Winnipeg

Winnipeg's Climate Action Plan

Planning for Climate Change • Acting for People

REPORT

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Table of Contents

Acknowledgements ii

Executive Summary iii

1 Introduction 1

1.1 Report Structure 2

2 Winnipeg Climate Action: Background And Context 3

2.1 Why Climate Action Matters In Winnipeg 3

2.2 Winnipeg's Climate-Related Policy, Regulatory Context And Membership In The Federation Of Canadian Municipalities Partners For Climate Protection Program 5

2.3 Community Environment And Energy Profile 9

3 A Winnipeg Climate Action Plan 16

4 Climate Action Vision 19

4.1 Vision 19

5 Emission Reduction Targets 20

5.1 Emission Reduction Sector Targets 21

6 Strategic Opportunities And Actions 24

7 Implementing The Plan 55

Appendices

Appendix A - Background on Climate Policy and Related Council Direction in Winnipeg

Appendix B - Best Practices in Climate Action Planning

Appendix C - Engagement Process and Public Input Reports

Appendix D - Current Corporate Climate Action Activities

Appendix E – FCM Green Municipal Fund

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- Aboriginal Council of Winnipeg
- Assiniboine Credit Union
- Bike Winnipeg
- Canadian Mennonite University
- Canadian Mortgage and Housing Corporation
- Centre for Indigenous Environmental Research
- Climate Change Connection
- Downtown BIZ Association
- Green Action Centre
- International Institute for Sustainable Development (IISD)
- Manitoba Chamber of Commerce
- Manitoba Chapter - Canada Green Building Council
- Manitoba Energy Justice Coalition
- Manitoba Environmental Industries Association.
- Manitoba Home Builders Association
- Manitoba Hydro
- Manitoba Trucking Association
- Peg - Winnipeg's Community Indicator System (United Way Winnipeg and IISD Partnership)
- Province of Manitoba
- Red River College
- Risk Sciences International
- University of Winnipeg
- University of Manitoba
- Urban Development Institute
- Winnipeg Chamber of Commerce
- Winnipeg Foundation
- Winnipeg Metropolitan Region
- Winnipeg Regional Health Authority

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EXECUTIVE SUMMARY

Climate change represents one of the world's greatest environmental challenges. Responding to growing global concerns around climate change, governments at all levels are taking actions to both mitigate their impacts on the environment and adapt municipal plans and infrastructure to meet the physical demands of a changing climate.

In 1998, the City of Winnipeg joined the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) Program. The PCP outlines five key milestones in a flexible and performance-based process that helps over 300-member municipalities build the capacity to incorporate climate change into their planning and decision making. Upon joining the program, the City of Winnipeg committed to reducing its community-wide greenhouse gas emissions by 6%. Effectively pursuing this reduction necessarily includes the need for a corresponding action plan and timeline.

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 provides a framework to proactively, meaningfully, and effectively mitigate climate change by reducing greenhouse gas emissions. Working together with partners to reduce emissions the City can also:

- Create a more prosperous, innovative and diverse local and regional economy
- Construct more complete neighborhoods and revitalize the livability of all communities throughout Winnipeg
- Improve the efficiency of transportation networks and reduce traffic congestion
- Build and maintain healthier buildings to live and work in which are less expensive to operate
- Enhance connectivity of green spaces and parks throughout Winnipeg to support biodiversity and natural systems

Winnipeg's Climate Action Plan is the result of several years of work by the City of Winnipeg, community leaders, stakeholders, technical experts and the public. The development of the Action Plan has been comprised of two phases:

PHASE 1 Understanding Winnipeg's energy and greenhouse gas emissions inventory, and modelling of three emissions reduction scenarios. The inventory is referenced throughout the Plan.

PHASE 2 Development of ***Winnipeg's Climate Action Plan*** that includes a climate vision, refreshed targets, actions, and an implementation strategy that identifies opportunities for the City to work with the community to reduce emissions through policy, regulation and programming. The Plan was developed through extensive community engagement with local stakeholders and residents, as well as work across City departments. Diverse engagement techniques (including storytelling, community speakers, online engagement, and focused workbook discussions) were used to encourage a conversation about the vision for climate action in Winnipeg, along with specific directions to enable climate action in the community. These aspirations and directions formed a foundation for the process to identify and develop possibilities to be considered in the Plan. Best practices research and technical analysis were incorporated into the process throughout.

The City acknowledges the need to also undertake planning related to climate adaptation, as these efforts are most effectively addressed in concert with mitigation. Strategic Opportunity #7 of this report emphasizes the value in dedicating additional resources to develop a climate resiliency strategy.

A Vision and Targets for Climate Action

A vision and targets for greenhouse gas emission reductions are important to communicate how the community prioritizes the issue of climate action. The vision and targets offer perspectives about the *end states* – what is important for City residents when they consider their community and their environment in 2050.

The aspirations for climate change action in Winnipeg are grounded in traditional worldviews of Indigenous Peoples and in harmony with their distinctive spiritual relationship with the land and natural resources: our actions today need to have sustainable implications for the energy, water, natural resources, and people seven generations into the future. This perspective is reflected in an excerpt from Winnipeg's Indigenous Accord Vision:

"The City of Winnipeg is a place where everyone has a voice, a place where people and the environment come first, where everyone has fair access…"

The Accord Vision was developed by children gathered in harmony to visualize the future of Winnipeg and it serves as a starting place for Winnipeg's Climate Action Plan vision. This Vision is as follows:

- Winnipeg is recognized as a leading Winter City in greenhouse gas emissions reductions and climate action.
- By approaching climate mitigation through the lens of 'all things being connected', Winnipeg realizes holistic co-benefits from climate change action that increases jobs and economic activity, improves health outcomes of citizens, and increases social equity and affordability for Winnipeggers.
- The built environment in Winnipeg is highly efficient and maximizes opportunities for energy efficiency and renewable energy sources.
- Winnipeg facilitates compact development and healthy neighbourhoods that are connected through a network of active and transit-oriented mobility options. This means that the City strategically integrates climate action within both land use and transportation decision-making.
- Indigenous relationships and excellence (stewardship) enable a low carbon future in the true spirit of reconciliation.

Renewed greenhouse gas emission reduction targets support the community's vision and reflect the science of climate change mitigation – both what is possible, and what is necessary to avoid catastrophic impacts associated with climate change. This has evolved significantly in the past 20 years since the adoption of the City's first community wide greenhouse gas reduction target. The renewed targets include:

20 per cent reduction *in greenhouse gas emissions* ***by 2030*** *relative to 2011 levels.*

80 per cent reduction *in greenhouse gas emissions* ***by 2050*** *relative to 2011 levels.*

Strategic Opportunities, Key Directions and Actions

Winnipeg's Climate Action Plan includes a series of seven Strategic Opportunities along with supporting Key Directions and Actions that support the vision and targets. Together they provide a comprehensive package of solutions to enable climate action and help the City on a path to its desired future.

The following provides a summary of each Strategic Opportunity area and the supporting Key Directions which shape and categorize more detailed action areas. For each Key Direction, Primary Responsibility is designated to a City department. The body of Winnipeg's Climate Action Plan includes a detailed set of actions for each Key Direction along with an implementation timeline of either short term (2018-2022), medium term (2022-2026), or long term (2027 onwards).

Strategic Opportunity #1	
Corporate Leadership	
Description	Climate action that sets Winnipeg on a path towards reaching its greenhouse gas mitigation target requires integrated and concerted actions by the entire community. City leadership in climate action is essential to creating momentum for broad uptake and action in the community.
Key Directions	**1.1** Cultivate A Corporate Culture That Values Climate Action (Primary Responsibility: Office of Sustainability) **1.2** Understand and Integrate Business and Economic Implications of Climate Action into Decision Making Processes (Primary Responsibility; Office of Sustainaiblity) **1.3** Implement Low Carbon and Energy Efficient City Facilities and Buildings (Primary Responsibility: Planning, Property, and Development Department) **1.4** Encourage Sustainable Transportation Options (Primary Responsibility: Winnipeg Fleet Management Agency) **1.5** Reduce Employee Vehicle Kilometers Travelled (VKT) and associated GHGs (Primary Responsibility: Winnipeg Parking Authority) **1.6** Reduce Consumption and Increase Waste Diversion (Primary Responsibility: Office of Sustainability) **1.7** Increase Opportunities to Respond to Food Needs Throughout Winnipeg and Increase Access to Local and Sustainable Food (Primary Responsibility: Office of Sustainability) **1.8** Ensure the City's Land Use, Transportation and Built Environment Policy, Bylaw and Regulation Recognize the Council-Approved Climate Protection and Mitgation Priorities (Primary Responsibility: Office of Sustainability) **1.9** Work with Indigenous Communities, the Province, and the Federal Government to Advance Climate Action (Primary Responsibility: Office of Sustainability)
Strategic Opportunity #2	
Empower Community Leaders and Collaborate with Stakeholders	
Description	Winnipeg cannot achieve its community climate change emissions targets with action taken solely through actions implemented by the City. Successful climate action strategies amplify and align the knowledge and efforts of local business, community organizations, and citizens to generate additional momentum for climate action. A key opportunity is to further enhance levels of collaboration between the City and community leaders, industry, academia and other stakeholders.
Key Directions	**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) **2.2** Develop Public Education and Awareness Campaigns Related to Sustainable Transportation (Primary Responsibility: Public Works Department) **2.3** Create Conditions to Enable Community Climate Action (Primary Responsibility: Office of Sustainability)

Strategic Opportunity #3	
Advancing Sustainable Transportation – Increasing Mobility Options and Shift to Zero Emission Vehicles	
Description	Increasing access to mobility options and fuel switching are key directions for reducing emissions from transportation. Key directions aim to directly shift City residents out of single occupancy vehicles through sustainable transportation options with lower or no emissions (walking, cycling, public transit, carshare, and carpooling) or indirectly enable diverse mobility choices through the development of higher density, and more complete communities. A key opportunity to advance fuel switching in Winnipeg is through electric vehicles for both private vehicles and public transit.
Key Directions	**3.1** Increase Use and Efficiency of Public Transit Systems (Primary Responsibility: Winnipeg Transit) **3.2** Increase the Density of Urban Development Along Key Transit Corridors (Primary Responsibility: Planning, Property and Development Department) **3.3** Design New Suburban Communities to Enable Enhanced Transit Services and Access to Transit Corridors (Primary Responsibility: Winnipeg Transit) **3.4** Increase Active Transportation Rates (Primary Responsibility: Public Works Department) **3.5** Reduce Traffic Congestion (Primary Responsibility: - Public Works Department) **3.6** Increase the Use of Electric Vehicles (Primary Responbility: Public Works Department) **3.7** Utilize Zero Emission Buses (Primary Responsibility: Winnipeg Transit)
Strategic Opportunity #4	
Facilitate Compact, Complete Development and Increase Density	
Description	Winnipeg's built environment and public realm are a key part of how citizens and visitors choose to get around the City. Research shows that energy used for transportation increases as a city becomes more spread out and as housing, jobs, daily needs and recreation or community destinations become more dispersed. Complete communities and increased density throughout the City allow new growth and development to create the conditions for sustainable transportation choices leading to reduced greenhouse gas emissions. These actions have co-benefits related to public health including increased outdoor physical activity and access to healthy foods. As well, amenities within close proximity to where people live and work equalize opportunities, especially amongst people disadvantaged by income or other barriers.
Key Directions	**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) **4.2** Ensure New Areas of Growth are Designed According to the Principles of Complete Communities (Primary Responsibility: Planning, Property and Development Department) **4.3** Pursue Transit-Oriented Development (Primary Responsibility: Planning, Property and Development Department) **4.4** Support Redevelopment of Former Commercial and Industrial Lands into Active Use (Primary Responsibility: Planning, Property and Development Department)

Strategic Opportunity #5	
Low Carbon and Energy Efficient Buildings	
Description	In order to lower energy and greenhouse gases used in Winnipeg's new and existing buildings, the City and community need to find better ways to understand the energy use and emissions from buildings and provide builders with the tools and resources (where needed and feasible) to support these retrofits and designs.
Key Directions	**5.1** Increase Energy Performance of Existing Buildings (Primary Responsibility: Planning, Property and Development Department) **5.2** Improve Energy Performance of New Buildings (Primary Responsibility: Planning, Property and Development Department) **5.3** Increase Access to Educational Materials (Primary Responsibility: Office of Sustainability) **5.4** Build Climate Equity (Primary Responsibility: Office of Sustainability)
Strategic Opportunity #6	
Waste Reduction and Diversion	
Description	Advancing waste reduction and diversion initiatives is a critical part of reducing the City of Winnipeg's overall greenhouse gas emissions and can help to address other environmental challenges. Strategies that maximize the diversion of organic wastes from the landfills are critical, along with reusing resources, which not only reduces the raw materials used in their production, but also reduces emissions from the transportation of new and waste products.
Key Directions	**6.1** Reduce Consumption and Increase Waste Diversion from Residential, Commercial and Industry (Primary Responsibility: Water and Waste Department). **6.2** Advance Winnipeg's Circular Economy to Support Waste Reduction (Primary Responsibility: Water and Waste Department) **6.3** Utilize Biosolids In Agriculture and Landscaping Industries (Primary Responsibility: Water and Waste Department) **6.4** Support Integrated Resource Recovery Opportunities (Primary Responsibility: Water and Waste Department)
Strategic Opportunity #7	
Community Climate Resiliency	
Description	Climate resilience is the integration of climate mitigation and climate adaptation. Communities are facing serious threats related to public health, infrastructure costs, economic viability, and social equity associated with climate change. During the public consultation for this Plan, numerous participants identified the important connection between climate adaptation and mitigation. They expressed a clear desire for the City to take a holistic approach to climate action that considers multiple co-benefits between adaptation and mitigation. Opportunities for additional climate resilience actions need to be considered in a formal Climate Adaptation Strategy.
Key Directions	**7.1** Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate (Primary Responsibility: Office of Sustainability) **7.2** Increase and Preserve Tree Canopy (Primary Responsibility: Public Works Department) **7.3** Preserve and Manage Parks and Natural Areas to Support Climate Change Mitigation (Primary Responsibility: Public Works Department)

Implementation

The comprehensive package of Key Directions and Actions within each Strategic Opportunity area is intended to support and advise Winnipeg's planning and capital investment decisions, as well as the ongoing operations and maintenance activities required to help enable these climate actions. A long-term vision requires significant investment, and an implementation strategy that prioritizes actions, identifies accountabilities, and integrates continuous learning through monitoring and reporting. The implementation strategy for Winnipeg's Climate Action Plan is based on the following principles that the City will consider as it moves forward with implementing the Actions.

The Climate Action Plan is the first step, not the last step. Winnipeg's Climate Action Plan is the first community wide strategy for comprehensively addressing climate mitigation in Winnipeg. The actions are intended to lay the foundation for impactful climate action that sets Winnipeg on a trajectory to achieve its emissions reduction target. The Strategic Opportunities, Key Directions, and Actions are meant to be a first step in a long-term commitment to enabling climate action. Implementation of the Actions will require sustained and dedicated financial and staff resources, as well as consistent community collaboration over the long-term.

The Climate Action Plan is a flexible and living document. The City intends to review and update the Action Plan frequently. The City should monitor progress towards implementing the short-term actions over the 2018-2022 Council term. It should also commit to reviewing and updating the Strategic Opportunity areas 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.

Corporate collaboration and alignment are key components of implementation. A key aspect of the Plan is that it is tied closely to other departmental strategies and policies (e.g., Comprehensive Integrated Waste Management Strategy, Transit Oriented Development, etc.) The Plan represents a roll-up of all GHG emission reduction programming, policies and planning. The Climate Action Plan outlines Strategic Opportunity areas that will require ownership and accountability from a wide variety of City departments. It will be important to align administrative objectives within various departments to the strategic opportunity areas and priority actions within the Climate Action Plan. The City should continue to convene the Climate Change Working Group to ensure that implementation is coordinated throughout the administration.

Climate Action involves the entire community. The City is best positioned to lead the overarching community's efforts related to climate action and has an important convening role to coordinate and generate momentum in the wider community. As such, the City will work to engage in direct partnerships with community organizations, establish a Community Advisory Committee, and undertake additional public consultation. It is important to note that many of the Actions will require additional detailed input and technical work prior to implementation. Community and stakeholder engagement will help to inform this work.

Successful implementation of the Actions requires:

- Increased funding levels
- Increased staff resources
- Improved corporate collaboration across all City departments
- Improved monitoring
- Continued collaboration with stakeholders and community

Through each of these implementation principles, the City can continue to improve the community's resilience to climate change, in particular though the advancement of leading policy, regulation and programming.

1 INTRODUCTION

Climate change represents one of the world's greatest environmental challenges. The planet's climate is changing at a faster pace than at any other time in recorded history[1]. The scientific community agrees that human influence on the environment from the consumption of fossil fuels is the principal cause of global climate change. This is due to the fact that the combustion of fossil fuels results in the release of carbon dioxide; one of several greenhouse gases[2] that strengthen the greenhouse effect, playing a critical role in increasing global temperatures.

The impacts of climate change are being felt in cities globally, as communities experience the impacts of global temperature changes. Climate change impacts the intensity and frequency of precipitation, changes to temperatures, frequencies of drought, and other extreme weather events. These changes increase impacts on cities and can shorten the service life of municipal infrastructure. While communities work to adapt to climate change, the effort to mitigate impacts is an important and primary focus to ensure a sustainable future. The planet cannot sustain continued rates of fossil fuel consumption.

The ***Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People,*** provides a framework for the City of Winnipeg and the broader community to proactively, meaningfully, and effectively reduce greenhouse gas emissions. By working together with partners to reduce emissions, the City can also:

- Create a more prosperous, innovative and diverse local and regional economy
- Construct more complete neighborhoods and revitalize the livability of all communities throughout Winnipeg
- Improve the efficiency of transportation networks and reduce traffic congestion
- Build and maintain healthier buildings to live and work in, which are less expensive to operate
- Enhance connectivity of green spaces and parks throughout Winnipeg to support biodiversity and natural systems
- Enhance connections and opportunities to work with regional communities

Opportunities exist to mitigate the effects of climate change by reducing greenhouse gas emissions. Moreover, the added benefits (or co-benefits) to health, economic, and social equity are clear and well documented. At the same time, rising fuel costs and the introduction of carbon taxes make reducing fuel and energy use a higher priority. Taking action requires leadership from the global community, national, provincial and municipal governments, and individuals. Everyone must play a part.

[1] See the "Fourth Assessment Report: Climate Change 2007", produced by the Intergovernmental Panel on Climate Change. Available at: http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml
[2] Methane, Nitrous oxide, Water vapour, Perfluorocarbons (PFCs), Sulphur hexafluoride (SF6), Hydrofluorocarbons

Winnipeg's Climate Action Plan is the result of several years of work by the City of Winnipeg, community leaders, stakeholders, technical experts and the public. The development of the Action Plan has been comprised of two key phases:

PHASE 1 Understanding Winnipeg's energy and greenhouse gas emissions inventory, and modelling of three emissions reductions scenarios.

PHASE 2 Development of ***Winnipeg's Climate Action Plan*** that includes a climate vision, refreshed targets, actions, and an implementation strategy that identifies opportunities for the City to work with the community to reduce emissions through policy, regulation and programming. The Plan was developed with extensive community engagement with local stakeholders and residents, as well as work across City departments.

1.1 Report Structure

The Winnipeg Climate Action Plan is organized into 8 key sections:

	Topic	Purpose
Part 1	Introduction	Introduces the Plan and provides an outline guide to the document.
Part 2	Background and Context	Highlights the context for this Plan, including a history and profile of the City of Winnipeg, and a brief overview of the local impacts the city can expect to see as a result of global climate change.
Part 3	Partners for Climate Protection, Policy and Regulatory Context	Summarizes the Federal climate change program, Winnipeg's background and history addressing climate change, and outlines current plans and regulations that relate to climate action in the city.
Part 4	A Winnipeg Climate Action Plan	Summarizes the two phases of the climate action planning process, the GHG Inventory and Forecast, and Winnipeg's Climate Action Plan.
Part 5	A Climate Vision	Articulates the overarching vision and guiding principles to guide and inform how Winnipeg approaches decision making and prioritization of climate change actions.
Part 6	Emissions Reductions Targets	Establishes targets for the City of Winnipeg to 2030 and 2050, including a series of sub sector targets to guide community actions and investments.
Part 7	Strategic Opportunities and Actions	Outlines seven Strategic Opportunities along with supporting Key Directions and Actions that support the vision and targets. Together they provide a comprehensive package of policy, program and project solutions in the short, medium and long-term to reduce the City's greenhouse gas emissions.
Part 8	Implementation Strategy	Outlines implementation principles, priority actions, and a framework for continuous learning through monitoring and reporting.

2 WINNIPEG CLIMATE ACTION: BACKGROUND AND CONTEXT

The City of Winnipeg is a vibrant and growing community in the heart of the Canadian prairies. With its location around the confluence of the Red and Assiniboine Rivers, the area has served as a meeting place for Indigenous peoples for thousands of years. The broader region falls within Treaty #1 and is recognized as the traditional territory of the Anishinaabe, Cree and Dakota people, as well as the birthplace of the Metis Nation and Heart of the Metis Homeland.

