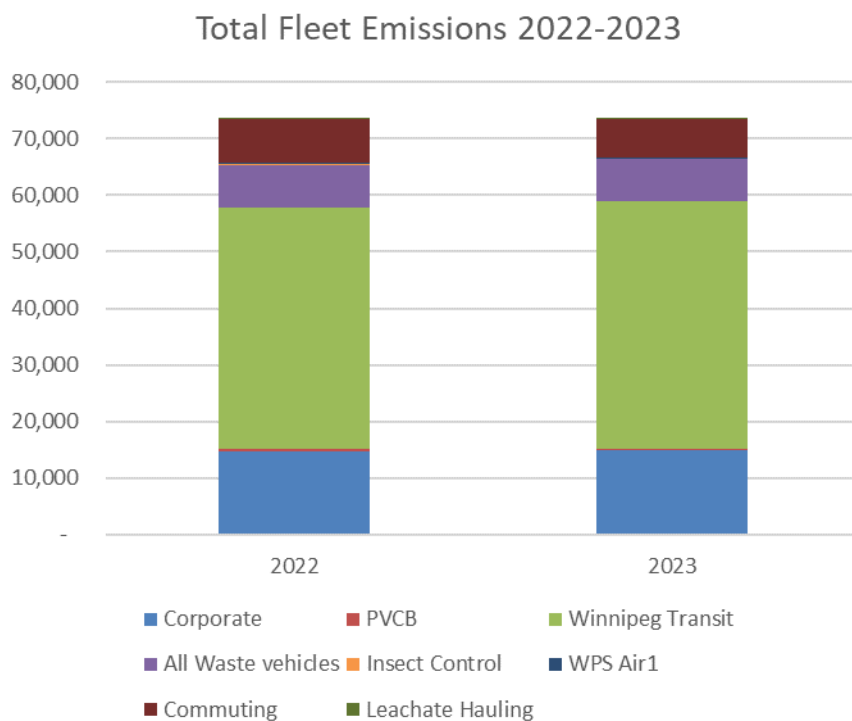


Figure 7 - Fleet Emissions Profile, 2022 and 2023

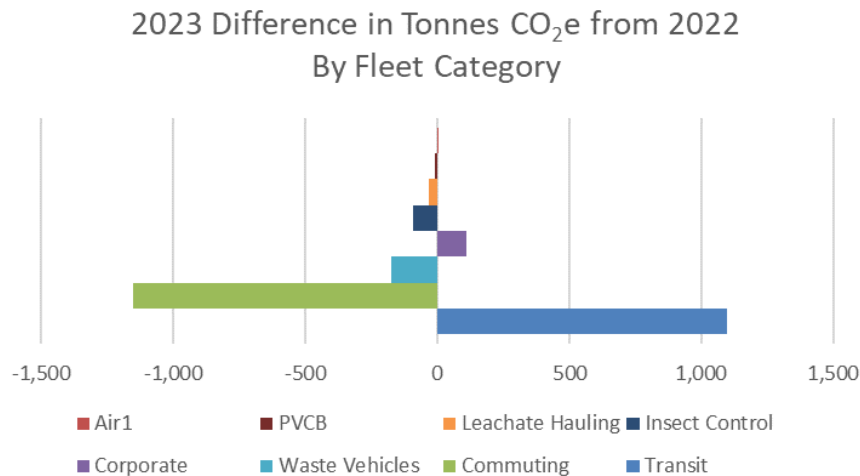


Figure 8 - Tonnage Difference from 2022 by Fleet Category

Commuting impacts have been included in Winnipeg's inventories since 2018. 2023 saw the first reported impacts of the Flexible Workplace Program. This program has reduced commuting kilometres (km) by 531,875 km monthly, or 6,382,496 km annually. This represents emissions reductions from commuting by 14.7%, or 1,153 tonnes CO₂e.

Transit associated emissions have increased 3% from 2022, though they are still 7% below pre-Covid levels.

Leachate hauling and aviation fuel use were down, by 21.6% and 52% respectively. These are both operations significantly affected by rainfall and benefited in a particularly dry year. Leachate hauling was also impacted by improved leachate management practices at Brady Road Resource Management Facility.

Streetlights

Streetlights only use electricity. In Manitoba this is a relatively clean energy source, so this sector produces negligible emissions. Most Winnipeg streetlights have been switched to LED lights. This has decreased energy use substantially.

Water and Wastewater

Water & Wastewater infrastructure energy use decreased in 2023 by 14.3%. In comparison, this was 1% higher than the levels reported in 2019. The Wastewater sector is significantly impacted by precipitation entering the sewer system and needing to be processed by the wastewater treatment plants. The chart below shows the link between precipitation, treated wastewater, and energy use by wastewater infrastructure from 2020 to 2023.

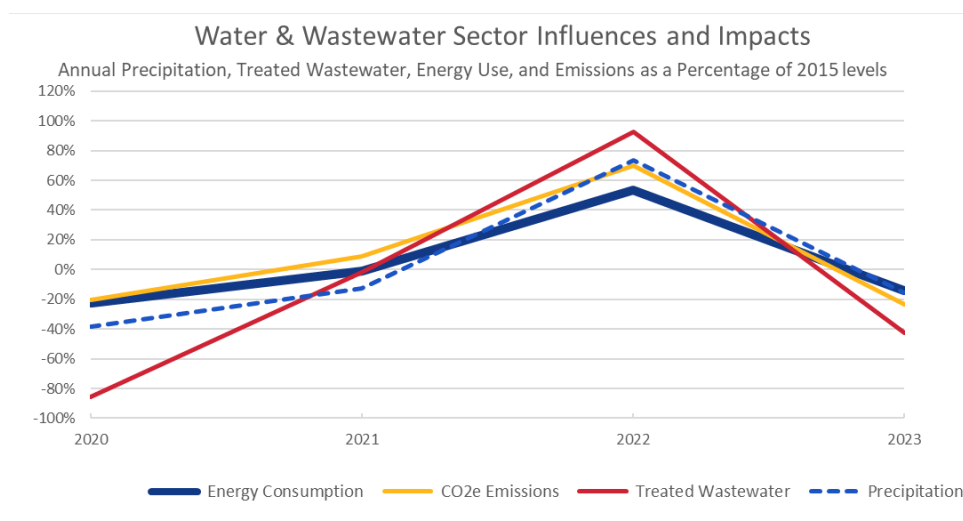


Figure 9 - Change in Water & Wastewater Energy Use, Emissions

Corporate Waste

Waste emissions are based on weighed tonnage of waste delivered to the Brady Road Resource Management Facility. Emissions from this sector are a result of methane generation from landfilled refuse, as opposed to the combustion of fossil fuels, as in other sectors of this inventory. Methane generation from decomposition of waste can peak several years after landfilling and can continue for more than 50 years.

For the 2023 inventory, a new process for calculating waste has been used. This has increased the reported impacts of waste emissions by between 17 and 18 times compared to the previous process, at a total of 379,569 tonnes CO₂e. This new process will also allow for a more accurate reflection of the methane emissions from the actual landfilled waste mix in future reports.

Biosolids diversion has saved the City from landfilling 221,219 tonnes of biosolids, producing 51,191 tonnes of CO₂e since 2020. In 2023, it accounted for 13,879 tonnes of CO₂e avoided, or 12.3% of the total Corporate Waste stream.

There has been a gradual decline in waste landfilled over the last three years. A peak in the amount of waste landfilled was last seen in 2020, with 344,087 tonnes of waste generating approximately 230,657 tonnes of CO₂e. The amount of waste landfilled in 2023 dropped by 26,505 tonnes of waste, or 11.5%, accounting for 17,767 tonnes CO₂e.



Figure 10 - Change in Corporate Waste Emissions, 2020-2023

Minutes – Council – June 26, 2025

Minute No. 368

Report – Standing Policy Committee on Water, Waste and Environment – June 9, 2025

Item No. 2 Winnipeg Climate Action Plan – 2024 Annual Report

COUNCIL DECISION:

Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That this report be received as information.

Minutes – Council – June 26, 2025

Report – Standing Policy Committee on Water, Waste and Environment – June 9, 2025

DECISION MAKING HISTORY:

Moved by Councillor Eadie,

That the recommendation of the Standing Policy Committee on Water, Waste and Environment be adopted by consent.