As the largest city in Manitoba, the 749,500 residents who currently call Winnipeg home represent 60% of Manitoba's total population. Incorporated in 1873, Winnipeg's growth and development patterns were originally shaped by the railway, which supported the farming and agricultural industry of the region. Situated in the fertile Red River floodplain, the highly productive agricultural lands of the area have long defined the local character and economic life of Winnipeg. As such, farmland has historically influenced the settlement pattern and growth of the community.

Winnipeg has a number of natural and economic assets that attract many people to live in and visit the City, and to enjoy its services, amenities and distinct culture. Winnipeg experiences a continental climate with a vast temperature range from hot summers to very cold winters. Its flat topography and location on a floodplain make the city prone to flooding, though the city's Red River Floodway (built in 1969; expanded in 2009) provides some protection.

The city is a multi-cultural municipality and regional centre with a diverse economy based on manufacturing, service, government and trade. After relatively flat growth in the 1980s and 1990s, Winnipeg has been experiencing rapid population growth since 2011. This growth is largely driven by immigration. This growth is forecast to continue at a rate of about 9,000 to 10,000 new residents per year over the next 20 years.

2.1 Why Climate Action Matters in Winnipeg

Climate change is having, and will continue to have, impacts locally and around the globe, but what does this mean for Winnipeg?

The Climate Atlas of Canada (formerly the Prairie Climate Atlas) —developed by the Prairie Climate Centre at the University of Winnipeg—documents scientific projections for all parts of Canada, including the Prairies, where a substantial amount of warming is expected to occur in the coming decades. For example, if we fail to significantly reduce our global emissions, Winnipeg is projected to see the number of hot days (30+ degree C) increase from an average of about a dozen per year (in 1976-2005) to an average of almost 50 days (in 2051-2080). The projections also indicate that the city will get more intense summer precipitation events, but also an increased risk of drought.

A warming climate will also mean more moderate winter weather. Winter, spring, and fall seasons are also expected to get more precipitation while summers are projected to have less precipitation. Year-to-year variability is likely to increase.

Community members are already experiencing the effects of climate change. For Western Canada as a whole, annual average air temperatures have risen by approximately two degrees since 1950, which is about double the rate of warming for the globe as a whole, while winter temperatures have increased by about four degrees[1].

[1] The Changing Climate and Environment of the Interior of Western Canada (2018). http://www.ccrnetwork.ca/outputs/information-products/docs/Environmental_Change_in_Western_Canada.pdf

Winter and spring temperatures have increased more than those in the summer and fall[2]. Other observed changes include increased precipitation, reductions in maximum snow depth (and duration of snow cover), and an increased frequency of extreme weather events (e.g., flooding)[3].

In addition to warmer temperatures, climate models project changes in precipitation patterns and generally increased variability (i.e., extreme weather events such as storms, floods and forest fires). As a result, climate change may create a number of new challenges for Winnipeg, including, but not limited to, the following:

- Risk of drought leading to possible problems for local agricultural operations.[4]
- Impacts on City infrastructure, including sewers and wastewater treatment facilities, when assumptions used in design are exceeded as a result of extreme weather events.[5] For example, individual homeowners could be at increased risk of flooding if sewers are overwhelmed during a storm event.
- Potential strain on the City's electrical grid caused by increased cooling requirements (i.e. from hotter temperatures) as well as exposure to events such as ice storms and wind storms.[6]
- As a result of extreme weather events, damage to transportation infrastructure, impairing the ability of municipalities to transport food to and within the City, as well as challenges for individual residents to leave their homes to obtain basic needs such as groceries. An example of this was the food security issues Québécois people experienced in the 'Great Ice Storm of 1998'.
- Introduction of new pests and invasive species previously not found in and around the City that could impact local flora and fauna. A recent example is the introduction of the Emerald Ash Borer to Winnipeg's urban forest, which is expected to take a heavy toll on ash trees.
- Risks to human health from heat events (extremely hot summer days leading to heat exhaustion and heat stroke), air quality changes (smoke from forest fires in the province and elsewhere) and changes related to food security (inability to access locally-produced foods as a result of climate changes).
- Financial risk and insurance implications for municipalities (and individuals) resulting from damage to infrastructure, adverse health effects, and other climate risks[7].

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[2] Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation (2014). https://www.nrcan.gc.ca/environment/resources/publications/impacts-adaptation/reports/assessments/2014/16309

[3] The Changing Climate and Environment of the Interior of Western Canada (2018). http://www.ccrnetwork.ca/outputs/information-products/docs/Environmental_Change_in_Western_Canada.pdf

[4] Temmer J. 2017. Building a climate-resilient city: Agriculture and food security. International Institute for Sustainable Development and the University of Winnipeg.

[5] McCullough S. 2017. Building a climate-resilient city: Economics and finance. International Institute for Sustainable Development and the University of Winnipeg.

[6] Venema H, Temmer J. 2017. Building a climate-resilient city: Electricity and information and communication technology infrastructure. International Institute for Sustainable Development and the University of Winnipeg.

[7] McCullough S. 2017. Building a climate-resilient city: Economics and finance, International Institute for Sustainable Development and the University of Winnipeg.

2.2 Winnipeg's Climate-related Policy, Regulatory Context and Membership in the Federation of Canadian Municipalities Partners for Climate Protection Program

Over the past 20 years, Winnipeg has joined other major cities in a commitment to actively reduce greenhouse gas emissions from both their corporate and community sectors. This section provides a brief overview of the city's history, and current regulations related to climate action.

Partners for Climate Protection

On November 25, 1998, Winnipeg City Council formally signed on to the Federation of Canadian Municipalities (FCM) Partners for Climate Change Program (PCP). The PCP program was established in 1994 and serves as an umbrella network for over 300 municipalities committed to reducing greenhouse gases and acting on climate change. The basis for the program is a five-step milestone process that provides support to municipalities as follows:

Milestone 1 – Create a baseline emissions inventory and forecast
Milestone 2 – Set emissions reduction targets
Milestone 3 – Develop a local action plan
Milestone 4 – Implement the local action plan
Milestone 5 – Monitor progress and report results

This milestone approach is a flexible, performance-based process through which FCM members can build capacity to incorporate climate change into their planning and decision-making. Since joining the program, Winnipeg has reached Milestones 1. Council endorsement of this Plan would allow Winnipeg to apply for community level recognition for achieving Milestone 2 and 3 in the PCP program.

Background on Climate Policy and Related Council Direction in Winnipeg

OurWinnipeg is Winnipeg's blueprint, developed to guide the growth and progress of the City. The plan is supported by four Direction Strategies – *Sustainable Water and Waste*, *Sustainable Transportation*, *Complete Communities* and *A Sustainable Winnipeg* – that describe the policies, directions and strategies necessary for successful implementation of the plan.

Generally, *OurWinnipeg* directs a move towards compliance with contemporary building code standards, and overall reduction in the environmental impact of both corporate and community activities, through strategies such as planning for sustainable energy use and GHG reduction. *OurWinnipeg's* supporting Direction Strategies and associated plans (e.g., Transportation Master Plan and others) each address aspects of climate change. The Climate Action Plan and *OurWinnipeg* are intended to complement each other. Additional detail regarding the latter can be found in **Appendix A.**

In 2015, Mayor Brian Bowman, through participation in the Big City Mayors' Caucus, endorsed the following commitments to climate change action:

1. Support for binding GHG emissions reductions targets at the international, national and city level that address both short- and long-term commitments.
2. The development and implementation of municipal climate action plans that have specific actions designed to cut GHG emissions, identify the risks posed by climate change, and how those risks will be mitigated;
3. Regular reporting of municipal GHG emissions through the Carbon Disclosure Project, and a move towards standardized inventories and reporting to ensure greater accountability and transparency.

Also in 2015, at the Conference of the Parties (COP21), the Paris Agreement was signed by 194 countries, including Canada, in support of maintaining global temperature increases below two degrees Celsius and to set out a pathway for a low carbon future. The City of Winnipeg participated in this process to emphasize the important role of municipal governments in taking action on climate chance and reducing the greenhouse gas emissions. The Pan-Canadian Framework on Clean Growth and Climate Change, agreed to by the federal, provincial, and territorial governments in 2016, focuses on reducing greenhouse gas emissions by 30 per cent over 2005 levels by 2030.

In April 2016 the Executive Policy Committee created the Climate Change Working Group and provided the group a three-part mandate of: a) assessing the status of the City's commitment to FCM's PCP model; b) reviewing the status of *OurWinnipeg* as it relates to climate change initiatives; and c) reviewing new and developing climate change funding sources and partnerships.

In November 2016 Council received the technical report entitled *Winnipeg's 2011 Community Greenhouse Gas Inventory and Forecast*. The report updated the community-wide GHG emission inventories from 1994 and 1998, developed three emission forecast scenarios for 2050, and conducted an emissions reduction opportunities assessment. The inventory includes consideration of all emissions related to energy consumed and waste produced in Winnipeg – institutional, commercial, industrial (ICI), transportation and residential waste sectors. It also includes the City's corporate emissions, though these amount to approximately 1% of the total community emissions.

On September 27, 2017, Council received, as information, the report of the Climate Change Working Group. Recommendations included the following:

- That, as per previous direction from Council and *OurWinnipeg*, the City should proceed immediately with an RFP to support a comprehensive public consultation to develop a community-wide climate change action plan. This will be funded through an existing Green Municipal Funds grant (GMF) of $94,000. Community-wide targets to 2035 and 2050 should be established as an outcome of the community consultation and community-wide climate change action plan in line with timeframes set by other cities.
- That an Office of Sustainability be established in 2017, located in the office of the CAO. The Office of Sustainability should be responsible for all sustainability initiatives related to the City (both corporate and community-wide emissions). The Office of Sustainability would work collaboratively with City departments, other levels of government and the community to achieve the City's goals of sustainability and environmental quality as directed by Council.

The Office of Sustainability should collaborate with related citizen advisory groups, including, but not limited to the Active Transportation Advisory Committee, Green Fleet Advisory Committee, Waste and Diversion Advisory Committee, and Winnipeg Food Council. Furthermore, a Stakeholder Advisory Committee made up of representatives from various sectors and with different expertise on climate change issues should be established to guide the development of a Community Climate Change Action Plan. This will reaffirm the important role of citizen advisory groups in continuing to inform and advise the Public Service on important climate and sustainability issues.

Regulatory and Policy Context

Climate action planning takes place within a complex regulatory environment that includes legislation, regulations and by-laws at the federal, provincial and municipal levels. Table 2.1 provides an overview of regulatory considerations relevant to this Plan.

Table 2.1: Relevant Regulatory Context

Legislation/Plan/Policy	Reference	Description
CITY OF WINNIPEG		
The City of Winnipeg Charter	S.M. 2002, c. 39	Provides the City with authority as a responsible, accountable government while (amongst other things) enabling Council to streamline property planning and development. Also provides the City with authority to address community issues (e.g., to establish Tax Increment Financing programs).
OurWinnipeg Plan By-law	67/2010	The City of Winnipeg's municipal development plan that sets a vision for the next twenty-five years. It is supported by four Direction Strategies including *Complete Communities*, *A Sustainable Winnipeg*, *Sustainable Transportation* and *Sustainable Water and Waste.* The plan is currently under review.
Complete Communities Direction Strategy	68/2010	One of the four Direction Strategies that make up *OurWinnipeg*; it serves as a guide to land use and development in Winnipeg over the next 25 years. This direction strategy was adopted as bylaw.
Impact Fee By-law	127/2016	Grants the City of Winnipeg the authority to implement impact fees to help the City accommodate and manage its growth and development.
Transportation Master Plan		Policy sets out a strategic vision for transportation for Winnipeg to 2031. It is based on six strategic goals, one of which states – A transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emission reduction goals set by the City and Province.
Comprehensive Integrated Waste Management Plan		Provides direction for the City's waste management system through recommendations to improve current waste diversion programs, make progress towards zero waste and to address processing and disposal needs for the next 20 years.
Green Fleet Plan		Consolidation of strategies intended to reduce overall mobile fuel consumption in City-owned vehicles and equipment.
Green Building Policy: New City-owned Buildings and Major Additions		Outlines minimum performance standards for new City-owned buildings and major additions. Associated policy requirements include lifecycle costing, integrated design and green building expertise.
Green Building Policy for Existing City-owned and Leased Buildings		Directs the Public Service to benchmark energy and water use in all City-owned buildings above 33,000 square feet and to advance energy efficiency measures through the Capital budget annually.

PROVINCE OF MANITOBA		
The Efficiency Manitoba Act	Bill 19	Creates a standalone Crown corporation (Efficiency Manitoba) to promote demand-side management of energy use to meet energy savings targets and achieve reductions in GHG emission through initiatives to encourage energy conservation and efficiency.
The Prescribed Landfills Regulation	180/2009	Mandates owners and operators of landfills with 750,000 or more tonnes of waste to develop and implement plans for reducing landfill emissions.
The Water Protection Act	C.C.S.M. c. W65	To provide for the protection and stewardship of Manitoba's water resources and aquatic ecosystems. Includes watershed planning, protection of wetlands, and establishing water quality standards. Requires the City to upgrade the North End Sewage Treatment Plant to include biological nutrient removal to minimize nutrients discharged to local waterways. It also requires the City to reuse the wastewater biosolids, and to recover the nutrients from the biosolids to the maximum extent possible.
Nutrient Management Regulation		Under the Water Protection Act, developed to protect water quality by encouraging responsible nutrient planning, regulating the application of materials containing nutrients and restricting the development of certain types of facilities in environmentally sensitive areas.
The Green Building Regulation	38/2013	Requires large government and government-funded construction projects, plus large government leases of new buildings, to meet energy efficiency requirements.
The Climate and Green Plan Implementation Act	Bill 16	Introduces a new industrial gas emissions control and reporting act. It includes amendments to the Fuel Tax Act that detail the application of the carbon tax rate. As of March 22, 2018, has not received royal assent.
The Buildings and Mobile Homes Act	C.C.S.M. c. B93	Applies to the construction, erection, placement, alteration, repair, renovation, demolition, relocation, removal, occupancy or change in occupancy of any building or addition to a building. Relevant regulations include the Manitoba Building Code and the Manitoba Energy Code for Buildings.
Manitoba Building Code	127/06	Recent changes (effective 2016) intended to increase new home energy efficiency through new requirements related to insulation, drain-water heat-recovery systems, and others.
Manitoba Energy Code for Buildings (213/2013)	213/2013	Purpose is to reduce building energy use and applies to buildings generally larger than 600 square metres. Reduced energy use is achieved through insulation, improved lighting and heating efficiency, reduced electricity waste and various other green initiatives related to materials, water conservation and renewable power sources.
The Energy Savings Act	Bill 24	Establishes a fund to provide support for programs, services and projects that; a) make efficiency improvements accessible to Manitobans through on-meter financing mechanism; b) support research and development of renewable energy sources and innovative energy technologies; and c) create potential for social enterprises, community organizations and others to help people achieve these improvements.
The Energy Act	C.C.S.M. c. E112	Promotes and facilitates the orderly development of energy resources in the province. The Act ensures a reliable supply of energy to consumers at the least possible cost and is intended to promote the conservation and efficient use of energy.

GOVERNMENT OF CANADA		
Legislative and Regulatory Proposals Relating to the Greenhouse Gas Pollution Pricing Act and Explanatory Notes	Proposed	Purpose of the legislative proposal is to put a price on greenhouse gases that play a significant role in trapping heat in the atmosphere.
Canadian Environmental Protection Act	S.C. 1999, c.33	Intended to prevent pollution, protect the environment and human health, the Act addresses a wide range of topics including toxic substances, vehicle, and other emissions.
On-Road Vehicle and Engine Emission Regulations	SOR/2003-2	Sets standards for air pollutant emissions for new passenger cars, light-duty trucks, motorcycles, heavy-duty vehicles (e.g., tractor-trailers, buses, dump trucks) and their engines beginning with the 2004 model year.
Energy Efficiency Act	SOR/2016-311	Provides for the development and enforcement of regulations related to minimum energy performance levels for products that use energy, as well as the labelling of energy-using products on collection of appropriate data.
Clean Fuel Standard Regulations	Consultations launched December 2017	Intended to establish lifecycle carbon intensity requirements for fuels used for transportation, buildings and industry. Approach will incentivize innovation, development and use of low carbon fuels, energies and technology.
National Building Code	NRCC 56190	Serves as the primary building code in Canada to be adopted by provincial/territorial jurisdictions.

2.3 Community Environment and Energy Profile

There is no one-size-fits-all approach when it comes to communities and their energy use profile, and this holds true for Winnipeg. An overall approach taken in Vancouver will not necessarily work for this City, nor could one expect that the plan developed for Winnipeg could be applied to Edmonton or Toronto. The intent of this section is to provide a description of each of the key sectors in the City that can contribute to GHG emissions (buildings, transportation, waste and wastewater), illustrate why it matters to the overarching goals of the City's GHG reduction strategy, and describe the basis from which the GHG targets proposed in this Plan were developed (i.e., the 2011 Community GHG Inventory and Forecast Report).

General

Golder Associates Ltd. was contracted by the City of Winnipeg to develop a community greenhouse gas inventory and forecast for the City. ***The City of Winnipeg 2011 Community Greenhouse Gas Inventory and Forecast*** was received by Council in November 2016. The GHG Inventory includes consideration of all emissions related to energy consumed and waste produced in Winnipeg – institutional, commercial, industrial (ICI), transportation and residential waste sectors. It includes the City's corporate emissions though these amount to only about 1% of the total community emissions. The report outlines three emission forecast scenarios, a business as usual scenario, the *OurWinnipeg* scenario, and the Low Carbon Path Scenario. All three scenarios projected GHG emissions to the years 2020, 2031 and 2050.

The following provides a summary of the 2011 GHG inventory. The complete report can be found at **www.winnipeg.ca/sustainability**.

As described in the *Winnipeg's 2011 Community Greenhouse Gas Inventory and Forecast* report, and as shown in Table 2.2, overall community GHG emissions in 2011 totaled nearly 5.4 million tonnes of CO_2e.[8]

Table 2.2: Summary of Emissions

Activity	Annual Emission Rate (tonne CO_2e/year)				GHG Intensity (tonne CO_2e per capita)	Per cent of Total
	CO_2	CH_4	N_2O	Total GHGs		
Building Electricity	18,284	0	0	18,284	0.03	0.3%
Residential	5,545	0	0	5,545	-	0.10%
Commercial	9,993	0	0	9,993	-	0.20%
Industrial	2,746	0	0	2,746	-	0.05%
Building Natural Gas	1,790,048	1,073	9,906	1,801,027	2.60	33.5%
Residential	916,777	452	5,094	922,323	-	17.1%
Commercial	678,015	334	3,768	682,116	-	12.7%
Industrial	195,256	287	1,044	196,587	-	3.7%
Transit	43,044	57	395	43,495	0.06	0.8%
Vehicles - Residential	1,689,442	2,434	33,241	1,725,116	2.49	32.1%
Vehicles - Commercial	938,779	338	6,525	945,642	1.37	17.6%
Waste Disposal	—	798,801	—	798,801	1.15	14.9%
Water and Waste Water	4,922	33,620	8,117	46,659	0.07	0.9%
Total	**4,484,518**	**836,322**	**58,184**	**5,379,024**	**7.78**	**100%**

[8] CO_2e or 'carbon dioxide equivalents' is used as a measure of the quantity of CO_2 required to produce a similar warming effect as another greenhouse gas. For example, methane (CH_4) has a global warming potential (GWP) of 25 relative to CO_2, meaning that it is 25 times stronger from a global warming perspective. This underscores the value in having a landfill gas capture system as methane is a by-product of the decomposition of organic matter.

Building natural gas and vehicles had the highest emissions, accounting for 83.1% of total emissions when combined. Waste disposal follows behind as the third largest source of GHGs with 14.9% of total community emissions. The remaining categories comprise less than a percentage each as shown graphically in Figure 2.1.

Figure 2.1: Summary of Total Community GHG Emissions in 2011

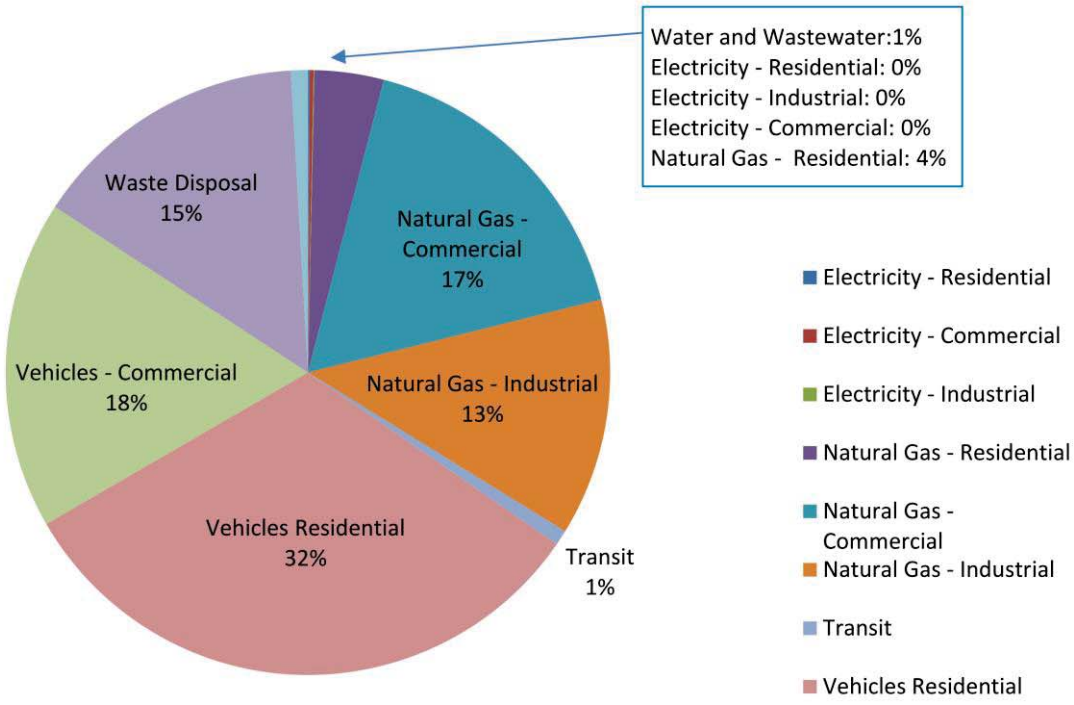


Figure 2.2 and 2.3 provide a comparison to other large municipalities. Per capita emissions ranged from 4.8 to 13.5 tonnes CO_2e (per person per year), with Winnipeg emissions approximating 7.8 tonnes. As in the case of Vancouver and North Vancouver, Winnipeg's lower levels of emissions largely reflect the use of hydroelectricity as a major source of electricity in buildings. In other sectors there are greater challenges to reducing GHGs, as illustrated by Winnipeg's above average per capita GHG emissions as a result of waste disposal.

Figure 2.2: Comparison of GHG Emissions per Capita by City in 2011

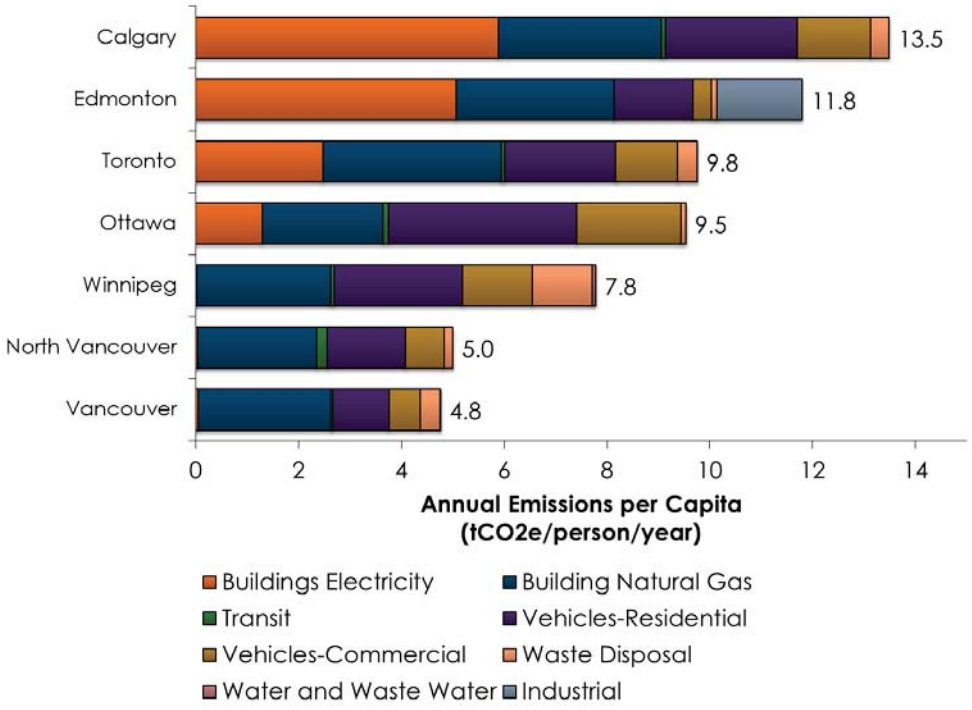
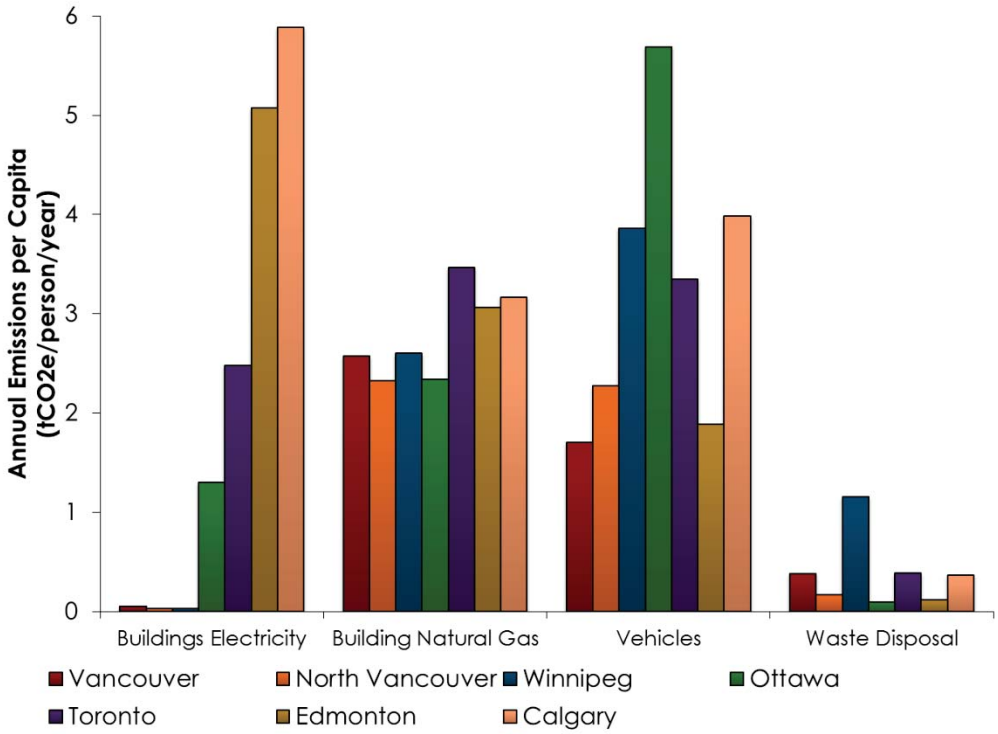


Figure 2.3: Comparison of GHG Emissions per Capita by Key Sectors in 2011



Buildings

With a significant proportion of Winnipeg's residential building stock dedicated to single family housing, the City has one of the lowest densities in Canada outside of Alberta greenfield development (rather than infill development, for example) and represents a majority of overall community growth, though recently Winnipeg's core is experiencing a revitalization with increased focus on infill development and promotion of residential growth. It is notable that the average building age in Winnipeg is older than in similar prairie cities. The comparatively old average building age in the City means they are not built to the modern energy use specifications and Building Energy Code.

Why it Matters

In Canada, approximately 45% of GHG emissions are generated from the combustion of fossil fuels to make energy, including heat and electricity. As such, houses, shops, schools and other private and public buildings are a significant contributor.[9] Therefore, it is not surprising that this represents an important opportunity for the City of Winnipeg. Existing buildings represent over 80 per cent of Canada's building stock which will still be standing in 2030. These buildings present a greater emissions reduction opportunity than any new construction activity between now and 2030.[10]

Climate plays a major factor in building energy use. The City experiences hot summers and cold winters, which leads to a high air conditioning load in the summer and high heating load in the winter. For the community as a whole, buildings are the second largest source of GHGs (35% of total GHGs) and 99% of these arise from the consumption of natural gas. Winnipeg also experiences significant solar exposure as the weather is often sunny. Thus, the addition of solar water heaters may be an increasingly viable method for reducing energy consumption. Another building-scale renewable opportunity to reduce the building carbon footprint is the use of geothermal to displace natural gas use.

The comparatively old average building age in the City is notable as these buildings are not built to the modern energy use specifications. Based on Canadian EnerGuide assessments, on average the older the home, the higher the energy consumption. Individual homeowners, landlords and tenants alike are well-positioned to reduce their GHG emissions through a wide range of measures that range from simple and inexpensive (e.g., turning down the thermostat) to large-scale furnace and other home upgrades, which in some cases may be eligible for financial support (e.g., Manitoba Hydro). As such, it is important that this be a key area of focus for the Climate Action plan going forward.

Transportation

As a regional transportation hub, Winnipeg maintains a transportation system that includes a large network of surface streets, rail service and an international airport. The road transportation system consists of a large ring road – the Perimeter Highway that connects to the Trans-Canada highway as well as other provincial highways. Within the city, several major arterial roads provide high-volume vehicle roadways that service the city (e.g., Portage Ave., Pembina Hwy., Henderson Hwy., Kenaston Blvd., etc.). Adjacent to the airport and within city limits, CentrePort Canada offers 20,000 acres for greenfield investment opportunities for business operations including manufacturing, warehousing and distribution.

Public Transit is operated by Winnipeg Transit and is based on bus service. In recent years Winnipeg Transit has worked to implement additional measures to optimize its operation, including transit priority signals, diamond lanes (reserved for transit use), and BRT (bus rapid transit). Winnipeg Transit has a fleet of approximately 580

[9] http://prairieclimatecentre.ca/2018/03/where-do-canadas-greenhouse-gas-emissions-come-from/
[10] Canada Green Building Council

buses on 95 routes within the city. The first segment of BRT of the Southwest Transitway opened in 2012. Currently, 13 routes make use of the corridor. The second phase of this line will extend service to the University of Manitoba. Winnipeg Transit also operates Handi-Transit, which provides door-to-door transportation for people that are not able to use the regular fixed route system.

The City has made investments in recent years in pedestrian and bicycle infrastructure and support measures, which have resulted in increased walking and cycling activity on many corridors. Guided by *Our Winnipeg*, the Transportation Master Plan, and the Pedestrian and Cycling Strategies, the City is working to achieve its goals of expanding travel options and creating a sustainable transportation system to meet the needs of all residents.

Why It Matters

The transportation sector is the second ranked contributor to GHG emissions in Canada, with personal vehicles and commercial vehicles largely responsible.[11] Commercial and residential vehicles are the largest source of transportation emissions in Winnipeg at 49.7% of overall community GHG emissions.

Personal vehicle travel is the predominant mode of transportation in Winnipeg (81% of total weekday traffic). There are a number of reasons for this: a) Winnipeg is one of the lowest density cities in Canada outside of Alberta; b) residents generally have to travel relatively far to get to their destinations (e.g., for school, work, recreation); and c) this is exacerbated by cold winter temperatures. People are less likely to use alternate forms of transportation when it is cold outside - bicyclists may be discouraged by icy road conditions and potential transit riders may be less likely to wait outside in the cold at a bus stop.

Efforts to reduce transportation-related GHGs will need to consider how individual City residents currently get around the City and how to increase mobility options and encourage sustainable transportation modes. By choosing to carpool, use transit, or engage in active transportation modes, Winnipeg residents can contribute to a substantial reduction in GHG emissions. The City can do its part by continuing to seek improvements in its transit system and developing and maintaining high quality active transportation infrastructure.

Waste, Water, and Wastewater

Community waste generation rates in Winnipeg are similar to other Canadian municipalities. Waste consists of a mix of inorganic and organic waste. The City provides city-wide collection service with traditional waste collection and a recycling program for non-organics. Organics recycling is identified as a part of the City of Winnipeg *Comprehensive Integrated Waste Management Strategy*, but is currently limited to a yard waste collection and composting program. There are small community-run compost sites throughout the City as well as subscription-based residential and commercial programs available to the public. Residential and some commercial/institutional waste is currently sent to and disposed at the Brady Road Resource Management Facility. Waste from the private sector is collected by private companies and then hauled to landfills for disposal. There are no private landfills active within City limits although there are two Class 1 waste landfills in proximity to Winnipeg. The landfill at the Brady Road Resource Management Facility is owned and operated by the City and is the only active landfill within City limits. While waste generation is similar to other Canadian cities, diversion rates have been comparatively poor in Winnipeg. This has been improving with the adoption of the *Comprehensive Integrated Waste Management Strategy*.

Recycling and composting can also be done at the facility for items such as yard waste, scrap metal, bicycles, batteries, and used tires. The facility operates a landfill gas collection system. Additional private landfills are

[11] http://prairieclimatecentre.ca/2018/03/where-do-canadas-greenhouse-gas-emissions-come-from/

operated in relatively close proximity to the City of Winnipeg. These facilities receive commercial, industrial, construction and demolition waste from Winnipeg and the surrounding region.

Winnipeg's potable water comes from Shoal Lake. Before being delivered to end users, this water goes through a treatment process at the Deacon Reservoir. Wastewater is collected primarily in sewer systems. Most of this is treated in the North End Sewage Treatment Plant, with the remainder treated at the West End Sewage Treatment Plant and South End Sewage Treatment Plant.

GHG emissions from wastewater treatment primarily result from the production of biogas from sludge digestion and wastewater decomposition. The City currently operates three wastewater treatment plants: The North End Sewage Treatment Plant; the South End Sewage Treatment Plant, and West End Sewage Treatment Plant.

Why It Matters

Landfills, water and wastewater treatment plants in general produce a significant volume of GHG emissions. In Canada, approximately 3.5% of emissions come from these facilities.

Efforts related to reducing GHG emissions from water and wastewater systems can consider capital investments supporting improved energy performance of water and wastewater infrastructure, such as the installation of high-performing pumps, blowers, and other equipment upgrades, renewable energy, and the use of more passive treatment processes.

Opportunities for the City to reduce GHG emissions related to waste include the ongoing operation of the Brady Road Resource Management Facility landfill gas project, ongoing efforts to increase diversion rates for solid waste, as well as the diversion of biosolids. The City has a Comprehensive Integrated Waste Management Strategy in place to guide actions going forward.

Energy Use

The City obtains electricity and natural gas from the provincial energy utility - Manitoba Hydro. The Province generates electricity almost exclusively from hydroelectric, with small amounts of thermal and wind power. Future expansion of Manitoba Hydro's hydroelectric assets suggests that this low carbon electricity will continue to represent the majority of electricity provided to the City of Winnipeg. The City does import some fossil fuel-based energy, which has a significant impact on electricity emissions in years of drought.

Why It Matters

While the points above (buildings, transportation) speak to the potential challenges related to reducing GHG emissions, energy (particularly hydro-electric) represents a unique opportunity on the part of the City to achieve its climate goals. As of April 2017, the average price for electricity for residential customers in Winnipeg was 8.71 cents per kWh. Only one major municipality in Canada – Montreal - has a lower price for electricity. For comparison purposes, residents of Toronto were paying about 16.32 cents per kWh while Edmonton residents were paying 10.34 cents per kHh[12]. Manitoba generates more than 98% of its electricity from renewable sources including hydroelectricity and wind[13]. Further, Winnipeg emits very low levels of greenhouse gas emissions associated with electricity consumption. This low-cost energy represents an opportunity to explore strategies around the incorporation of electric vehicles (and other strategies) into the City's Climate Action Plan.

[12] http://www.hydroquebec.com/data/documents-donnees/pdf/comparison-electricity-prices.pdf
[13] https://www.gov.mb.ca/jec/energy/initiatives/hydro.html

3 A WINNIPEG CLIMATE ACTION PLAN

Winnipeg's Climate Action Plan aims to reflect the unique qualities and challenges of the City. It aims to leverage the fact that Winnipeggers live and work in a winter city. While this does create some challenges – for example, increasing the cost of heating relative to warmer climate - it also validates the need for City residents to use energy more wisely than those living in warmer climates. In doing so, citizens and businesses can reduce energy costs and support a healthier environment.

The City has worked closely with the public, community leaders, stakeholders, and advisors to create the foundation of this Action Plan. The City has strived to engage and respect the perspectives of all residents throughout this planning effort. Throughout the entire planning process, the collective community has clearly articulated that action must be taken in the short, medium and long-term.

The development of the Action Plan has been comprised of two key phases:

PHASE 1 **Community Inventory and Forecast** (2011) – To understand Winnipeg's energy and greenhouse gas emissions inventory, and modelling of three emissions reductions scenarios.

PHASE 2 **Creating the Plan** – *Winnipeg's Climate Action Plan* includes a climate vision, refreshed targets, actions, and an implementation strategy that identifies opportunities for the City to reduce emissions through policy, regulation and programming. The Plan was developed through extensive community engagement with local stakeholders and residents, and with the support from Public Service employees across City departments.

The Phase 1 2011 Community Inventory and Forecast report represented a key first step in the City's climate mitigation strategy. The approach and findings of this Report are described in Section 2.2 and helped to guide the next phase of the City's work.

Phase 2 was initiated in 2017. Urban Systems Ltd. assisted the City of Winnipeg to develop a 'made in Winnipeg' Climate Action Plan that will serve as the overall guide for planning and implementing climate actions in Winnipeg. The development of Winnipeg's Climate Action Plan evolved over time with multiple check-in points with community stakeholders and the general public. The Plan was guided by a Climate Change Working Group made up of senior Public Service members and a Climate Action Advisory Group made up of about 30 community stakeholders.

The four-step process incorporated diverse engagement techniques (including storytelling, community speakers, online engagement, and focused workbook discussions) to encourage a conversation about the vision for climate action in Winnipeg, along with specific directions to enable climate action in the community. These aspirations and directions formed a foundation for the process to identify and develop possibilities to be considered in the Plan. Best practices research and technical analysis were incorporated to the process throughout.

Phase 2 - Plan Development Process

The sequencing of the phases and the process for the development of ***Winnipeg's Climate Action Plan*** is described below.

- *Step 1:* Prepare (Summer 2017). In this initial phase, the project team gathered information about existing policies and programs in Winnipeg and Manitoba, and best practices in climate action planning (See **Appendix B**). The team prepared a Communications and Engagement Strategy that outlined detailed plans and tactics for engaging the public and key stakeholder groups for participation in the Climate Action Advisory Committee.

- *Step 2:* Imagine - Vision and Targets (Fall 2017). The project team hosted two public events and workshops with the Advisory Committee and other groups to understand perspectives about Winnipeg's climate vision, and to generate ideas about climate actions related to buildings, transportation systems, and waste in the community. The input and key directions informed development of a vision and greenhouse gas emission targets.
- *Step 3:* Exploring Possibilities (Winter 2018). Based on the analysis of the information gathered, as well as the articulated vision and targets from previous phases of work, a series of draft recommendations and actions were developed related to reducing greenhouse gas emissions in Winnipeg. A multi criteria analysis was conducted and used as a conversation starter to evaluate potential actions in each sector.
- *Step 4:* Finalizing the Action Plan and its Implementation Strategy (Winter-Spring 2018). With public and stakeholder input gathered throughout the process, the last phase involved fine tuning the draft actions as well as preparing the final document for Council approval. The final document presents the recommended strategic opportunities, key directions, and actions, and includes an implementation plan.

Sections 4 through 8 of this Plan are the result of the work undertaken during this process.

The following section provides additional detail about the public engagement process undertaken to help develop the Plan.

Community Consultation Program Summary

Engagement for Winnipeg's Climate Action Plan consisted of the following key components.

- Public – through two open house-style workshops and one live, online event.
- Key Stakeholders – through the Climate Action Advisory Group.
- Senior Public Service members – through the cross-departmental Climate Change Working Group.
- Other mechanisms – project email, telephone calls and meetings with other stakeholders.

Each is summarized in greater detail below. Additional details can be found in **Appendix C**. Also, a summary and analysis of 'what we heard' during each of the public engagement events is provided in **Appendix C**.

Public Engagement Event	Description
Public Kick-off Event *November 10th, 2017*	Residents were invited to a public engagement session to help define a vision for climate action in Winnipeg. Details on the event were circulated widely using community newspapers and web-based and social media advertising to canvas a wide range of interests. Three community storytellers provided insight on their personal climate visions for the city while also reflecting on potential climate targets and actions. Event participants then shared their own visions and ideas on climate mitigation during smaller table discussions.
Online Event *November 28th, 2017*	An online discussion was hosted via Facebook to provide context on the City's Climate Action Plan and brainstorm actions for reducing GHG emissions.
Public Priorities Workshop *February 27th, 2018*	This workshop aimed to obtain feedback on actions and tools for four key topics: buildings, transportation, land use, and waste/water. Attendees participated in facilitated discussion groups with workbook questions on each of the topics. As with the other two events, the intent of the workshop was to gather perspectives from a wide range of community and stakeholder interests.