Carried

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On June 17, 2025, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On June 9, 2025, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

COUNCIL DECISION:

On July 13, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

ADMINISTRATIVE REPORT

Title: Winnipeg Climate Action Plan – 2024 Annual Report

Critical Path: Standing Policy Committee on Water, Waste and Environment – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
B. Raddatz, RPP, MCIP Manager, Office of Sustainability	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste	T. Graham	M. Dryburgh, Acting Interim CAO

EXECUTIVE SUMMARY

This report provides an outline of climate action and policy development in 2024. This was the second year of putting OurWinnipeg 2045 and the Community Energy Investment Roadmap (CEIR) into action. In line with federal and international goals, OurWinnipeg 2045 targets net zero emissions by 2050. CEIR is a technical plan based on evidence to achieve the City's climate action target. It updates both corporate and community greenhouse gas (GHG) inventories. Council directed the Public Service to implement CEIR in July 2022.

Emissions from City operations in 2024 were 319,811 tonnes of CO₂e. This reflects an increase of 12,034 tonnes of CO₂e from 2023. The single greatest contributing factor to this was an increase in landfilled waste. There was also more total wastewater treated, which was mostly balanced out by fewer emissions in the buildings sector. Both of these trends were caused by weather conditions, including more precipitation.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

On July 13, 2023, Council concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and adopted the following:

1. That the Winnipeg Climate Action Plan – Annual Report be received each year in June to allow for the data gathering and analysis required for the annual Corporate GHG inventory.

On September 20, 2018, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment that the Winnipeg Public Service report back annually to Council on the Winnipeg Climate Action Plan beginning in 2019.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendations of this report.

HISTORY/DISCUSSION

A summary of the City's climate action and policy development in 2024 is outlined in this report. This was the second full year of implementation for OurWinnipeg 2045 and the Community Energy Investment Roadmap (CEIR). OurWinnipeg 2045 is Winnipeg's guiding climate policy with the climate action target of net zero emissions by 2050. The CEIR identifies City and community-wide systems level actions and investments to achieve net zero emissions. Through the Corporate Greenhouse Gas Inventory process, the City tracks progress towards our climate action targets.

The CEIR identifies five key areas that need to make "big moves" when it comes to emissions reduction: buildings, transportation, local renewable energy, water and waste. In 2024, significant progress was made to prepare, plan and build capacity to support big moves in those areas. While this foundational work may not be immediately reflected in the Corporate GHG Inventory, it is essential in enabling the City and community to implement actions that reduce energy consumption, maximize energy efficiency improvements and transition to low-carbon energy sources to meet remaining energy demand. Substantively addressing climate change is more relevant than ever – investments made now will lock in emissions for decades to come.

Corporate Greenhouse Gas (GHG) Inventory

The Corporate GHG Inventory relies on departmental reporting of emissions-related data. This data is used by the departments to meet their own reporting requirements. It includes energy use and emissions from buildings, vehicles, equipment, water and waste infrastructure, and streetlights to measure the energy used and CO₂e emitted in providing the services and infrastructure for Winnipeg. This section provides a summary of the City of Winnipeg's 2024 Corporate GHG Inventory. In 2024, the City emitted almost 320,000 tonnes of CO₂e and used over 2.6 million gigajoules of energy. This energy use is comprised of 234.8 million kWh of electricity, 18.2 million cubic meters of natural gas, 6.6 million litres of diesel fuel, and 22.5 million litres of gasoline. More detailed accounting, including sector definitions, and in-depth analysis can be found in the appendix.

Emissions increased by 3.9 percent in 2024, with energy use decreasing by -0.6 percent. The increase in emissions was driven by higher levels of landfilled waste. This waste, which includes all material taken to the Brady Road Resource Management Facility, has a significant impact on reported emissions percentages for buildings and transportation. Small changes in landfilled waste can mask real shifts in emissions from buildings and transportation, two sectors where the City has more direct control. The increase of 12,233 tonnes CO₂e from landfilled waste was only partly offset by decreased emissions from natural gas (-359 tonnes CO₂e), aviation fuel (-87 tonnes CO₂e), and electricity (-3 tonnes CO₂e). Gasoline use and diesel use increased

slightly (49 tonnes CO₂e and 25 tonnes CO₂e, respectively). The decrease in energy use comes from a modest decrease in consumption of electricity (-1.1 percent) and natural gas (-1.0 percent), and a significant decrease in aviation fuel (-28.9 percent). This was partly offset by an increase in gasoline use (0.4 percent). Diesel use stayed effectively constant, increasing by just 0.04 percent.