Climate Action Advisory Group

This group comprised of individuals from a number of organizations with important perspectives regarding climate change mitigation in the City, including the University of Winnipeg, Manitoba Hydro, Bike Winnipeg, and the United Way Winnipeg, amongst others. Three workshops were held with this group:

Workshop	Description
Workshop 1 *November 10th, 2017*	The group brainstormed actions for reducing GHG emissions, discussed the City's climate vision and targets, and developed a list of sector-specific actions and resources.
Workshop 2 *January 25th, 2018*	This workshop involved a presentation to the group on potential sector-specific (buildings, transportation, land use, and waste/water) actions and tools to include in the Climate Action Plan. Attendees were asked to prepare for the third meeting by participating in a prototype exercise that aimed to identify roles of the community and City in regard to climate action.
Workshop 3 *February 27th, 2018*	Participants were asked to report back on the feedback obtained during their prototyping exercise. These comments translated into insights and recommendations on community, City, and stakeholder roles, as well as identified potential challenges and opportunities for each.

Other Mechanisms

Additional information and perspectives were provided throughout the project's lifespan from individual residents (via telephone and email), industry/sector representatives (through targeted in-person meetings) and other stakeholders. Meetings were held with the Active Transportation Advisory Committee, Canada Green Building Council, Building Industry members and others.

4 CLIMATE ACTION VISION

4.1 Vision

A vision for the Climate Action Plan describes the broad aspirations for the future of climate change action in Winnipeg. The vision offers perspective about the *end states* – what is important for City residents when they consider their community and their environment in 2050. The vision can be viewed as a guide to inform *how* Winnipeg approaches climate change actions, and using this lens can inspire decision making today, tomorrow and into the future.

The aspirations for climate change action in Winnipeg are grounded in traditional worldviews of Indigenous Peoples and in harmony with their distinctive spiritual relationship with the land and natural resources: our actions today need to have sustainable implications for the energy, water, natural resources, and people seven generations into the future. This perspective is reflected in an excerpt from Winnipeg's Indigenous Accord Vision:

"The City of Winnipeg is a place where everyone has a voice, a place where people and the environment come first, where everyone has fair access…"

The Accord Vision was developed by children gathered in harmony to visualize the future of Winnipeg. It, along with the guiding principles contained in *OurWinnipeg* and supporting Direction Strategies, are a starting place for Winnipeg's Climate Action Plan vision outlined below:

- Winnipeg is recognized as a leading Winter City in greenhouse gas emissions reductions and climate action.
- By approaching climate mitigation through the lens of 'all things being connected', Winnipeg realizes holistic co-benefits from climate change action that increases jobs and economic activity, improves health outcomes of citizens, and increases social equity and affordability for Winnipeggers.
- The built environment in Winnipeg is highly efficient and maximizes opportunities for energy efficiency and renewable energy sources.
- Winnipeg facilitates compact development and healthy neighbourhoods that are connected through a network of active and transit-oriented mobility options. This means that the City strategically integrates climate action within both land use and transportation decision-making.
- Indigenous relationships and excellence (stewardship) enable a low carbon future in the true spirit of reconciliation.

5 EMISSION REDUCTION TARGETS

Establishing a meaningful target is an important element of a successful Climate Action Plan. An emissions target offers a means to communicate how the community prioritizes the issue of greenhouse gas emissions. Ultimately the emissions reduction target sets the future direction and guides the community's actions to reduce emissions.

In 1998, the City of Winnipeg Council signed on to the Federation of Canadian Municipalities Partners for Climate Protection program. At that time a target of 6 percent emissions reduction was set. However, a corresponding action plan and timeline for achieving the target was never detailed.

The science of climate change mitigation – both what is possible, and what is necessary to avoid catastrophic impacts associated with climate change— has evolved significantly in the past 20 years. As such, renewed greenhouse gas emission reduction targets have been established. The greenhouse gas emission targets for Winnipeg's Climate Action Plan are as follows:

20 percent reduction in greenhouse gas emissions by 2030 relative to 2011 levels.

80 percent reduction in greenhouse gas emissions by 2050 relative to 2011 levels.

The following offers an overview of why Winnipeg is committed to working towards this target:

- A 20 per cent reduction reflects what is possible when the City implements policies outlined in its Low Carbon Path Scenario as presented in the 2011 Community GHG Inventory and Forecast Report.[14]
- An 80 per cent reduction by 2050 aligns with science-based approaches to limiting global warming to 2 degrees Celsius, a level determined to be required to limit catastrophic impacts from climate change. The City is eager to contribute its share to this global challenge.
- There is a strong desire from public and community stakeholders for Winnipeg to be a leader and take bold climate action.
- There is a strong desire to inspire action today and to advance new opportunities for innovation for future generations.
- It has been assumed that additional shifts in technology will occur. These shifts cannot be accurately predicted or modelled. It is proposed (as per the Plan) that the City continues to evaluate its progress on the targets and adjust as necessary.

[14] Part of the work in the 2011 Community GHG Inventory and Forecast Report included a forecast for energy and emission reductions that are likely to occur in Winnipeg. The Low Carbon Path Scenario was one of three illustrative scenarios considered, and represents a highly ambitious but achievable emissions reduction target for the City of Winnipeg.

5.1 Emission Reduction Sector Targets

To support the progression and achievement of the greenhouse gas emissions reduction targets, a series of sector targets have been established to guide key actions and investments. Additionally, a series of sector-specific performance indicators have been developed to help evaluate the City's progression towards achieving the 2030 target (20 per cent reduction in greenhouse gas emissions relative to 2011 levels), and ultimately the 2050 target. As the City progresses with the implementation of the Climate Action Plan, these performance indicators will be regularly monitored and reported on to support a continuous improvement model. Furthermore, as the Plan's implementation progresses, the sector targets and associated performance indicators will be reviewed to adjust, as required, the program and actions taken to meet the City's greenhouse gas reduction targets.

The sector-based targets and performance indicators are summarized as follows:

Transportation

2030: 17% reduction relative to total City emissions in 2011

2030 Transportation Performance Indicators

To achieve a 17% reduction in GHG emissions relative to the 2011 baseline by 2030, the City seeks to facilitate a mode share shift that increases the use of public transit and active transportation networks, and a reduced dependence on the personal automobile. More specifically, it is envisioned that by 2030 the City will see a mode share breakdown of:

- 50% Auto-Driver
- 21% Auto-Passenger
- 15% Public Transit
- 14% Walking/Cycling

Additionally, the City aims to:

- Establish an Active Transportation Network of 800 kilometers
- Electric vehicle use reaches 8% of the total fleet of vehicles throughout Winnipeg

Buildings



2030 reduction: 8% increase in emissions relative to total City emissions in 2011[15]

2030 Building Performance Indicators

To achieve only an 8% increase in GHG emissions relative to the 2011 baseline by 2030 (or a 145,000 tonne reduction relative to business as usual), the City seeks to support the following goals:

- Residential building natural gas consumption does not go above 604,010,541 m3 (limited to an increase of approximately 124 percent relative to the 2011 sector baseline). Limiting consumption to this increase will require homes to incorporate energy efficiency upgrades and/or renewables.
- Commercial building natural gas consumption does not go above 448,167,147 m3 (limited to an increase of approximately 124 percent relative to the 2011 sector baseline. Limiting consumption to this increase will require commercial buildings to incorporate energy efficiency upgrades and/or renewables.
- 8% of all residential homes have incorporated renewables and/or made significant energy efficiency upgrades to work towards the achievement of having a net-zero energy and emissions footprint. Renewable measures are likely to include the implementation of (biomass) district energy systems, geo-exchange, and solar technologies or significantly reduce the need for natural gas for space and water heating.
- 12% of all commercial and industrial buildings have included renewables and/or made significant energy efficiency upgrades that significantly reduce the need for natural gas and work towards being a net-zero building. Such measures are likely to include the implementation of (biomass) district energy systems, geo-exchange, and solar technologies or significantly reduce the need for natural gas for space and water heating.

2030 Land Use Performance Indicators

The contribution of land use to GHG emission reductions is primarily realized through other sectors (i.e., transportation and buildings). For example, as the City becomes more spread out with growth occurring primarily at the periphery, the number and length of personal vehicle travel increases, and other mobility options become less viable or more costly to implement. The type of residential development influences building emissions – in general single detached houses are more energy intensive than multi-unit residential buildings. Therefore, supporting diverse housing forms, density, complete community and transit-oriented development are land use strategies that support the reduction of GHG emissions from transportation and buildings. Evaluating the success of land use related actions therefore necessitates a consideration of indicators in these other sectors. To work towards the City's overall emission reduction goals, the City seeks to support residential infill and greater densities in strategic locations that provide convenient access to transit. More specifically, it is envisioned that by 2031:

- 50% of all new residential construction takes place in strategic infill locations.

[15] The increase in emissions is primarily due to the overall growth of Winnipeg as a city. Relative to business as usual, this plan seeks to still achieve a total emissions reduction which is estimated 145,000 tonnes of GHG.

Waste



2030 reduction: 11% reduction relative to total City emissions in 2011

2030 Waste Performance Indicators

To support an 11% reduction in City emissions relative to a 2011 baseline, it is envisioned that the following waste reduction outcomes are achieved:

- 75% residential waste diversion and an 80% diversion rate for commercial/industrial and construction and demolition wastes[16]
- 70% of all biosolids are diverted for commercial use
- The Brady Resource Recovery Centre's landfill gas collection system will be expanded over time and its methane collection efficiency will improve to 75%

[16] Waste diversion rates exceed those identified in the Comprehensive Integrated Waste Management Strategy

6 STRATEGIC OPPORTUNITIES AND ACTIONS

Winnipeg's Climate Action Plan includes a series of seven Strategic Opportunities along with supporting Key Directions and Actions that support the vision and targets, as described below. Together they provide a comprehensive package of solutions to enable climate action and help the City on a path to its desired future.

- **Strategic Opportunities** provide the seven overarching themes of the Plan. For each Strategic Opportunity, a **Current Initiatives and Alignment** section outlines important connections to existing City plans, policies and programs.
- **Key Directions** shape and categorize the more detailed action areas. For each Key Direction, Primary Responsibility is designated to a City department.
- **Actions** are more specific statements about what the City will do related to climate change mitigation. The implementation timeline for each action is identified as either short term (2018-2022), medium term (2022-2026), or long term (2027 onwards). The reader is cautioned that the timelines provide a general guideline to implementation and will be revisited as required. Some Actions are intended to be ongoing, even where they are identified as short or medium term.

Climate Action and Community Benefits

The strategic opportunities, key directions, and actions outlined in the Plan to achieve emissions reductions have corresponding economic, social and health co-benefits. Climate Action co-benefits are important because evidence suggests that citizens are more likely to take action on climate change, or more likely to support governments that take action on climate change if the wider co-benefits of those actions are emphasized.[17] As well, the City of Winnipeg delivers a host of programs and services aimed at supporting innovation, delivering economic benefits and enhancing the quality of life of citizens which can lead to significant greenhouse gas emissions reductions. Therefore, it is critical for the City of Winnipeg to align its climate actions and goals as much as possible with provincial and municipal infrastructure management, land use planning, public health, and social equity strategies to maximize these benefits.

Climate action co-benefits[18] related to strengthening the economy, improving public health, and increasing social equity are highlighted with the ***Current Actions and Alignment*** sections and summarized below:

- Green building construction and retrofitting represent important economic opportunities for the City. Investment in energy efficiency equipment, technology and expertise will necessitate increased local capacity leading to new and expanded businesses and jobs. This in turn will create additional need for training and education.
- The physical design and layout of a community plays a critical role in achieving sustainable transportation. Convenient access to public transit encourages equity by enhancing mobility among people with barriers to transportation, including older adults, people with low incomes, and those living with disabilities. Investments in active transportation infrastructure, and enhanced maintenance over winter months ensures people powered transportation is more convenient, accessible and increases road safety. Using transit, walking, or cycling to get around contributes to increased physical health and mental health benefits through increased social connectedness and interaction.

[17] C40 Cities (2016) Co-benefits of urban climate action: A framework for cities. http://www.c40.org/researches/c40-lse-cobenefits
[18] Based on feedback from the Winnipeg Regional Health Authority Population and Public Health Program

- Infill development in areas close to transit infrastructure and other amenities can reduce long term municipal infrastructure costs, and positively contribute to the number of people effectively served by transit.
- Infill and compact development can increase proximity to work, school and services such as healthy food, employment, and recreation opportunities, resulting in benefits to the local economy and reduced dependency on vehicles. Nearby amenities equalize opportunities for individuals, particularly among people disadvantaged by income or other barriers. Increased residential density may help to promote active school transport amongst school-aged youth and increase the potential for older adults to age in place.
- Preservation and expansion of urban forests and wetlands support mitigating air pollution and reducing the urban heat island effect. These spaces also contribute to enhanced well-being and stress reduction.
- Urban agriculture supports the production, consumption and supply of local food systems and plant-based diets that reinforce healthy and active lifestyle practices.

Corporate Leadership

Introduction

Climate action that sets Winnipeg on a path towards reaching its greenhouse gas mitigation target – 80 percent by 2050 – requires integrated and concerted actions by the entire community. City leadership in climate action is essential to creating momentum for broad uptake and action in the community and the region. We cannot expect citizens, business or other stakeholders to take action without demonstrating our commitment to action. During public engagement for this Plan, we consistently heard from the public that the City of Winnipeg has been slow in making responsible climate change decisions. Despite the prevailing 'slow to act' sentiment, participants in the engagement responded positively with current City climate undertakings and expressed desire to see the City take bolder actions.

Collective climate action requires involvement and support from other levels of government. As the largest city in Manitoba and a central hub between western and eastern parts of the country, Winnipeg has opportunity to leverage its leadership into advocacy for impactful investments, programming, and policy levers that will generate positive climate outcomes.

Current Initiatives and Alignment

As noted previously, Council passed a resolution on November 25, 1998, signing on to the Federation of Canadian Municipalities (FCM) Partners for Climate Protection Program (PCP). The City acknowledges the need to be a leader on GHG emission reduction and has been engaged in a wide range of activities in order to meet that expectation. To that end, relevant City of Winnipeg corporate actions include the following:

Development and Implementation of the Corporate Climate Action Plan

The City's corporate Climate Change Action Plan was approved by Council in 2009. Sample actions that are underway include the following:

- For civic facilities, seek out and implement opportunities for energy efficiency and renewable energy upgrades and adopt elements of green building standards;
- Implement a Green Fleet Plan to facilitate reductions in GHG emissions;
- Implement a methane gas capture project at the Brady Road Resource Management Facility;
- Other actions identified included initiatives to reduce water consumption, switch traffic signals to LED systems, and increased reporting efforts.

Examples of City Participation in Key GHG Emission Reduction Activities

Building on the Corporate Climate Action Plan, a number of other sector-specific undertakings have been put in place to support the City's efforts to reduce its own GHG emissions. The examples provided represent a mix of City-led initiatives and others that have been developed through partnerships with industry, academia and other organizations. A summary is presented below, with additional details (and more examples) in **Appendix D**.

- *Green Building Policy: New City-owned Buildings and Major Additions* (adopted 2011) – outlines minimum performance standards for new City-owned buildings and major additions. Recent projects include the Dakota Community Centre Fieldhouse (LEED® Gold Certification) and the Public Works East Yard complex (LEED® Gold Certification).
- *Green Fleet Plan* (adopted 2010) – represents a consolidation of strategies intended to reduce overall mobile fuel consumption in City-owned vehicles and equipment. Components of the plan include 'right-sizing of the fleet', evaluation and use of alternative fuels, and a host of others.
- *Electric Bus Demonstration* (final report 2016) – Project consisted of four New Flyer Xcelsior® battery-electric transit buses in daily service. The project task force confirmed a number of benefits from electric buses and suggested a step-wise approach to transit electrification: Step 1 deployment of 12 to 20 buses; Step 2 deployment of 120 to 200 buses; and Step 3 Full system-wide deployment[19].
- *Electric Vehicle Pilot* (underway) – A trial of two electric vehicles and two level three charging stations, the project was initiated to determine operational feasibility of electric vehicles within the City's fleet. It is expected that City departments using the vehicles will realize savings from a decrease in fuel consumption as well as reduced maintenance costs.
- *Go Manitoba* (since 2017)) – Established as a province-wide initiative, *Go Manitoba* is a user-friendly, convenient platform connects employees from various workplaces (including the City) to encourage them to organize carpools, search for public transit options and match up bike and walk mentors.
- *Composting* (ongoing since 2015) – City employees in the Planning, Property and Development department have been composting at their workplace since May 2015, resulting in the diversion of over 9,400kg of organic waste from landfill. In addition, in 2016 the City introduced a compost and waste reduction pilot program at the Grace Café on the first floor of the City Hall Administration building. Initial planning has been completed, and funding secured for expansion of the composting and waste reduction strategy to include all City offices located in the Council and Susan A. Thompson buildings at City Hall beginning in 2018.
- *Climate Adaptation Training* - Recognizing the increase in severity and frequency of summer storms, the Office of Emergency Management partnered with Environment and Climate Change Canada to hold two Thunderstorm Safety and Spotter training sessions. Training included recognizing different types of thunderstorms, understanding the hazards associated with them, and best practices for safety and awareness.

The City acknowledges the critical importance of being a leader on climate action and will continue to do so through the newly established Office of Sustainability and other appropriate City departments.

[19] http://winnipegtransit.com/assets/2162/Transit_Electrification_Taskforce_2016.FINAL.PDF

Key Directions and Actions

1.1 Cultivate A Corporate Culture That Values Climate Action (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Ongoing and consistent implementation of actions contained in the corporate Climate Change Action Plan (2009)	X		
Celebrate staff taking initiative in corporate and community climate action	X		
Incorporate a Climate Action Plan alignment section into all Council reports	X		
Integrate Sustainability and Climate Action into Procurement Standards which can demonstrate increasing impact from year to year	X		
Encourage department ownership of climate mitigation measurement, ongoing reporting and implementation through a cross-departmental working group on Climate Change	X		
Investigate staff (dis)incentive programs to reduce the amount of unnecessary vehicle kilometers traveled by City employees for work commutes (as per Green Fleet Plan)		X	

1.2 Understand and Integrate Business and Economic Implications of Climate Action into Decision Making Processes (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Establish a dedicated Climate Action Reserve Fund to support implementation of this Action Plan	X		
Create an annual capital program for departmental sustainability and climate initiatives. Applications should be accepted by all departments	X		
Incorporate climate action priorities into the annual budget process to ensure the City has resources to implement priority projects	X		
Establish City policy that outlines an approach to incorporating the lifecycle costs of GHG emissions into its analysis and decision for long term investments		X	

1.3 Implement Low Carbon and Energy Efficient City Facilities and Buildings (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Implement energy benchmarking for all City-owned Buildings (using Portfolio Manager) to identify opportunities for improved energy performance	X		
Conduct an energy audit of all City facilities to seek opportunities to implement equipment and programs that will maximize energy performance	X		
Regularly scheduled recommissioning and retrofits in existing facilities, guided by data from benchmarking		X	
Create a comprehensive energy management program for existing facilities		X	
Evaluate opportunities to invest in renewable energy technologies at City buildings		X	
Partner to establish a green building centre of excellence to promote education and awareness			X
Install publicly accessible energy consumption displays at City facilities			X

1.4 Encourage Sustainable Transportation Options (Primary Responsibility: Winnipeg Fleet Management Agency)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Ongoing implementation of the Green Fleet Plan (2010) to reduce vehicle emissions	X		
Conduct a comprehensive business case evaluation of the City electric vehicle pilot project and look to accelerate the electrification of the City's fleet	X		

1.5 Reduce Employee Vehicle Kilometers Travelled (VKT) and associated GHGs (Primary Responsibility: Winnipeg Parking Authority)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		

1.6 Reduce Consumption and Increase Waste Diversion (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Develop and adopt a Zero Waste Framework in all City facilities following the Corporate Waste Strategy		X	
Building on direction from the Corporate Waste Strategy (2015), examine procurement policies to look for opportunities to reduce consumption (e.g. paper products)	X		
Expand the organics diversion programs for City facilities and operations		X	

1.7 Increase Opportunities to Respond to Food Needs Throughout Winnipeg and Increase Access to Local and Sustainable Food (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Support local food procurement at City of Winnipeg facilities	X		
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	X		
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	X		

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)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Incorporate climate risks and mitigation targets and opportunities related to land use, transportation and development into *OurWinnipeg* review that is currently underway. This will necessitate a review of all four Direction Strategies (*A Sustainable Winnipeg, Sustainable Water and Waste, Sustainable Transportation and Complete Communities*)	X		
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	X		
Incorporate climate risks and mitigation targets and opportunities into the anticipated Transportation Master Plan update and Transit Master Plan	X		
Incorporate climate risks and mitigation targets and opportunities into the Comprehensive Integrated Waste Management Strategy	X		

1.9 Work with Indigenous Communities, the Province, and the Federal Government to Advance Climate Action (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Collaborate with senior levels of government for increasing investment in programs supporting climate action	X		
Leverage funding from the province and federal governments to advance climate action	X		
Engage Winnipeg's Indigenous population on issues around climate change	X		

Empower Community Leaders and Collaborate with Stakeholders

Introduction

Community initiatives related to climate change in Winnipeg are numerous and growing. Similarly, local expertise and capacity is expanding. Winnipeg cannot achieve its community climate change emissions targets with action taken solely within City Hall. As such, significant progress can be made by leveraging new and existing relationships with community leaders and stakeholders.

Successful climate action strategies amplify and align the knowledge and efforts of local business, community organizations, and citizens to generate additional momentum for climate action. A key opportunity to accelerate climate action is to further enhance levels of collaboration between the City and community leaders, industry, academia and other stakeholders.

Empowering citizens to take action is essential; especially those that are seeking to contribute in civic matters. Meaningful action to reduce our GHG emissions necessitates raising public awareness about the impacts of climate change and the opportunities for individual and collective actions that matter. The City will work closely with community members to prioritize actions that create opportunities for more effective community action.

Current Initiatives and Alignment

The City of Winnipeg acknowledges the importance of working jointly with the broad range of municipal committees, volunteer groups and other community members. Examples of ongoing efforts in the community include the following:

- Building Urban Industries for Local Development (BUILD) – This is a local social enterprise non-profit contractor and training provider developed to support people who face barriers to employment. They have been providing insulation services (thereby reducing carbon emissions and providing savings to customers on utility bills) through Manitoba Hydro's Affordable Energy Program since 2006.
- Manitoba Hydro Power Smart – Initiatives include energy and water conservation and efficiency activities, including financial incentives.
- Peg City Car Co-op – This car-share program has over 800 members who are meeting their transportation needs by supporting travel primarily by transit, cycling and walking, and only making use of a vehicle when it is needed.
- Compost Winnipeg – This social enterprise offers composting services to homes, offices, multi-family residential buildings and others. The program supports the local economy and helps to reduce waste sent to landfill by about 40%. This in turn reduces GHG emissions that would otherwise have been produced if the waste was sent to the landfill.
- The Forks - Target Zero – The Forks goal is to produce zero garbage, zero water waste and zero carbon emissions on-site. Examples of their efforts to achieve this goal include the installation of a closed vertical loop geothermal heat pump station, utilizing used oil from deep fryers at the restaurants to power equipment (e.g., tractors), and the on-site in-vessel composting system.

» The W.R.E.N.C.H. (Winnipeg Repair, Education and Cycling Hub) – Is a non-profit charity that makes bikes accessible for the public by providing programming, education and resources; supporting school and community bike shops and promoting bicycling within the City and elsewhere. Since 2014, The WRENCH has been the official Stewards of the bicycle section at the Brady Road Resource Management Facility. On a regular basis, volunteers sort through the discarded bikes and ensure reusable parts are pulled out for their bike build and repair program.

Key Directions and Actions

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)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Establish a series of Community Action Teams that will provide technical advice and strategic guidance to help implement 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	X		
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	X		
Identify opportunities to have ongoing discussions and collaborations with industry and indigenous environmental stewardship groups to identify opportunities and to co-create solutions		X	

2.2 Develop Public Education and Awareness Campaigns related to Sustainable Transportation (Primary Responsibility: Public Works Department)

Develop and implement a comprehensive climate change education program for citizens, and where possible collaborate with community organizations or agencies to amplify reach.

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Partner with the Winnipeg Regional Health Authority (and other community organizations as appropriate) to promote the linkages between climate action and support the reduction in long term-health care costs		X	
With every new transit, cycling or pedestrian infrastructure investment, launch an education and awareness campaign targeting City 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)	X		

2.3 Create Conditions to Enable Community Climate Action (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Collaborate with community partners, translate city-wide greenhouse gas emissions reduction targets to the neighbourhood context to help engage community members supporting and leading climate actions in ways that benefit their neighbourhoods		X	
Establish a neighbourhood climate change challenge program to generate momentum for local action		X	
Collaborate with the Winnipeg Chamber of Commerce, MEIA and other stakeholders, explore the opportunity to work with the small and medium sized business community to reduce greenhouse gas emissions. This may be facilitated using the Climate Smart Business, Green Economy Hub, or a similar model		X	
Explore use of the Land Dedication Fund to provide small grants that support neighbourhood scale climate actions in parks and recreation facilities. This could be done through the addition of climate protection as a key consideration for funding and the mandatory inclusion of climate benefits in the description of all proposed projects		X	
Acknowledge the critical role of municipalities in mitigating climate change and collaborating with other levels of government, conduct a review of municipal governance statutes with a goal of enabling and empowering the City of Winnipeg to act on climate change		X	
Encourage and partner to advance innovative pilot and demonstration projects		X	

Advancing Sustainable Transportation – Increase Mobility Options and Shift to Zero Emission Vehicles

Introduction

Emissions from transportation account for half of Winnipeg's total greenhouse gas emissions. Increasing access to mobility options and fuel switching are key directions for reducing emissions from transportation. Sustainable transportation options with lower or no emissions (walking, cycling, public transit, carshare, and carpooling) enables fewer single occupancy vehicle trips, and ultimately lowers emissions.

Key directions identified in this action plan aim to directly shift City residents out of single occupancy vehicles or indirectly enable diverse mobility choices through the development of higher density, and more complete communities (See Strategic Opportunity 4).

Fuel switching also offers a significant opportunity to reduce emissions from privately owned vehicles, commercial fleets and our transit systems. A key opportunity to advance fuel switching in Winnipeg is through electric vehicles for both private vehicles and public transit.

Current Initiatives and Alignment

Moving people, goods and services in a way that is socially, environmentally and economically sustainable is a core direction embedded in the Sustainable Transportation (2010), which forms a policy framework for the City's Transportation Master Plan (2011). Both policy documents emphasize the need to increase travel options: providing greater access and options for walking, cycling, and transit that will lead to improved health, increased personal mobility, more livable, affordable, and socially active communities and will reduce impacts on the environment and our climate. Despite strong policy supporting sustainable transportation infrastructure and



TRANSPORTATION

2011 Inventory - Low Carbon Pathway

The energy used to fuel our modes of transportation (residential and commercial, vehicles and transit) makes up approximately **50.5%** our Winnipeg's total carbon footprint.

The City has a 2030 transportation target of 17% reduction relative to total city emissions in 2011. This is equivalent to a reduction of 935,000 tonnes of GHG emissions from all vehicles and transit.[1]

To visualize what this looks like, this reduction target of 9% will **remove 187,000 cars and light trucks off the road.**[2]

BEST PRACTICES

Green Action Centre, Manitoba

The Workplace Commuter Options program offers consulting, education, and events programing that supports workplaces and individuals to use sustainable modes of travel to commute. For example, their June 2017 Commuter Challenge event encouraged 1673 workplaces (19,980 individuals) to travel 1,621,646kms sustainably, avoiding 260,809 kg of CO_2 emissions! Their resources and support help individuals make the shift from commuting by vehicle, to ridesharing, transit, walking or cycling.

City of Vancouver, BC

The city has set a target to make the majority (50%) of trips by foot, bicycle, and public transit. This required a reduction of 20% in the average distance driven per resident, and progress to date has exceeded their target and has been reduced by 32%. Success has been accredited to the introduction of their public bike share system, ongoing efforts to build a safer walking and cycling city, and improvements in supporting transit, and carsharing initiatives.

City of Calgary, AB

In 2015, the City of Calgary introduces a five-street downtown projected bike lane network all at once covering 6.5 kms. The increase in cycling was immediate, and over the course of the pilot, 1.2 million cycle trips were recorded on the network. Council has made the network permanent and 2017 counts show 17,468 cyclists traveling in the downtown on an average weekday!

City of Oslo, Norway

The City of Oslo has a number of initiatives to support the transition to electric vehicles. By 2014, their Electric Vehicle Program had supported the installation of 900 publicly accessible charging stations, and offers financial incentives covering 60% of the costs to install a charging station for private residences, offices, shopping centres, and apartment buildings.

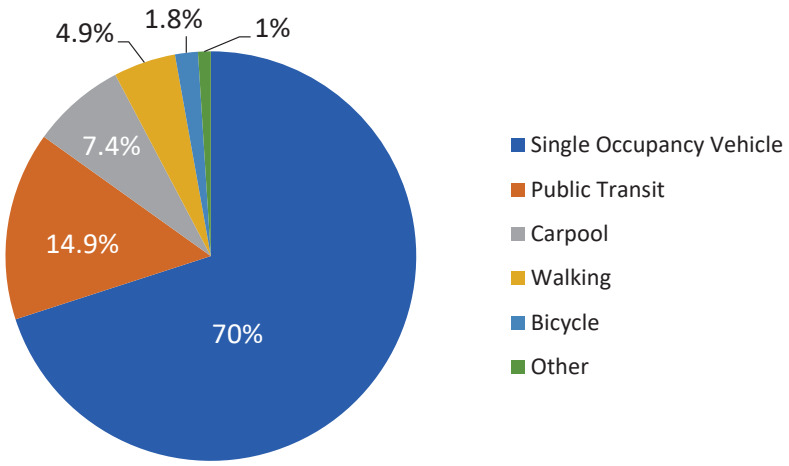
[1] Winnipeg's 2011 Community Greenhouse Gas Inventory and Forecast (2016).
[2] RETScreen Expert emissions factors.

behaviours, single occupancy vehicles continue to be the primary mode of choice. Indeed, almost three quarters of Winnipeggers use motor vehicles rather than transit, walking, or cycling as the primary mode of travel to work (see Figure 6.1).

Over half of Winnipeggers (53 per cent) have convenient access to public transit (defined as having a bus stop within 500 metres, and at least one bus departing every 15 minutes). The majority of individuals with convenient access to public transit lived in close proximity to the downtown or along the Southwest Transitway Rapid Transit Corridor. Downtown, Point Douglas and River Heights neighbourhoods have the most convenient access to public transit, and also the highest percentage of individuals using public transit as their primary mode of transportation [20].

The City has completed Phase 1 of the Southwest Rapid Transit Corridor, and Phase 2 is now underway. The City has started a planning and engagement process for the Eastern Rapid Transit Corridor. The Pedestrian and Cycling Strategies (2015) supports initiatives that will increase the uptake of active forms of transportation throughout the City.

Figure 6.1: Modes of Transportation Used for Commuting to Work in Winnipeg[2]



Selected initiatives currently underway are expected to inform and contribute to GHG remission reduction strategies, including the following:

- *Transit Electrification Bus Demonstration* - This project has been a collaboration involving the City of Winnipeg, the Province of Manitoba, Manitoba Hydro, New Flyer Industries, Mitsubishi Heavy Industries, Red River College, and Sustainable Development Technology Canada. Results from the report of the Transit Electrification Taskforce[21] includes a synopsis of near-term and long-term opportunities, peak versus high use scenarios, a description of GHG-related impacts and business case considerations.
- *Go Manitoba* – this initiative is accessed and promoted by several organizations across the province and represents a valuable opportunity for community members to change their commuting behavior through ride-sharing and active transportation opportunities.

[20] Statistics Canada. 2017. Winnipeg, CY [Census subdivision], Manitoba and Canada [Country] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed March 29, 2018)
[21] http://winnipegtransit.com/assets/2162/Transit_Electrification_Taskforce_2016.FINAL.PDF

Key Directions and Actions

3.1 Increase Use and Efficiency of Public Transit Systems (Primary Responsibility: Winnipeg Transit)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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*	X		
Deliver continuous improvement in transit service with a focus on customer service, reliability, and route connectivity, and public education	X		
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	X		
Explore a partnership between carshares, other transportation providers and Winnipeg Transit to help incentivize both modes of transportation		X	
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	X		
Consider financial and pricing measures to maintain and encourage ridership. These measures may include a revised fare structure or increased costs for parking in key destinations supported by transit routes. These strategies should draw on evidence and data		X	
Explore opportunities to partner with the School Divisions to increase transit ridership amongst high school students		X	

3.2 Increase the Density of Urban Development Along Key Transit Corridors (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Align transit route planning with growth and development trends to ensure neighbourhoods undergoing transition have convenient and frequent transit services	X		
Consider adopting parking requirement relaxations adjacent to transit-oriented development			X
Prioritize capital investments into infrastructure and transit equipment over roads designed for single occupancy vehicles			X

3.3 Design New Suburban Communities to Enable Enhanced Transit Services and Access to Transit Corridors (Primary Responsibility: Winnipeg Transit)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Require sidewalks in new residential developments to ensure safe walking routes to transit stops	X		
Assess new development according to the proximity of homes to a transit stop. Development should aim to situate homes within a minimum of 1000 metres of a transit stop		X	
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	X		
Identify park and ride facility needs based on expected neighbourhood density and transit connectivity, and ensure that neighbourhood planning integrates connections for individuals walking, cycling, or driving (see Section 4.2)		X	

3.4 Increase Active Transportation Rates (Primary Responsibility: Public Works Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Accelerate the implementation of the Pedestrian and Cycling Strategies (e.g. through increased funding and staffing)	X		
Prioritize capital investments in active transportation to establish connected and integrated corridors for walking and cycling, which includes a downtown bike grid 'hub' with 'spokes' of protected bike lanes radiating outward along with supporting infrastructure that includes bike racks, facilities, and lighting		X	
Allocate further resources and staff capacity to the active transportation division of the Public Works Department in line with recommendations from the Pedestrian and Cycling Strategies		X	
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	X		
Continue to fund and develop W.R.E.N.C.H, an organization focusing on core area education and outreach on bike repair	X		
Continue to partner and promote initiatives that encourage active transportation (e.g., Bike to School Month, Commuter Challenge)	X		
Enhance operation and maintenance of pedestrian and cycling facilities during winter months, though re-prioritization of snow-clearing activities, assessing equipment needs, and engaging the active transportation community	X		
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	X		
Use development approval processes to encourage private active transportation facilities and infrastructure such as secure bike parking and shower facilities		X	

3.5 Reduce Traffic Congestion (Primary Responsibility: Public Works Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Adopt intelligent railway crossing measurement and compensation mechanisms that reduce congestion due to railway crossings	X		
Adopt intelligent and automated signal timing systems that adapt signal timings to weather and traffic conditions, alleviating congestion and reducing transit times	X		
Improve clarity and precision of Transit services through enhanced data analytics and insights into Transit service consumption and delivery	X		

3.6 Increase the Use of Electric Vehicles (Primary Responsibility: Public Works Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Develop an Electric Vehicle Strategy for Winnipeg	X		
Explore co-locating electric vehicle charging locations alongside transit bus charging stations at major terminals		X	
Amend the zoning by-laws to require a minimum number of electric vehicle charging stations for parking garages within new commercial or multi-unit residential buildings		X	
Consider amending policies and by-laws to require new homes to be constructed with compatibility for future retrofit installation of electric vehicle charging facilities		X	
Partner with the Province of Manitoba and private industry to contribute to the planning and development of a Manitoba Electric Vehicle Fast Charging Network		X	
Explore low emission freight delivery opportunities within the City of Winnipeg, including first and last mile business services, electric freight vehicles, and improved route use planning and infrastructure			X
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	X		

3.7 Utilize Zero Emission Buses (Primary Responsibility: Winnipeg Transit)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Building on the momentum of the Electric Bus Pilot Project, plan for and initiate the deployment of electric buses at a larger scale	X		
Shift Winnipeg Transit to a zero-emission fleet		X	
Prepare a transition plan outlining approaches to network integration, facility needs (charging facilities and storage), maintenance requirements and expected training considerations	X		
Leverage funds from the Government of Manitoba or federal government to support the planning, capital investment, and operating costs associated with the shift	X		

Facilitate Compact, Complete Development and Increase Density

Introduction

Winnipeg's built environment and public realm influence how citizens and visitors choose to get around the City. Research shows that the number and length of personal vehicle travel increases as a city becomes more spread out and as housing, jobs, daily needs and recreation or community destinations become more dispersed. As well, the type of residential buildings can affect energy consumption. Single detached houses are generally more energy intensive than multi-unit residential buildings, so development of diverse housing options also supports climate mitigation goals. A city's land use policies and plans have significant indirect influence on a city's energy use and GHG emissions.

Land use strategies that support reduced energy used for transportation (and climate mitigation) balance the growth of new neighbourhoods at the edge of the city with revitalizing existing neighbourhoods through infilling, densification, and development of transit corridors and centres. Instead of separating commercial and residential development (as typical in large shopping areas, big box development or strip malls), commercial buildings are integrated within or close to residential neighbourhoods,

The City of Winnipeg has a significant opportunity to pursue land use strategies that align with climate mitigation through the implementation of compact, complete communities, transit-oriented development, increased infill and higher density neighbourhoods.

Complete communities are places that both offer and support a variety of lifestyle choices, providing opportunities for people of all ages and abilities to live, work, shop, learn and play in close proximity to one another[22].



LAND USE

2011 Inventory - Low Carbon Pathway

Research shows that energy used for transportation increases as a city becomes more spread out and as housing, jobs, daily needs and recreation or community destinations become more dispersed.

BEST PRACTICES

City of Portland, USA, Healthy Connected Neighborhood Strategy

The strategy facilitates "20-minute Neighborhoods" which are walkable places with concentrations of neighborhood businesses, community services, housing, and public gathering places that provide residents with options to live a healthy, active lifestyle.

City of Vancouver, BC - Density Bonus Zoning

Density bonusing is used as a zoning tool that permits developers to build more floor space than normally allowed, in exchange for amenities and affordable housing needed by the community.

Detroit, USA - Michigan Urban Farming Initiative

Positions agriculture as the centerpiece of a mixed-use urban development in vacant lots. The 2-acre garden plot produces enough fresh produce to feed 2,000 households.

[22] (City of Winnipeg Complete Communities Direction Strategy, 2011).

In complete communities there are:

- Options for accessing services and amenities to meet most daily necessities
- A variety of mobility options
- Diverse housing options that accommodate a range of incomes and household types for all stages of life
- Options for local employment, even while recognizing that not everyone will live near their place of employment

Done well, densification creates vibrant spaces, and can increase viability of frequent transit and other diverse mobility options, as well as proximity to work, school, and recreational opportunities.

These actions have co-benefits related to public health, including increased outdoor physical activity and access to healthy foods. As well, amenities within close proximity to where people live and work equalize opportunities, especially amongst people disadvantaged by income or other barriers. The contribution of land use to overall GHG emission reductions is inextricably linked to decision making in the transportation and built environment sectors and tied closely to the successful implementation of Strategic Opportunities # 1, 3 and 5.

Current Initiatives and Alignment

Historically, planning and development in Winnipeg relied on an abundance of available land for business and housing. Few constraints prevented growth on the edges of the City. Through *OurWinnipeg* (2011), the City adopted a series of policy frameworks related to *Sustainable Transportation*, and *Sustainable Water and Waste*. These documents provide policy guidance that encourages infrastructure that protects public health and safety, ensures the purity and reliability of Winnipeg's water supply, maintains or enhances the quality of our built and natural environments and embraces diverse mobility options. In addition, the *Complete Communities* Direction Strategy is helping to guide growth into existing built areas with recreation, grocery, and other public amenities in close proximity to housing and employment.

The following highlights key by-laws and Council approved policies[23] that directly influence how Winnipeg develops and grows:

- *OurWinnipeg* Plan By-law (67/2010)
  - Impact Fee By-law (127/2016)
  - Winnipeg Zoning By-law (200/2006)
  - Development Procedures (By-law 160/2011)
  - Complete Communities Direction Strategy (Consolidated) (By-law 68/2010)
- Council Approved Policy:
  - *A Sustainable Winnipeg* (2011)
  - *Sustainable Transportation* (2010)
  - Transportation Master Plan (2011)
  - Transit Oriented Development Handbook (2012)
  - Pedestrian and Cycling Strategies (2015)
  - Ecologically Significant Natural Lands Strategy (2007)

[23] Note that site specific planning policy, regulation and guidelines influences opportunities for climate mitigation action, including but not limited to Local Area Plans and urban design and placemaking, heritage conservation, and infrastructure asset management.

The City of Winnipeg has begun a process to review and update *OurWinnipeg*. It provides a vision and policies that influence the delivery of City services, how we get around the City, and decisions about how the City grows. As a guide to everything the City does, *OurWinnipeg* represents a significant opportunity to shape land use policies and planning that supports climate action in the City. It is critical that key directions and actions listed for climate action below align with *OurWinnipeg*.