	2024 Energy		2024 CO ₂ e		
	Total Energy (GJ)	Change from 2023 (%)	Total CO ₂ e (tonnes)	Change from 2023 (%)	Change from 2023 (tonnes CO ₂ e)
Buildings	835,714	-7.1%	24,391	-10.0%	-2,700
Transportation	1,086,415	0.0%	72,922	0.2%	162
Streetlights	110,042	0.0%	37	0.0%	0
Water and Wastewater	600,422	8.6%	10,467	28.8%	2,339
Corporate Waste	-	-	211,995	6.1%	12,233
Total	2,632,593	-0.6%	319,811	3.9%	12,034

**Table: Corporate Energy Use and GHG Emissions*

The largest areas of emissions change were due to:

- Total amount of waste landfilled at the Brady Road Resource Management Facility was up from 2023, with emissions up by 6.1 percent (12,233 CO₂e).
- Total wastewater treated was up by 15.4 percent due to increased precipitation in 2024.
- Increase in Transit fuel use emissions of 0.6 percent (an additional 269 tonnes CO₂e compared to 2023).

A Whole City Approach

Our climate action goals require climate considerations for all policy and spending decisions. The City of Winnipeg can show climate action leadership by leveraging its physical, financial and human assets to support full implementation of the CEIR.

In 2024, the City continued to advance efforts on embedding climate action into internal decision-making processes through committee work and policy implementation. The Senior Management Team Climate Steering Committee (SMTCS) created three action teams, focused on energy planning, electric vehicles and environmental benefits. Additionally, an interdepartmental core working group was created to provide strategic advice and support the update of the Winnipeg Climate Action Plan. In its first year, the Climate Action and Resilience Committee initiated two projects: one focused on identifying tools and mechanisms to align action with climate targets and another on public opinion research regarding climate action in Winnipeg – with both projects actively underway.

The Sustainable Procurement Action Plan marked its second year of implementation, piloting the Environmental Procurement Questionnaire through formal request processes (including bids, information, proposals, quotations and tenders). Environmental clauses and specifications from the Social Value Menu were also piloted to track the impact of the environmental

questionnaires and how business practices contribute to environmental goals and outcomes of the City and community.

The City also continued its administration of the Housing Accelerator Fund (HAF) agreement with the Canada Mortgage and Housing Corporation. Through the HAF Capital Grant Incentive, \$25 million was awarded in the first round of funding to support affordable housing projects and projects in Downtown Winnipeg. All approved projects were located near frequent transit and were evaluated for energy efficiency, aligning with HAF's objective to support the development of low-carbon and climate resilient communities.

CentrePlan 2050, a secondary plan by-law, was adopted by Council in September 2024. It serves as a policy and roadmap for action in Downtown Winnipeg, including initiatives to reduce greenhouse gas emissions by developing dense mixed-use neighborhoods, implementing the rapid transit network, adaptively reusing existing buildings, connecting to rivers and riverbank ecosystems, enhancing the pedestrian environment and installing green infrastructure.

Council also approved amendments to both the Winnipeg Zoning By-law (200/2006) and Downtown Zoning By-law (100/2004). These revisions promote sustainable development through higher-density, multi-unit housing and infill projects, particularly along underutilized commercial corridors and shopping mall sites, making more efficient use of existing infrastructure and public services.

Green Buildings

Buildings are the second largest source of GHG emissions in Winnipeg, accounting for an estimated 41.7 percent of community-wide emissions in 2024. City facilities accounted for 31.7 percent of overall energy use and 7.6 percent of emissions at the corporate level. The use of natural gas for heating purposes is the most significant driver of building emissions.

In the last year, corporate green building efforts focused on policy development to lay the foundation for net zero City buildings. These efforts include continued work on updating the Green Building Policy for New-City Owned Buildings and Major Additions and the development of a Building Emissions Reduction Strategy for existing buildings, both expected for Council approval in 2025.