Several other important initiatives are underway that can support the Plan:

- Residential Infill Strategy (2018)
- Recreation Strategy and Parks Strategy (2019)

Key Directions and Actions

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)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Complete the *OurWinnipeg* Residential Growth Study which will identify priority areas for residential growth within Winnipeg	X		
Develop complementary tools to support the implementation of the Residential Infill Strategy, including: density bonusing. The goal of this process would be to explore regulatory mechanisms that show how the City can support higher density in exchange for amenities such as the provision of affordable units or open space		X	
Explore opportunities for the City of Winnipeg to take a more direct role in advancing mixed use development that may include developing City-owned lands, assembling land for resale, partnering on development, or using City funds to leverage private investment			X
Explore measures to encourage the re-purposing of surface parking lots in existing built areas			X

4.2 Ensure New Areas of Growth are Designed According to the Principles of Complete Communities (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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)	X		
Update the Development Agreement Parameters to address sustainability objectives		X	
Explore requirements for new development to submit an energy conservation feasibility study and a community energy feasibility study. The City should consider developing an associated planning framework that clarifies a minimum threshold for developments			X

4.3 Pursue Transit-Oriented Development (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Explore local obstacles and opportunities to encourage and enable transit-oriented development in Winnipeg, within the current Review of *OurWinnipeg* and the Complete Communities Direction Strategy. This may include, among other opportunities, facilitating a more streamlined development approval process		X	
In new transit-oriented development, ensure there are active transportation linkages and connections to facilitate a connected diverse and sustainable transportation network	X		
Gain further insight into the opportunities and constraints to transit-oriented development through the current Eastern Corridor Study	X		

4.4 Support Redevelopment of Former Commercial and Industrial Lands into Active Use (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Explore opportunities for the City of Winnipeg to take a more direct role in advancing public redevelopment of brownfield sites. This may include developing City-owned lands, assembling land for resale, partnering on development, or using City funds to leverage private investment			X

Low Carbon and Energy Efficient Buildings

Introduction

As a winter city, Winnipeggers know that we spend a lot of time indoors. We also know that as a winter city it takes a lot of energy to heat and power our homes and places of work; resulting in higher average energy bills than other cities in Canada.

Consider that buildings throughout the City represent a big part of Winnipeg's overall greenhouse gas emissions profile. The energy used to operate our buildings makes up approximately 34.6% of Winnipeg's total greenhouse gas emissions.

The good news is that there are many simple things we can all do within our homes, offices and other buildings to cost-effectively reduce energy use, emissions and costs.

Looking forward, the City of Winnipeg seeks to work with homeowners, landlords and commercial building owners, and builders to advance made-in-Winnipeg programs, policies and tools to accelerate the overall energy and emissions performance of our buildings.

This means striving to find better ways to understand the energy use and emissions from our existing building stock and working closely with key stakeholders to continually accelerate the adoption of new energy-efficient green buildings. It means empowering all community members to better understand the easy and cost-effective actions we can all take to contribute to our emission reduction goals. In addition, it means providing builders and tradespeople with tools and resources to support these retrofits and designs (for example, ongoing communications, regular training and knowledge exchange opportunities, and a clear regulatory framework).

As a City, we will work to find innovative solutions to continually advance positive change. We will also seek to strategically leverage existing and proposed federal and provincial initiatives to accelerate retrofits and renovations that reduce energy demand and achieve greenhouse gas emission reductions.



BUILDINGS

2011 Inventory - Low Carbon Pathway

The energy (electricity and natural gas) used to operate our buildings (residential, commercial and institutional) makes up approximately **34.6%** our Winnipeg's total carbon footprint.

To visualize what this would look like, this reduction target will require **145,000 people to reduce their energy use by 20%.**[2]

The City has a 2030 buildings target of an 8% reduction relative to total city emissions in 2011. This represents an emission reduction of 145,000 tonnes of GHG emissions relative to business as usual.[1]

BEST PRACTICES

City of Edmonton, AB, Energy Efficiency and Conservation in Your Home

Provides resource guides, information resources, toolkits to help homeowners preform basic home audits to provide basic home energy audits

Government of BC, BC Energy Step Code – Regulation

Designed to help both government and industry chart a course to a future in which all new construction across the province is "net-zero energy ready" by 2032

City of Calgary, AB, Sustainable Building Policy

Reduces development fees for all private building projects that pursue LEED or Built Green Certification

The City of Edmonton, AB, District Energy in Blatchford

Mixed-use community that is receiving heating and cooling needs from a district energy sharing system

City of Nelson, BC, EcoSave Energy Retrofits Program

Offers low interest loan program to complete energy efficiency retrofits

[1] Winnipeg's 2011 Community Greenhouse Gas Inventory and Forecast (2016).
[2] RETScreen Expert emissions factors.

In doing so, our homes, office space and other buildings will be less costly to operate, be healthier and overall, more environmentally sustainable.

Current Initiatives and Alignment

Regarding privately owned buildings, all new construction must be built to the National Building Code. Additional resources are available to building owners, tenants and builders including:

- Manitoba Hydro Power Smart Program;
- Manitoba Hydro New Buildings Program;
- Manitoba Chapter - Canada Green Building Council (CaGBC);
- Sustainable Buildings Manitoba;
- Energy Star Portfolio Manager;
- Manitoba Green Building Program and Policy;
- City of Winnipeg Green Building Policies; and
- Building Owners and Managers Association (BOMA) Best Manitoba

In addition to these resources, the Government of Manitoba supports other initiatives such as the Manitoba Green Building and Energy Efficiency Program. The Government of Manitoba has also established Efficiency Manitoba with the goals of meeting energy savings targets, achieving reductions in greenhouse gas emissions, and reducing consumption of electricity and natural gas. Details of how this Crown Corporation will advance are still being defined, however it is anticipated that there will be meaningful partnership opportunities between this entity and the City of Winnipeg.

Key Directions and Actions

5.1 Increase Energy Performance of Existing Buildings (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
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	X		
Referencing the business case analysis, develop a comprehensive building energy performance improvement program in Partnership with Manitoba Hydro or Efficiency Manitoba that will provide resources to facilitate energy audits for homes and commercial buildings		X	
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	X		

Launch a residential energy efficiency program that provides information and resources to support homeowners to use energy more wisely and link residents to key programs and resources to accelerate action		X	
Work to develop a residential energy efficiency incentive program (i.e. grants, financing) that strategically targets emission reduction opportunities within homes. This program will seek to complement provincial and federal initiatives, as well as those supported by Manitoba Hydro and/or Efficiency Manitoba		X	
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	X		
Work with key stakeholder groups to accelerate the implementation of an energy performance labelling program for existing and new buildings	X		
Build strategic partnerships with the Winnipeg Metropolitan Region municipalities to help determine areas where facilities and services can be rationalized to help reduce building GHG emissions and direct new construction		X	

5.2 Improve Energy Performance of New Buildings (Primary Responsibility: Planning, Property and Development Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Work in partnership with the Government of Manitoba, and other stakeholders to continually advance building code standards and other policy tools to increase energy efficiency in residential and commercial buildings		X	
Complete a review of existing practices used to enforce existing Energy Codes and determine if there are opportunities for continuous improvement and innovation	X		
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	X		
Incorporate energy performance requirements in the City of Winnipeg's land use and development approval processes where possible		X	
Provide resources and incentives such as a property tax relief or permit cost reduction program to building owners that demonstrate high energy efficiency			X
Develop a carbon-neutral new buildings strategy with industry and key stakeholders to identify and advance new policy tools to accelerate the development of highly-energy efficient buildings that have a zero-carbon footprint		X	

5.3 Increase Access to Educational Materials (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Work with 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	X		
Work with 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	X		
Connect building owners and tenants to green builders and retrofit teams to support energy efficiency improvements in buildings		X	

5.4 Build Climate Equity (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Build partnerships with key stakeholders such as the local neighbourhood associations, BUILD (Building Urban Industries for Local Development) and CAHRD (Centre for Aboriginal Human Resource Development) to build local capacity and equity		X	

Waste Reduction and Diversion

Introduction

Whether it be the packaging of our food, the disposal of an outdated cellphone or computer, or the wastes generated from building a new home, it seems as if garbage is produced every time we do something. However, significantly reducing the production of garbage is possible and it starts by thinking about waste as a valuable resource.

Advancing waste reduction and diversion initiatives is a critical part of reducing the City of Winnipeg's overall greenhouse gas profile, while addressing a number of other environmental challenges. From a greenhouse gas emission reduction perspective, focusing on strategies that maximize the diversion of organic wastes from the landfill is critical. More specifically, once organic waste (i.e. food scraps, yard wastes, biosolids and cardboard) is buried in a landfill in an oxygen depleted environment, the organic materials generate methane; a potent greenhouse gas.

Furthermore, the transportation of products produces emissions, as does the transportation of the waste to pick up and haul garbage to landfills. Sending recyclable materials to the landfill also results in the wasting of valuable resources. However, reusing these resources reduces the raw input of natural resources which reduces impacts to our natural environment. As resources become scarcer and the environment becomes more sensitive, it is critical to transform our perception of garbage to one that sees us collectively conserving the resources we already have.

Current Initiatives & Alignment

Sustainable waste management is typically considered "low-hanging fruit" for municipalities and is often the gateway to transitioning to a low carbon society.

In 2013, the Brady Road Resource Management Facility installed a landfill gas system to collect methane gas and flare it off. The action of flaring emits CO_2 as

WASTE

2011 Inventory - Low Carbon Pathway

Emissions generated as a result of waste disposal make up about **15%** of Winnipeg's total GHG emissions. Greenhouse gases in this sector largely come from decomposing waste in the landfill which generates methane gas.

In 2013, the Province of Manitoba and the City of Winnipeg put a capping system on the Brady Road Resource Management Facility. This facility traps the methane gas which would be released and then flares or burns off this gas as CO^2 which is a far less potent greenhouse gas.

The City has a 2030 waste target of 11% reduction relative to total city emissions in 2011. This is equivalent to a reduction of **610,000 tonnes of GHG emissions** from the waste disposal and wastewater treatment services.[1]

To visualize what this would look like, this reduction target of 11% reduction will be equivalent to **244,000 tonnes of waste being recycled.**[2]

BEST PRACTICES

City of Edmonton, AB

Since 1992, the City of Edmonton's Clover Bar Landfill (now owned by Capital Power) has been mined to produce electricity from landfill gas. Enough methane gas is captured each year to satisfy the electricity demands of approximately 4,600 homes.

City of Portland, OR

Following Portland's 2015 Climate Action Plan, the Portland's Resourceful PDX campaign is supporting the City to reduce solid waste per person by 33%, and to recover 90% of all waste generated.

Waterloo Region, ON

Waterloo has been a long-time Canadian leader in waste diversion. With the introduction of green bin and organics diversion programs. From the success of Waterloo's programs many other local communities across Canada had implemented similar initiatives.

Vancouver, BC

One major action in pursuit of this goal has been the implementation of the Green Demolition By-Law in 2014. Since its adoption, a minimum of 75% of the demolition waste from older homes will be recycled, and 90% of waste generated from character homes. The program is enforced through a reporting mechanism tracking waste disposal, and using refundable deposits of approximately $15,000.

1 Winnipeg's 2011 Community Greenhouse Gas Inventory and Forecast (2016).
2 RETScreen Expert emissions factors.

opposed to methane, the latter of which is 25 times more potent than carbon dioxide[24]. A retrofit in 2017 expanded the capacity of the system, which should double the amount of landfill gas collected. The retrofits are designed to accommodate future upgrades to capture gas and repurpose it as an energy source used to heat homes.

In 2013, the City added a nine-hectare composting pad to convert the leaf and yard waste from the curbside collection program into nutrient rich compost. Further, the City began a biosolids composting trial in 2015 to compost up to 20% of the biosolids produced in Winnipeg. Biosolids are a nutrient-rich by-product of sewage treatment. The compost produced every week will be used as final cover on the landfill to enhance vegetation growth.

The City runs three 4R Depots where residents can drop off unwanted, recyclable materials. Recycled materials are re-used, recycled, composted, or re-sold, with the ultimate benefit being landfill diversion.

In comparison to other cities, there is room to grow in Winnipeg as currently many of the sustainable waste efforts are championed externally. For example:

- Winnipeg Compost, a mid-scale composting program, is driven by the Green Action Centre [25]. Offices, multi-family residential buildings, residential on-site composters, small restaurants and cafes are encouraged to participate in the program for a monthly payment [26].
- A Winnipeg-based Aboriginal Social Enterprise, Mother Earth Recycling, handles electronic waste and discarded mattresses. A key objective of this initiative is to build capacity amongst local Indigenous community members.

Key Directions and Actions

6.1 Reduce Consumption and Increase Waste Diversion from Residential, Commercial and Industry (Primary Responsibility: Water and Waste Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Implement direction from the Comprehensive Integrated Waste Management Strategy to advance the priority of organic material diversion from landfill	X		
Continue to invest in educational and awareness programming to help maximize waste diversion (i.e. recycling and organics)	X		
Investigate the feasibility of a green construction and demolition program to maximize the diversion of construction waste		X	
Advance strategies and pilot projects to divert and utilize biomass resources for energy production		X	
Explore feasibility of rationalizing waste management facilities and services with regional partners to better manage waste, reduce emissions and increase diversion		X	

[24] Working Group I Contribution to the Fourth Assessment. Intergovernmental Panel on Climate Change. 2012.
[25] Local social enterprise
[26] https://www.compostwinnipeg.ca/residential

6.2 Advance Winnipeg's Circular Economy to Support Waste Reduction (Primary Responsibility: Water and Waste Department) [27]

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Work with local stakeholders and regional partners to support "circular economy" initiatives that minimize waste production. This includes community efforts such as supporting the establishment of lending libraries and local sharing hubs throughout the City, as well as regional efforts related to nutrient reuse and recovery from wastewater treatment processes		X	
Work with key federal, provincial and regional stakeholders to advance Extended Producer Responsibility Program(s) to target plastics, mattresses, cardboard and other designated materials		X	

6.3 Utilize Biosolids in Agriculture and Landscaping Industries (Primary Responsibility: Water and Waste Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Continue to work with key stakeholders to accelerate the implementation of the Biosolids Master Plan and maximize the diversion of biosolids from landfill	X		
Strategically support (incentives, pilot projects, etc.) the application of biosolids in agriculture and the use of biosolids in soil manufacturing	X		

6.4 Support Integrated Resource Recovery Opportunities (Primary Responsibility: Water and Waste Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Complete a feasibility analysis to determine the value of investing in integrated resource recovery projects (including capture reuse of methane and combined heat and power) within the City's wastewater facilities and landfills	X		
Work to ensure alignment between the Biosolids Master Plan and future investments into key wastewater infrastructure, in particular the North End Sewage Treatment Plant to maximize emission reduction opportunities		X	
Investigate the feasibility of implementing a combined heat and power unit as part of the planned upgrades to the North End Sewage Treatment Plant		X	

[27] A circular economy is a way of thinking about consistently reusing resources so there is no detrimental effect to the environment. A circular economy is different from what is typical today where people extract, make, use and dispose of resources.

Community Climate Resiliency

Introduction

"Resilience is about surviving and thriving, regardless of the challenge."[1]

Climate resilience is the integration of climate mitigation and climate adaptation. Communities are facing serious threats related to public health, infrastructure costs, economic viability, and social equity associated with climate change. This holds true in the context of Winnipeg. Proactive climate adaptation planning can help avoid significant financial costs associated with climate related disasters.

During the public consultation for this Plan, numerous participants identified the important connection between climate adaptation and mitigation. They expressed a clear desire for the City to take a holistic approach to climate action that considers multiple co-benefits between adaptation and mitigation. Further, participants suggested that the City needs to ensure it is prepared for rapid climate changes and their potential cascading implications for public health, economy, and social equity. In response, these concerns are now reflected in the Plan.

The Key Directions and Actions outlined below provide a series of suggestions that reflect public and stakeholder input. Opportunities for additional climate resilience actions need to be considered in a formal Climate Adaptation and Resiliency Strategy. Climate resilience can be augmented through focused attention on the City's urban forestry canopy, activities that help mitigate air pollution and the urban heat island effect, while also contributing to enhanced well-being and stress reduction.

Current Initiatives and Alignment

The City of Winnipeg has a variety of initiatives underway that are helping to increasing the resiliency of the community. They include:

- Using Silva Cells and Strata Cells to assist with stormwater management along in right-of-ways and simultaneously foster large tree growth for the benefits canopy cover provide to urban areas.
- Piloting and continued monitoring of permeable pavement and natural drainage through the 'Green Alleys Pilot Project' (initiated in 2014-2015)
- Offering utility bill credits for low flow toilet replacements and Residential Toilet Replacement Credit Program Bylaw. Reducing water consumption allows the City to maintain our abundant water supply and defer capital water infrastructure upgrades. The City of Winnipeg is currently undertaking a Water Efficiency Study to evaluate future water conservation opportunities that align with *OurWinnipeg*.
- Operating and renting out community garden plots at various locations
- In addition to environmental education and outreach, the Living Prairie Museum promotes biodiversity through controlled burns that mimic the role that wild fires had in the past, to reduce encroachment of woody species and control invasive species

[1] http://www.100resilientcities.org/

- Partnering with the International Institute for Sustainable Development to use harvested plant matter and cattails as a heat source for the Living Prairie Museum
- Maintaining the Assiniboine Forest which contributes to biodiversity and the urban canopy in the City. It is one of the largest urban nature parks of its kind in Canada and provides examples of aspen-oak vegetation, which is the home of a great variety of birds, animals, and even some rare plants
- Methane gas produced as a by-product of sewage treatment is reused to heat processes/buildings at the North End Sewage Treatment Plant
- Winnipeg ReLeaf program provides residents with quality, affordable trees for private property

Key Directions and Actions

7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate (Primary Responsibility: Office of Sustainability)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Develop a Climate Resiliency Strategy. Ensure the Strategy considers the co-benefits and opportunities for alignment with the City's climate mitigation and adaptation efforts	X		
Encourage climate-friendly landscaping in residential, commercial and industrial buildings	X		
Launch a public awareness campaign to highlight opportunities for residential climate resilience initiatives, including backyard composting and use of rain barrels	X		
Explore regional opportunities to better connect the ecological network to add resiliency to Winnipeg and surrounding municipalities	X		

7.2 Increase and Preserve Tree Canopy (Primary Responsibility: Public Works Department)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Continue and explore opportunities to expand the Winnipeg Releaf Program	X		
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	X		
Develop a Citizen Engagement Strategy to amplify and support urban forestry initiatives and the work of community partners. The engagement strategy should aim to: a) mobilize and empower communities with information and tools to act individually and at the neighbourhood level to implement urban forestry actions, and b) build and maintain public awareness of the urban forest in enhancing quality of life for community members		X	
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	X		
Require a minimum threshold of trees in new neighbourhoods based on development agreement parameters		X	
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	X		

7.3 Preserve and Manage Parks and Natural Areas to Support Climate Change Mitigation (Primary Responsibility: Public Works - Parks)

Action	Short-Term (2018-2022)	Medium-Term (2022-2026)	Long-Term (2027 +)
Develop a methodology to quantify the value of ecological goods and services and natural assets		X	
Incorporate methodology to report on the impact of parks and natural areas into the community greenhouse gas inventory and reporting		X	
Join the watershed management authority and conservation districts program in Manitoba with the aim of helping to re-establish extensive wetlands that historically surrounded Winnipeg		X	

7 IMPLEMENTING THE PLAN

Winnipeg's Climate Action Plan provides a framework for the City's ongoing efforts to reduce greenhouse gas emissions in a holistic way. This framework includes a vision for the future, as well as emissions reduction targets that are ambitious and set the course for Winnipeg to be a leading winter city in climate action. A series of Strategic Opportunities, Key Directions and Actions together provide a comprehensive package of solutions to enable climate action and help the City on a path to its desired future. It includes policy and programs, education initiatives, and direct project implementation. The comprehensive package of Actions within each Strategic Opportunity area is intended to guide Winnipeg's planning and capital investment decisions, as well as the ongoing operations and maintenance activities required to help enable these climate actions. A long-term vision requires significant investment, and an implementation strategy that prioritizes actions, identifies accountabilities, and integrates continuous learning through monitoring and reporting.

Implementation Principles

The implementation strategy for Winnipeg's Climate Action Plan is based on a number of principles that the City will consider as it moves forward with implementing the Actions.

The Climate Action Plan is the first step, not the last step. Winnipeg's Climate Action Plan is the first community wide strategy for comprehensively addressing climate mitigation in Winnipeg. The actions are intended to lay the foundation for impactful climate action that sets Winnipeg on a trajectory to achieve its emissions reduction target. The Strategic Opportunities, Key Directions, and Actions are meant to be a first step in a long-term commitment to enabling climate action. Implementation of the Actions will require sustained and dedicated financial and staff resources, as well as consistent community collaboration over the long-term.

The Climate Action Plan is a flexible and living document. The City intends to review and update the Action Plan frequently. The City should monitor progress towards implementing the short-term actions over the 2018-2022 Council term. It should also commit to reviewing and updating the Strategic Opportunity areas 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.

Corporate collaboration and alignment are key components of implementation. A key aspect of the Plan is that it is tied closely to other departmental strategies and policies (e.g., Comprehensive Integrated Waste Management Strategy, Transit Oriented Development, etc.) The Plan represents a roll-up of all GHG emission reduction programming, policies and planning. The Climate Action Plan outlines Strategic Opportunity areas that will require ownership and accountability from a wide variety of City departments. It will be important to align administrative objectives within various departments to the strategic opportunity areas and priority actions within the Climate Action Plan. The City should continue to convene the Climate Change Working Group to ensure that implementation is coordinated throughout the administration.

Climate Action involves the entire community. The City is best positioned to lead the overarching community's efforts related to climate action and has an important convening role to coordinate and generate momentum in the wider community. As such, the City will work to engage in direct partnerships with community organizations, establish a Community Advisory Committee, and undertake additional public consultation. It is important to note that many of the Actions will require additional detailed input and technical work prior to implementation. Community and stakeholder engagement will help to inform this work.

Many of the Actions require more detailed input and technical work. This will be undertaken as the City moves forward with implementation. Successful implementation of the Actions requires:

- Increased funding levels
- Increased staff resources
- Improved corporate collaboration across all City departments
- Improved monitoring
- Continued collaboration with stakeholders and community

Priority Actions

For each of the seven Strategic Opportunity areas, Key Directions and Actions offer more specific statements about what the City will do related to climate change mitigation. The implementation timeline for each section has been identified as either short term (2018-2022), medium term (2022-2026), or long term (2027 onwards).

- Priority Actions are those identified with a near term implementation timeline of between 2018 to 2022. For each of the Short-Term Actions, additional detail related to the level of investment, level of potential impact on community greenhouse gas emissions, and the long-term value to Winnipeg is provided as follows:
- Level of Investment: Provides context for the likely level of City expenditure required to implement the action. For the purpose of this Action Plan the following ranges have been referenced to assign a ranking of low, medium and high:
  - Low: Less than $50,000
  - Medium: $50,000 to $500,000
  - High: greater than $500,000
- Level of Potential Impact on Community GHGs: Provides context for the likely effectiveness of the action in encouraging City of Winnipeg residents to reduce greenhouse gas emissions. High indicates that the action is likely to be foundational in maximizing greenhouse gas emissions reductions in the City of Winnipeg, whereas a lower ranking suggests that the action is likely representative of a more incremental improvement in Winnipeg's overall emissions

  It is important to note that Actions may have a low potential impact on community greenhouse gas emissions reductions but offer significant value in the long term to the City of Winnipeg. Often, these Actions set the stage for, or enhance the City and community's ability to implement increasingly bold opportunities
- Long Term Value to Winnipeg: Provides consideration to other non-greenhouse gas benefits that may result from an action. This includes, but is not limited to other environmental benefits, community economic vibrancy, community diversity and inclusion, reconciliation, intergenerational equity and overall community well-being.

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
1.1 Cultivate a Corporate Culture That Values Climate Action (Primary Responsibility: Office of Sustainability)				
Ongoing and consistent implementation of actions contained in the corporate Climate Change Action Plan (2009)	Enhance corporate action	Medium	Low	Medium
Celebrate staff taking initiative in corporate and community climate action	Enhance corporate action	Low	Low	Medium
Incorporate a Climate Action Plan alignment section into all Council reports	Enhance corporate action and community action	Low	Medium	High
Integrate Sustainability and Climate Action into Procurement Standards which can demonstrate increasing impact from year to year	Enhance corporate action	Medium	Medium	Medium
Encourage department ownership of climate mitigation measurement, ongoing reporting and implementation through a cross-departmental working group on Climate Change	Enhance corporate action and community action	Medium	Medium	Medium

1.2 Understand and Integrate Business and Economic Implications of Climate Action into Decision Making Processes (Primary Responsibility: Office of Sustainability)				
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	Enhance corporate action and community action	Medium	Medium	Medium
Establish a dedicated Climate Action Reserve Fund to support implementation of this Action Plan	Enhance corporate action and community action	High	High	High
Create an annual capital program for departmental sustainability and climate initiatives. Applications should be accepted by all departments	Enhance corporate action	Medium	Low	Medium
Incorporate climate action priorities into the annual budget process to ensure the City has resources to implement priority projects	Enhance corporate action and community action	Medium	Medium	High
1.3 Implement Low Carbon and Energy Efficient City Facilities and Buildings (Primary Responsibility: Property, Planning and Development Departmnet)				
Implement energy benchmarking for all City owned Buildings (using Portfolio Manager) to identify opportunities for improved energy performance	Promote building retrofits to increase energy efficiency	Low	Low	High
Conduct an energy audit of all City facilities to seek opportunities to implement equipment and programs that will maximize energy performance	Promote building retrofits to increase energy efficiency	High	Low	High
1.4 Encourage Sustainable Transportation Options (Primary Responsibility: Winnipeg Fleet Management Agency)				
Ongoing implementation of the Green Fleet Plan (2010) to reduce vehicle emissions.	Improve fleet fuel efficiency/electrification of fleet	High	Low	Medium
Conduct a comprehensive business case evaluation of the City electric vehicle pilot project and look to accelerate the electrification of the City's fleet	Accelerate the electrification of fleet	Medium	Low	Medium

1.5 Reduce Employee Vehicle Kilometers Travelled (VKT) and associated GHGs (Primary Responsibility: Winnipeg Parking Authority)				
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	Reduce corporate vehicle kilometers traveled	Medium	Low	Medium
1.6 Reduce Consumption and Increase Waste Diversion (Primary Responsibility: Office of Sustainability)				
Building on direction from the Corporate Waste Strategy (2015), examine procurement policies to look for opportunities to reduce consumption	Enhance corporate action	Low	Low	Low
1.7 Increase Opportunities to Respond to Food Needs Throughout Winnipeg and Increase Access to Local and Sustainable Food ((Primary Responsibility: Office of Sustainability)				
Support local food procurement at City of Winnipeg facilities	Enhance corporate action	Low	Low	Low
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	Enhance corporate action and community action	Low	Low	Medium
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	Enhance corporate action and community action	Low	Low	Medium
1.8 Ensure that City Land Use, Transportation and Built Environment Policy, Bylaw, and Regulation Recognize Climate Mitigation and Climate Protection Priorities (Primary Responsibility: Office of Sustainability)				
Incorporate climate risks and mitigation targets and opportunities related to land use, transportation and development into OurWinnipeg review that is currently underway. This will necessitate a review of all four Direction Strategies (A Sustainable Winnipeg, Sustainable Water and Waste, Sustainable Transportation and Complete Communities)	Enhance climate resilience	Low	Medium	High
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	Enhance climate resilience	Low	Low	High
Incorporate climate risks and mitigation targets and opportunities into the anticipated Transportation Master Plan update and Transit Master Plan	Enhance climate resilience	Low	Medium	High
Incorporate climate risks and mitigation targets and opportunities into the Comprehensive Integrated Waste Management Strategy	Enhance climate resilience	Low	Medium	High

1.9 Work with Indigenous Communities, the Province, and the Federal Government to Advance Climate Action (Primary Responsibility: Office of Sustainability)				
Collaborate with senior levels of government for increasing investment in programs supporting climate action	Enhance corporate action and community action	Low	Low	High
Leverage funding from the province and federal governments to advance climate action	Enhance corporate action and community action	Low	Low	High
Engage Winnipeg's Indigenous population on issues around climate change	Enhance corporate action and community action	Low	Low	High

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
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)				
Establish a series of Community Action Teams that will provide technical advice and strategic guidance to help implement 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	Enhance community action	Low	Medium	High
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	Enhance community action	Low	Low	High
2.2 Develop Public Education and Awareness Campaigns on Sustainable Transportation (Primary Responsibility: Public Works Department Department)				
With every new transit, cycling or pedestrian infrastructure investment, launch an education and awareness campaign targeting City 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)	Increase active transportation, transit use	Low	Medium	High
2.3 Create Conditions to Enable Community Climate Action (Primary Responsibility: Office of Sustainability)				
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	Enhance community action	Low	Low	High

STRATEGIC OPPORTUNITY #3 – ADVANCING SUSTAINABLE TRANSPORTATION

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
3.1 Increase Use and Efficiency of Public Transit Systems (Primary Responsibility: Winnipeg Transit)				
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	Increase active transportation, transit ridership	Low	High	High
Deliver continuous improvement in transit service with a focus on customer service, reliability, and route connectivity, and public education	Increase transit ridership	Low	Medium	High
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	Increase transit ridership	High	Low	Medium
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	Increase active transportation, transit ridership	High	Medium	High
3.2 Increase the Density of Urban Development Along Key Transit Corridors (Primary Responsibility: Planning, Property and Development Department)				
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	Increase active transportation, transit ridership	Medium	Medium	Medium
Align transit route planning with growth and development trends to ensure neighbourhoods undergoing transition have convenient and frequent transit services	Increase active transportation, transit ridership	Low	Medium	High

3.3 Design New Suburban Communities to Enable Enhanced Transit Services and Access to Transit Corridors (Primary Responsibility: Winnipeg Transit)				
Require sidewalks in new residential developments to ensure safe walking routes to transit stops	Increase active transportation, transit ridership	Low	Low	Low
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	Increase transit ridership	Low	Low	Medium
3.4 Increase Active Transportation Rates (Primary Responsibility: Public Works Department)				
Accelerate the implementation of the Pedestrian and Cycling Strategies (i.e., through increased funding, staffing levels)	Increase active transportation	Medium	Medium	High
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	Increase active transportation	Low	Low	Low
Continue to fund and develop W.R.E.N.C.H, an organization focusing on core area education and outreach on bike repair	Increase active transportation	Low	Low	Low
Continue to partner and promote initiatives that encourage active transportation (e.g., Bike to School Month and Commuter Challenge).	Increase active transportation	Low	Low	Low
Enhance operation and maintenance of pedestrian and cycling facilities during winter months though re-prioritization of snow-clearing activities, assessing equipment needs, and engaging the active transportation community.	Increase active transportation	Medium	Medium	Medium
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.	Increase active transportation	Low	Medium	Medium
3.5 Reduce Traffic Congestion (Primary Responsibility: Public Works Department)				
Adopt intelligent railway crossing measurement and compensation mechanisms that reduce congestion due to railway crossings.	Reduced congestion due to railway crossing events	High	High	High
Adopt intelligent and automated signal timing systems that adapt signal timings to weather and traffic conditions, alleviating congestion and reducing transit times. (see: Smart Cities Challenge 2018 proposal)	Reduce congestion overall	High	Medium	High
Improve clarity and precision of Transit services through enhanced data analytics and insights into Transit service consumption and delivery	Increase transit ridership	Medium	Medium	Medium

3.6 Increase the Use of Electric Vehicles (Primary Responsibility: Public Works Department)				
Develop an Electric Vehicle Strategy for Winnipeg	Increase presence of EVs	Medium	Medium	High
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	Increase presence of EVs	Low	Low	Low
3.7 Utilize Zero Emission Buses (Primary Responsibility: Winnipeg Transit)				
Building on the momentum of the Electric Bus Pilot Project, plan for and initiate the deployment of electric buses at a larger scale	Increase presence of EVs	Medium	Medium	High
Prepare a transition plan outlining approaches to network integration, facility needs (charging facilities and storage), maintenance requirements and expected training considerations	Increase presence of EVs	Low	Medium	High
Leverage funds from the Government of Manitoba or federal government to support the planning, capital investment, and operating costs associated with the shift	Increase presence of EVs	Low	High	High

STRATEGIC OPPORTUNITY #4 – FACILITATE COMPACT, COMPLETE DEVELOPMENT AND INCREASE DENSITY

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
4.1 Increase Strategic Infill Development that Provides Access to and Capitalizes on Existing and Planned Corridors with Frequent Transit Service (Primary Responsibility: Property, Planning and Development Department)				
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	Reduces building energy demands/personal vehicle needs	Medium	High	High
Complete the OurWinnipeg Residential Growth Study which will identify priority areas for residential growth within Winnipeg	Reduces building energy demands/personal vehicle needs	Low	Medium	High
4.2 Ensure New Areas of Growth are Designed According to the Principles of Complete Communities (Primary Responsibility: Property, Planning and Development Department)				
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)	Reduces building energy demands/personal vehicle needs	Low	Medium	Medium
4.3 Pursue Transit-Oriented Development (Primary Responsibility: Planning, Property and Development Department)				
In new transit-oriented development, ensure there are active transportation linkages and connections to facilitate a connected, diverse and sustainable transportation network	Reduce building energy demands/personal vehicle needs and increase active transportation	Medium	Medium	Medium
Gain further insight into the opportunities and constraints to transit-oriented development through the current Eastern Corridor Study	Reduces personal vehicle needs	Low	Low	High
4.4 Support Redevelopment of Former Commercial and Industrial Lands into Active Use (Primary Responsibility: Property, Planning and Development Department)				
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	Reduce building energy demands/personal vehicle needs	Medium	High	High

STRATEGIC OPPORTUNITY #5 – LOW CARBON AND ENERGY EFFICIENT BUILDINGS

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
5.1 Increase Energy Performance of Existing Buildings (Primary Responsibility: (Property, Planning and Development Department)				
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	Enhance residential sector energy / emissions performance.	Medium	Medium	Medium
Work with the Manitoba Chapter of the Canada Green Building Council (CaGBC Manitoba Chapter) – 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	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Medium	High
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	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Low	High
Work with key stakeholder groups to accelerate the implementation of an energy performance labelling program for existing and new buildings	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Low	Medium
5.2 Improve Energy Performance of New Buildings (Primary Responsibility: (Property, Planning and Development Department)				
Complete a review of existing practices used to enforce existing Energy Codes and determine if there are opportunities for continuous improvement and innovation	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Medium	Medium
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	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Low	Medium
5.3 Increase Access to Educational Materials (Primary Responsibility: (Office of Sustainability)				
Work with 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	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Medium	Medium
Work with 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	Enhance building energy efficiency/fuel switching to zero emission energy sources	Low	Low	Medium

STRATEGIC OPPORTUNITY #6 – WASTE REDUCTION AND DIVERSION

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
6.1 Reduce Consumption and Increase Waste Diversion from Residential, Commercial and Industry (Primary Responsibility: Water and Waste Department)				
Implement direction from the Comprehensive Integrated Waste Management Strategy to advance the priority of organic material diversion from landfill	Reduce organic waste going into the landfill	High	Medium	High
Continue to invest in educational and awareness programming to help maximize waste diversion	Reduce organic waste going into the landfill	Low	Medium	Medium
6.3 Utilize Biosolids In Agriculture and Landscaping Industries (Primary Responsibility: Water and Waste Department)				
Continue to work with key stakeholders to accelerate the implementation of the Biosolids Master Plan and maximize the diversion of biosolids from landfill	Reduce organic waste going into the landfill	High	Medium	High
Strategically support (incentives, pilot projects, etc.) the application of biosolids in agriculture and the use of biosolids in soil manufacturing	Reduce organic waste going into the landfill	Medium	Low	Medium
6.4 Support Integrated Resource Recovery Opportunities (Primary Responsibility: Water and Waste Department)				
Complete a feasibility analysis to determine the value of investing in integrated resource recovery projects (including capture reuse of methane and combined heat and power) within the City's wastewater facilities and landfills	Strategically invest in resource recovery opportunities	Medium	Medium	Medium

STRATEGIC OPPORTUNITY #7 – COMMUNITY CLIMATE RESILIENCY

Short-term Actions (2018-2022)	Desired Response	Level of Investment	Level of Potential Impact on Community GHGs	Long Term Value to Winnipeg
7.1 Implement Opportunities to Improve Winnipeg's Resilience and Adaptability to the Effects of a Changing Climate (Primary Responsibility: Office of Sustainability)				
Develop a Climate Resiliency Strategy. Ensure the Strategy considers the co-benefits and opportunities for alignment with the City's climate mitigation efforts	Enhance climate resilience	Medium	Low	High
Encourage climate-friendly landscaping in residential, commercial and industrial buildings	Enhance climate resilience and promote carbon sinks	Medium	Low	Medium
Launch a public awareness campaign to highlight opportunities for residential climate resilience initiatives, including backyard composting and use of rain barrels	Reduce organics into landfill and enhance climate resilience	Low	Low	Medium
Explore regional opportunities to better connect the ecological network to add resiliency to Winnipeg and surrounding municipalities	Enhance climate resilience	Medium	Low	Medium
7.2 Increase and Preserve Tree Canopy (Primary Responsibility: Public Works Department)				
Continue and explore opportunities to expand the Winnipeg Releaf Program	Promote carbon sinks	Medium	Medium	High
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	Promote carbon sinks	Low	Low	High
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	Promote carbon sinks	Medium	Medium	High
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	Promote carbon sinks	Low	Low	Medium

Upcoming External Funding Opportunities

The cost to implement the Actions contained in this Plan can be significantly reduced by pursuing external funding sources and partnership opportunities. The following highlights several opportunities:

Green Municipal Fund (Federation of Canadian Municipalities)

The Federation of Canadian Municipalities manages the Green Municipal Fund, with a total allocation of $550 million. This fund is intended to support municipal government efforts to reduce pollution, reduce greenhouse gas emissions and improve quality of life. The expectation is that knowledge and experience gained in best practices and innovative environmental projects will be applied to national infrastructure projects. There are six focus areas and funding varieties for each project type. In general funding is allocated as follows:

- Plans and Studies: Up to $175,000
- Pilot projects: Up to $350,000
- Capital projects: Up to 80% of eligible costs and low-interest loans available maximum is $5 million, with 15% being made up through grants. All applications are open year-round

Appendix E provides details of the potential focus areas, example projects, and the required municipal contribution.

The Low Carbon Economy Fund

The federal Low Carbon Economy Fund is part of the Pan-Canadian Framework on Clean Growth and Climate Change. The fund provides $1.4 billion to provinces and territories that have adopted the Framework to assist them in delivering on their commitments to reduce greenhouse gas emissions. After signing onto the Framework in early 2018, the province of Manitoba is eligible to receive about $67 million in federal funding.

Conservation Trust Fund

The Government of Manitoba has committed to creating a $102 million-dollar Conservation Trust Fund that is intended to provide a financial support to achieving the goals and objectives of the Province's Climate and Green Plan. The trust is particularly focused on initiatives related to conserving ecosystems, green infrastructure (natural assets), water quality, and carbon sinks. The fund will be administered by the Winnipeg Foundation and will provide matching funds to municipalities, community groups, non-government conservation organizations and academic institutions.

Climate and Green Fund

In its 2018 budget, the Government of Manitoba committed to creating a Climate and Green Fund that will be used to implement the Province's strategy. This $40 million fund will be available for projects that help reduce emissions and adapt to climate change (e.g., public and active transportation, wetland restoration, building energy efficiency and waste and recycling programming).

USDN Innovation Fund

The Urban Sustainability Directors Network (USDN) is a peer-to-peer network of local government professionals from cities across the United States and Canada dedicated to creating a healthier environment, economic prosperity, and increased social equity. As a member of the network, the City of Winnipeg has access to the

USDN innovation fund that supports collaborations of four or more-member communities to develop innovations that address city-identified problems or opportunities in sustainability or scale-up proven innovations.[28]

Natural Resources Canada (NRC)

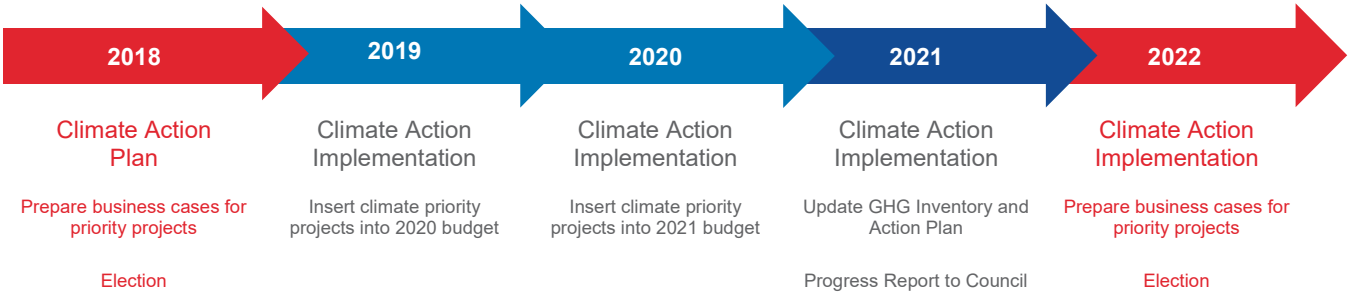
Through Natural Resources Canada, the federal government administers a number of grants and incentive programs to encourage research, development and demonstration in Canada. The Clean Energy Innovation Program has a number of key priority areas relevant to Winnipeg's Climate Action Plan:

- Renewable, smart grid and storage systems
- Methane and VOC emission reduction
- Greenhouse gas emissions reduction in the building sector
- Improved industrial efficiency

Monitoring

A monitoring strategy is essential to ensure that Winnipeg's Climate Action Plan is implemented as intended, and to determine whether the Plan is achieving progress towards the emission reduction targets. A monitoring program can enable City staff to appropriately allocate monetary and staff resources and implement the prioritized initiatives of the Plan. Monitoring also provides a means of identifying changing circumstances which would require changes to the Plan.

It is suggested that a monitoring and reporting program be developed that aligns with the Council election cycle as shown below. The flow of activities over the short term (2018 to 2022), identify key leverage points based on the municipal budget cycles and schedules. For example, it is recommended that the City prepare business cases for priority projects in 2018 prior to the fall municipal election. These business cases can provide rationale and support for allocating capital and operating budgets each year in 2019 and 2020. It is recommended that the City update its greenhouse gas emissions inventory and the Action Plan in 2021 to illustrate the City's progress towards its 2030 and 2050 emissions targets, and to reflect changing circumstances and learn from the Plan's implementation activities.