The City also continues to apply actions from the CEIR to new and existing buildings. This includes energy efficiency targets and carbon reduction requirements for new buildings and seeking financial support for energy efficient upgrades to existing buildings through Efficiency Manitoba programs. These energy efficiency targets, and carbon reduction requirements continue to be monitored as the City advances design for three new capital projects, including the South Winnipeg Recreation Campus (SWRC), Winnipeg North Transit Garage (WNTG) and East of the Red Recplex (ERRP). SWRC and WNTG have been funded for construction, whereas ERRP has not been at this time. For existing City buildings, a total of \$148,000 was received in financial support from Efficiency Manitoba programs in 2024, with the majority for energy efficient lighting upgrades.

Zero-Emissions Transportation

Transportation is the largest source of GHG emissions in Winnipeg, accounting for an estimated 49.9 percent of community-wide emissions. It includes personal vehicle use, commercial operations, transit, heavy transportation and off-road vehicle use. Fuel use for City operations,

including fleet, equipment and waste hauling contractors accounted for 41.3 percent of overall energy use and 22.8 percent of total emissions.

In 2024, the City completed zero emissions transportation initiatives centered around transit electrification and the electrification of vehicle transportation (personal, commercial, City fleet). These initiatives included facility modifications at the Fort Rouge Garage to service and repair battery electric and hydrogen fuel cell buses and a study of the City's infrastructure compatibility for electric vehicles. The study will inform future decisions on charging equipment installation and purchase of municipal fleet. The City also continued the Flexible Workplace Program for a second year, resulting in 22,803 trips saved per month for commuting, with a total of 1,153 tonnes CO₂e avoided.

The EV Public Charger Pilot Program concluded in 2024, which resulted in the implementation of a pricing policy to encourage turnover and allowing more access to chargers. The final year of the pilot saw a 47.8 percent increase in usage from the year prior. During the pilot, there were 10,376 charging sessions, 90.5 megawatt-hours of electricity dispensed and 94 tonnes of CO₂e avoided.

Local Renewable Energy

CEIR identifies that, after reducing the need for energy and increasing energy efficiency, electrification of heating and transportation is key to reaching net zero emissions. Hydroelectricity can be supplemented by local production, including solar generation which can reduce the need to build new grid-scale generating capacity.

Over the past year, clean energy actions concentrated on removing barriers for local production in the community and increasing solar energy generation in new and existing City buildings. As part of these efforts, Council approved zoning by-law amendments, including an exemption from the development permit process for solar photovoltaic (PV) systems mounted on buildings a minimum of eight feet above grade or ground mounted installations. Winnipeg Transit also received a draft report detailing the preliminary design and Class 3 cost estimate for a proposed grid-tied microgrid at the Brandon Garage. The microgrid is expected to consist of energy generation from a rooftop solar PV installation and an existing diesel genset, supported by an integrated battery storage system and microgrid controller.

Sustainable Waste Management

Community GHG emissions from waste come from both City-owned and private landfills. Organic matter in landfills decays over time and can continue to release GHGs long after it is buried. Waste accounted for an estimated 7.6 percent of community-wide emissions, and 66.6 percent of corporate emissions in 2024.

The City carried forward several sustainable waste management initiatives in 2024. These included sustained financial support through the Compost Support Program and the approval of an annual operating grant to support food waste drop-off stations, in partnership with Compost Winnipeg. As a result, 15 stations were launched across the city to help divert residential food waste from the landfill. This program is expected to remain in place until a city-wide green cart program is implemented.

Work on the development of the green cart program also progressed, with efforts focused on the procurement of organic waste processing services through consultant support and issuing a

Request for Qualifications. The City also completed its review of the Comprehensive Integrated Waste Management Strategy (CIWMS). The final report, anticipated in 2025, will outline recommended options to guide planning for the next five to ten years.

To support the implementation of the Multi-Family Waste Diversion and Management Strategy, one full-time equivalent (FTE) position, a Waste Diversion Specialist, was added. Promotional and educational programming was delivered to inform residents of multi-family properties about waste minimization opportunities and available waste diversion programs through collaboration with Winnipeg Public Libraries and community groups.

For the fourth consecutive year, 100 percent of biosolids were beneficially used through soil fabrication and land application. In total, 62,366 tonnes were diverted from the landfill, equivalent to 14,432 tonnes of CO₂e avoided, a 4 percent increase from 2023.

Resilience

Resilience refers to actions taken to address the impacts of climate change and to respond to the local impacts of climate change. Projected climate impacts include extreme heat days, intense summer precipitation events, drought, and increased freeze-thaw events. Overall, the climate will continue to become more unstable as more carbon pollution is released into the atmosphere.

In 2024, the City continued to take action to increase climate resilience through policy and community-based initiatives. The Winnipeg Comprehensive Urban Forestry Strategy completed its first year of implementation, with focused efforts on working towards meeting accelerated public tree replacement and pruning cycle targets, while development of the Greenspace and Natural Corridors Plan Bylaw (Greenspace Plan) and Biodiversity Policy continued to progress. The Poverty Reduction Strategy also completed the first year of implementation under its new plan (2024-2027). Eight hydration stations were installed to increase access to clean drinking water for at-risk and unsheltered residents during the summer season and reduce heat-related illnesses (action 4.4.1). A water fountain was installed at Giizhigooweyaabikwe Park to ensure park infrastructure incorporates climate change adaptation (action 4.4.2).

Community engagement for the Winnipeg Clean Air Spaces project continued, including a clean air exercise at Sergeant Tommy Prince Place, and a key stakeholder workshop. The key stakeholder workshop focused on risk perception and development of a communication strategy to increase awareness during poor air quality events. Ready Winnipeg sessions reached over 500 individuals in the community, building public awareness on hazards, personal preparedness and resiliency.

The City contributed \$455,000 towards various community-based initiatives through the Home Grown Winnipeg Tree Planting Program, Land Dedication Reserve Fund and the Winnipeg Food Council's Urban Agriculture and Community Gardens Small Grants Program. These initiatives support climate resilience through nature-based solutions and strategic land use.

FINANCIAL IMPACT

Financial Impact Statement**Date:** May 8, 2025**Project Name:****Winnipeg Climate Action Plan – 2024 Annual Report****COMMENTS:**

There is no financial impact associated with the recommendations of this report

Lucy Szkwarek, FCPA, FCGA

Lucy Szkwarek, FCPA, FCGA

Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

- Assets and Project Management
- Planning Property and Development
- Public Works
- Purchasing
- Transit
- Winnipeg Fire Paramedic Services
- Deputy Chief Administrative Office

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg Goal: Leadership and Good Governance

Objective 1. Establish and implement priority actions through evidence-informed decision-making processes.

Evidence-informed actions require transparent and accountable decision-making to determine the long-term public interest and the appropriate trade-offs in levels of service, taxation, and budget priorities.

OurWinnipeg Goal: Environmental Resilience

Objective 1. Prioritize the transition to a resilient, low-carbon future through demonstrated organizational and community leadership, and collaborative actions that mitigate and adapt to a changing climate.

Recognize that climate changes will have significant impacts on community assets and services, and include consequences for human health, social welfare, the natural and built environments and ecosystems, the economy, and urban infrastructure. Adapt government regulation, policy, resource allocation, organizational culture and leadership, partnerships, and resident behaviors and awareness, to empower the community to realize the many benefits that emerge when mitigating greenhouse gas emissions, preparing for and reducing risks to lessen the shocks, stresses and other negative impacts of climate change.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Strategic Opportunity #1: Corporate Leadership

Key Direction #1.1 Cultivate a Corporate Culture That Values Climate Action

Strategic Opportunity #7 Community Climate Resiliency

Key Direction #7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

The Winnipeg Climate Action Plan aligns with the Winnipeg Poverty Reduction Strategy as both place focus on building a more resilient, sustainable, and equitable city for all residents. The Plan and the Winnipeg Poverty Reduction Strategy both represent the intention for increased resiliency of our communities, municipalities, and the city as a whole, while also placing emphasis on providing increased support to residents experiencing poverty related to the effects of climate change.

SUBMITTED BY

Department: Water and Waste Department
Division: Office of Sustainability
Prepared by: Janelle Harper, Green Buildings Specialist
Date: May 12, 2025
File No: O-005

Attachments:

Appendix A: City of Winnipeg Corporate Greenhouse Gas Emissions 2024