[28] For more information: https://www.usdn.org/public/page/59/Collaborative-Innovation-System

Performance Indicators and Data

To support the progression and achievement of the greenhouse gas emissions reduction targets outlined in Part 5, a series of sector targets were established to guide key actions and investments. Additionally, a series of sector-specific performance indicators have been developed to help evaluate the City's progression towards achieving the 2030 target (20 per cent reduction in greenhouse gas emissions relative to 2011 levels), and ultimately the 2050 target.

As the City progresses with the implementation of Winnipeg's Climate Action Plan, these performance indicators should be regularly monitored and reported on to support a continuous improvement model. The following table suggests a series of data needs to support the performance indicators in each of the sectors. Where possible, the City should consider partnering with Winnipeg's Peg project for data collection and analysis.

Table 7.1: Transportation Sector - Data Needs to Support Performance Indicators

Transportation Sector		
2030 Sector Targets	**2030 Performance Indicators**	**Data Needs to Support Performance Indicators**
17% reduction relative to total City emissions in 2011	2030 the City will see a mode share breakdown of: » 50% Auto-Driver » 21% Auto-Passenger » 15% Public Transit » 14% Walking/Cycling Additionally, the City aims to establish an Active Transportation Network of 800 km. Electric vehicle use reaches 8% of the total fleet of vehicles throughout Winnipeg	Continuous investment is required to understand the baseline conditions of transportation mode shares, including developing a robust means to track: » Auto Use (Single Vs Multi-Passenger) » Transit Usage » Active Transportation Numbers » Vehicle Kilometers Traveled By Mode Share » Vehicle Counts and Type » Activity Rates Much of this data (in particular vehicle use) may be tracked already via Manitoba Public Insurance and Statistics Canada. Collaboration with these entities is suggested to help streamline data collection efforts. Also, the City should track the total network of active transportation trails and dedicated lanes (in addition to sidewalks). Finally, the City should monitor and report on the use of fossil fuels vs alternative energy supplies for the corporate fleet and transit.

Table 7.2: Buildings Sector - Data Needs to Support Performance Indicators

Buildings Sector		
2030 Sector Targets	**2030 Performance Indicators**	**Data Needs to Support Performance Indicators**
8% increase in emissions relative to total City emissions in 2011	» Residential building natural gas consumption does not go above 604,010,541 m3 (limited to an increase of approximately 124 percent relative to the 2011 sector baseline). Limiting consumption to this increase will require homes to incorporate energy efficiency upgrades and/or renewables. » Commercial building natural gas consumption does not go above 448,167,147 m3 (limited to an increase of approximately 124 percent relative to the 2011 sector baseline. Limiting consumption to this increase will require commercial buildings to incorporate energy efficiency upgrades and/or renewables. » 8% of all residential homes have incorporated renewables and/or made significant energy efficiency upgrades to work towards the achievement of having a net-zero energy and emissions footprint. » 12% of all commercial and industrial buildings have included renewables and/or made significant energy efficiency upgrades that significantly reduce the need for natural gas and work towards being a net-zero building. Such measures are likely to include the implementation of (biomass) district energy systems, geo-exchange, and solar technologies or significantly reduce the need for natural gas for space and water heating.	To support greater education and awareness on the importance of energy efficiency and low carbon buildings in the City of Winnipeg, the following indicators will be tracked annually: » Number of business community members that have attended presentations related to the benefits of green buildings. » Number of third party green building certifications, including City of Winnipeg owned buildings » Number of buildings registered annually in Portfolio Manager, including City of Winnipeg owned buildings » Number of buildings that have received Energy Star certification To understand progress on energy efficiency: » Total number of Manitoba Hydro energy efficiency projects completed. These projects include but are not limited to the installation of high-efficiency furnaces, high-efficient hot water tanks, building envelope upgrades (i.e. insulation and windows) and other commonly practiced energy efficiency retrofits. » Total GHG emission reduction from commercial buildings in Winnipeg on an annual basis These GHG emission reductions likely result from commercial buildings that have incorporated renewables and/or made significant energy efficiency upgrades to work towards the achievement of having a net-zero energy and emissions footprint. Renewable measures that are likely to contribute to GHG savings in Manitoba include the implementation of (biomass) district energy systems, geo-exchange, and solar technologies or significantly reduce the need for natural gas for space and water heating. » Annual Natural gas consumption from the residential sector in Winnipeg » Annual Natural gas consumption from the commercial sector in Winnipeg » Key sources of data include Manitoba Hydro and the Manitoba Geothermal Energy Alliance.

Table 7.3: Land Use Sector - Data Needs to Support Performance Indicators

Transportation Sector		
2030 Sector Targets	**2030 Performance Indicators**	**Data Needs to Support Performance Indicators**
n/a	» 50% of all new buildings are infill development	The City should work to track and report on the development of infill lots relative to greenfield development, as well as the type of buildings (for example, single family homes vs. multi-family units). To complement this data, it is likely advantageous to develop an urban density indicator that aims to show the overall density (in terms of buildings [by type] per square kilometer) in Winnipeg. This would allow the City to advance its understanding of the overall form of Winnipeg, and thus estimate likely use of public transit, active transportation, and building energy use today, and going forward.

Table 7.4: Waste Sector - Data Needs to Support Performance Indicators

Waste Sector		
2030 Sector Targets	**2030 Performance Indicators**	**Data Needs to Support Performance Indicators**
11% reduction relative to total City emissions in 2011	» 75% residential waste diversion and an 80% diversion rate for commercial/industrial and construction and demolition wastes. » 70% of all biosolids are diverted for commercial use » The Brady Resource Recovery Centre's landfill gas collection system will be expanded over time and its methane collection efficiency will improve to 75%	It is understood that the Water and Waste Department tracks waste generation rates by sector and composition, as per the City of Winnipeg – Comprehensive Integrated Waste Management Plan. Associated data collection efforts should be maintained. Additionally, the end of life destination of municipal biosolids should continue to be tracked. More specifically the portion of biosolid being diverted from landfill for other uses.

APPENDIX A

Background on Climate Policy and Related Council Direction in Winnipeg

Background on Climate Policy and Related Council Direction in Winnipeg

OurWinnipeg is Winnipeg's blueprint, developed to guide the growth and progress of the City. The plan is based on four Direction Strategies – *Sustainable Water and Waste*, *Sustainable Transportation*, *Complete Communities* and *A Sustainable Winnipeg* – that describe the policies, directions and strategies necessary for successful implementation of the plan.

Generally, *OurWinnipeg* directs the following – a move towards compliance with contemporary building code standards, and overall reduction in the environmental impact of both corporate and community activities, through strategies such as planning for sustainable energy use and GHG reduction. The Plan's supporting Direction strategies and associated plans each address aspects of climate change. These are detailed below.

Plan/Policy	Section	Title	Page	Details
OurWinnipeg	01-4	A City that Works	54-57	Direction 2 identifies the need to collaborate with other levels of government and other partners to renew and regenerate Winnipeg's housing stock. A key Enabling Strategy within this Direction includes - support improved energy efficiency and GHG emissions reductions, and move towards compliance with contemporary building code standards.
	02-2	A Sustainable City - Environment	68	Under OurWinnipeg's Environment heading, a key direction provided is to reduce the environmental impact of our activities through strategies such as planning for sustainable energy use and greenhouse gas reduction.
Complete Communities	03-1f	Transformative Areas - Getting From Place to Place Downtown	30	The Key Direction identified is the need to facilitate the movement of people and goods both within downtown and to it from elsewhere in the City by focusing primarily on an enhanced array of transportation options. Strategies will promote the movement of people and goods in a manner that reduces GG emissions and promotes sustainability.
	03-2	Transformative Areas - Centres and Corridors	34	The Key Direction identified by Complete Communities is to focus a significant share of growth to centres and corridors in a manner that, in addition to other things, encourages a built form that supports a pedestrian-friendly environment while incorporating climate-sensitive site and building design.
Sustainable Transportation	05-2b	A Sustainable Strategic Direction for Transportation - Management of Operational Improvements	27	This section describes the need to ensure that the major street network is optimized through measures such as reducing delays and emissions through improvements to the traffic signal management system. A component of this is the implementation of Transportation Demand Management initiatives.
	8	Measuring Success	42	One of the goals identified in Sustainable Transportation is 'a transportation system that supports an active, accessible and safe lifestyle'. Relevant performance indicators include: Air emissions, bicycling and walking facility supply, bicycle use, pedestrian and safety.

Sustainable Water and Waste	04-4a	Current Conditions - Maximize our Existing Wastewater Treatment and Collection System Capacity	25	As per Direction 04-4a Capacity Management Operations and Maintenance (CMOM), the City will continue to strategically invest in the regional wastewater interceptor and local wastewater systems to ensure that they are safe, reliable, robust, cost effective, and practicable. These investments have the potential of: • Reducing demands on non-renewable resources (e.g., more efficient gas engines, chemicals for wastewater treatment process, etc.) • Reducing demands on electricity through the use of more energy efficient devices (e.g., pump, lighting, temperature setbacks, gravity-based solutions for wastewater flows). • Lowering the GHG footprint of these facilities.
	05-2a	Solid Waste Management - Comprehensive Waste Management Strategy	32	There is a need to integrate and optimize the service level and efficiency of all facets of the solid waste management system, while minimizing environmental impacts. Carrying out a comprehensive waste management strategy would address these objectives. The beneficial outcome of this process would include for example, reduced GHG emissions and less reliance on landfilling. The elements included in such a strategy would include but not be limited to the following programs/opportunities (listed by plan section): • 05-2a Recycling • 05-2b Source Separated Organics • 05-2c Resource Recovery Opportunities • 05-2d Methane Gas Capture • 05-2e Organic Material Processing and Energy Recovery • 05-2f Manage the Disposal of Construction and Demolition Waste
	08-3	Supporting Policies and Strategies - Solid Waste Management Supporting Policies	51	Policy three describes the need to seek to evaluate programs for capturing and/or producing energy from organic waste. As part of this, the City will take steps toward evaluating one or more alternative waste technologies to reuse and/or capture energy from organic waste to maximize the safe, cost effective extraction of useful energy from its organic waste streams and minimize the methane and carbon dioxide emissions associated with organic waste. The evaluation process will consider the financial, social and environmental impacts for organics transportation and processing.
A Sustainable Winnipeg	05	The Foundation: Leading by Example	16	Direction 2 describes the incorporation of sustainable practices into internal civic operations, programs and services. Key enabling strategies include: • In partnership with the community, create and maintain a Climate Change Action Plan to reduce the City of Winnipeg's corporate greenhouse gas emissions by a further 20% below 1998 levels. • Establish corporate greenhouse gas reduction targets for 2020 and 2035. • Create a corporate waste diversion strategy for the organization, including baselines and benchmarks. • Green the City's fleet operations through a plan that includes direction on anti-idling, efficient vehicles, use of alternate fuels and the right-sizing of the fleet. • Investigate opportunities to sell greenhouse gas emission reductions as carbon-offset credits.

	09	Continue to Respect and Value our Natural and Built Environment	36	• Direction 1 addresses the need to reduce the environmental impact of our actions. Key enabling strategies include: Maintain a Climate Change Action Plan to reduce the City of Winnipeg's operational greenhouse gas emissions by a further 20 per cent below 1998 levels. • Establish a corporate greenhouse gas reduction target for 2020 and 2035. • Create and maintain a Climate Change Action plan to reduce Winnipeg's community-wide greenhouse gas emissions by 6 per cent below 1998 levels and establish a community-wide GHG reduction target for 2020 and 2035. • Establish a community-wide greenhouse gas reduction target for 2020 and 2035. • Create and maintain a Corporate Energy Plan that focuses on reducing energy consumption and on promoting the use of renewable energy sources. • Continue to expand the active transportation network and other active transportation initiatives. • Measure our Ecological Footprint and develop strategies to reduce it.
Comprehensive Integrated Waste Management Strategy (Garbage and Recycling Master Plan)	-	-	-	In order to achieve a greater than 50% waste diversion rate, Council approved the Comprehensive Integrated Waste Management Strategy for implementation starting in 2012. Excerpts relevant to climate action planning include the following: • Plan estimates a significant overall reduction in GHG production. • Ongoing recycling and expanded leaf and yard waste collection will further divert material from the landfill will contribute to reduced GHG emissions. • The potential of an organic waste collection program to reduce GHG emissions is acknowledged.
Moving Winnipeg Toward 2031 - Transportation Master Plan		-	11	This plan sets out a long-term strategy to guide the planning, development, renewal and maintenance of a multimodal transportation system in a manner that is consistent with projected needs, and aligned with the City's growth and the overall vision for a sustainable Winnipeg and region. Specifically - Key Strategic Goal Six describes the need to ensure a transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emissions reduction goals set by the City and the Province.

APPENDIX B

Best Practices in Climate Action Planning

Winnipeg

Winnipeg's Climate Action Plan

Planning for Climate Change • Acting for People

Supporting Climate Action Best Practices In Winnipeg

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Contents

1 Purpose 3

2 Visioning 3

3 Best Practices in Setting a Target 3

3.1 What is the Overall Context of the Community as it Relates to Climate Action? 4

3.2 What approach (methodology) will be used to establish a target? 6

3.3 How Ambitious Should the Target Be? 9

3.4 What Type of Target? 9

4 Advancing Emissions Reductions – Exploring Best Practices 11

4.1 Transportation 12

4.2 Residential 15

4.3 Commercial and Institutional Buildings 18

4.4 Municipal Corporate Operations 20

4.5 Waste Management 22

4.6 Community-Based Renewable Energy 24

4.7 Urban Agriculture and Urban Forestry 26

1 PURPOSE

This document provides an overview of key approaches for supporting the advancement of the *City of Winnipeg's Climate Action Plan: Planning for Climate Change. Acting for People* including planning for setting a climate vision, approaches to advancing a greenhouse gas emissions reduction target, and an overview of various tools used by local governments across Canada to reduce emissions.

2 VISIONING

Developing a climate vision statement can serve as an important process and reference point to advancing the development of a road map for the City's climate action strategy. In short, the vision statement is meant to be a qualitative and aspirational statement that guides the direction of the overall action strategy.

To facilitate the development of a vision statement within the City's planning process, a series of questions can be explored to gauge community interest and City commitment to advancing emissions reductions programs, policies and investments. Some of these key questions include, but are not limited to:

- Do we want to lead by example through meaningful action?
- Are we, as a community, willing and able to change our relationship with energy?
- What does success look like over the next 5, 10 and 20 years?
- What should Winnipeg be known for (related to climate mitigation) in 2050?
- Can we be bold in taking action? If yes, what does this look like?

Most often a vision statement is developed through internal and community-based engagement processes. Over the course of the coming community engagement processes, we will work to explore questions such as those presented above to advance the development of a vision statement for the City's climate action strategy.

3 BEST PRACTICES IN SETTING A TARGET

Establishing a meaningful target is an important element of a successful greenhouse gas / climate action plan. An emissions target offers a means to communicate how the community prioritizes the issue of greenhouse gas emissions. Ultimately the emissions reduction target sets the future direction of a community's actions to reduce emissions.

Emission reduction target statements generally consist of three components:

- A baseline year for greenhouse gas emissions (typically reflecting the total emissions within a community's emissions inventory)
- A reduction commitment (expressed as a percentage or/and total level of reduction in emissions relative to the baseline)
- A time commitment for achieving the reduction target

While emissions reduction targets do help to provide clarity and direction to a climate action strategy, they are not necessary for acting and in certain contexts can even be a distraction for advancing action. Therefore, consideration should be given by the City with regards to the overall purpose of the target within the broader planning process.

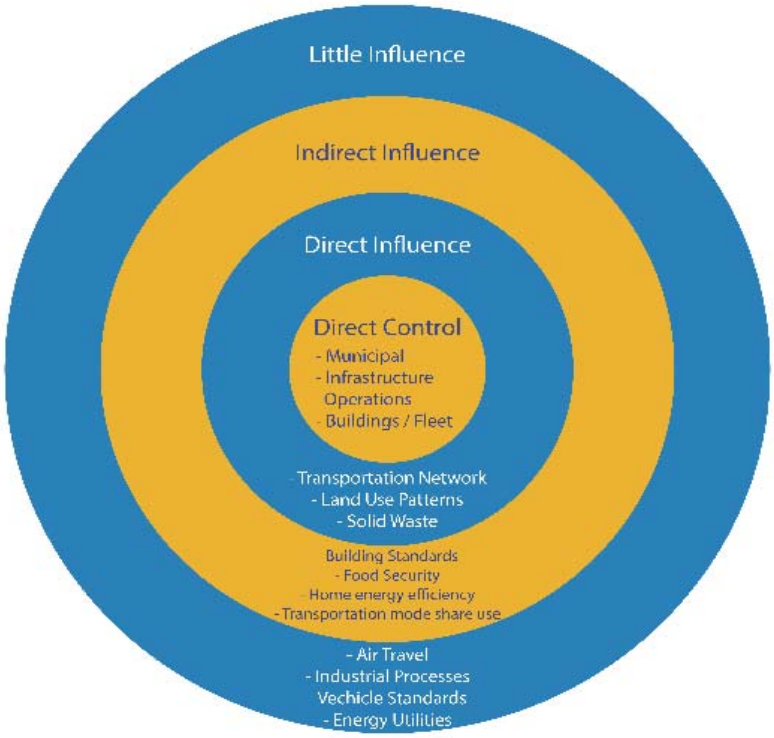
To help facilitate the advancement of a target, and following best practices, some key questions should be considered when setting a target:

- What is the overall context of the community as it relates to climate action?
- What approach (methodology) will be used to establish a target?
- How ambitious should the target be?
- What are types of targets (intensity versus absolute; overall vs. sector specific)?

The following sections of this memo aim to assist the City in its efforts to explore these key questions as it relates to the target setting process and to help maximize the utility of the target in supporting action.

3.1 What is the Overall Context of the Community as it Relates to Climate Action?

When developing an emissions reduction target, it will be important for the City to consider the following:	
Existing Community Plans and Policies	Community plans and policies not specific to climate change can have a significant influence on a community's ability to change its emissions profile. This includes transportation plans, community sustainability plans and land use plans. These plans should be given consideration during the development of a reduction target, as they can hinder or empower action.
Winnipeg's Climate and Geography	Hot summers and cold winters influence Winnipeg's building and transportation systems, and consequently, the actions possible and realistic to reduce GHG emissions. Similarly, Manitoba's electricity grid is supplied primarily by hydroelectricity, and therefore Winnipeg's emissions from electricity are low compared to other cities where electricity is sourced from coal or natural gas. These factors should be considered when developing a reduction target, as they can influence the emission potential and abatement costs.
Actions and Policies of Senior Level Governments	The policies, plans and programs of senior governments will directly and indirectly influence a community's emissions profile. Consideration to provincial and federal efforts to facilitate reductions should be accounted for when developing a target.

<table>
<tr><td></td><td colspan="3">AUTHORITY AND INFLUENCE AMONGST DIFFERENT LEVELS OF GOVERNMENT</td></tr>
<tr><td></td><td colspan="3">Overview of a municipality's degree of influence in reducing greenhouse gas emissions:

</td></tr>
<tr><td></td><td>Municipal
Land use planning & transportation networks
Indirect influence over transit viability/use, active transportation
Size & type of buildings
Indirect influence over building energy consumption
Solid waste management
Municipal operations</td><td>Province & Territories
Building codes
Transit
Highways
Industry
Regulate electric and natural gas utilities
Can control efficiency of vehicles and equipment but often leaves to Federal government.</td><td>Federal
Vehicle efficiency standards
Regulates some transportation – air & marine
Regulate pollutants
Industry extraction standards
Influence over building codes</td></tr>
<tr><td>Emission Abatement Cost</td><td colspan="3">The cost of implementing the actions required to mitigate emissions and ultimately achieve the desired target should be given consideration as part of the target setting process. More specifically, it is important to understand the overall business case of one emissions reduction opportunity relative to another.</td></tr>
<tr><td>Implementation Context</td><td colspan="3">It is important to consider the overall context and jurisdictional authority of the City when setting an emissions target. Some key questions to understand this context include, but are not limited to the following:
Can the City directly or indirectly advance an emissions reduction opportunity?
Is the community / municipal organization risk averse to change?</td></tr>
</table>

	• Are there political opportunities and constraints that can influence the overall direction of a climate action plan? • Is there a dedicated team of staff to help implement the climate change action strategy to maximize the probability of success? • Are there resources available to support new programs and policies to empower community action?
Scope of Emissions	The City of Winnipeg follows the ICLEI protocol for accounting and reporting greenhouse gas emissions for communities; it defines the type and geographic reach of GHG emissions according to Scope 1, 2, and 3. The City of Winnipeg inventories emissions from building electricity and heating, transit, personal and freight vehicles, waste disposal and water and wastewater treatment and distribution. Emissions from rail, air, off road or any transportation in and out of the City, agriculture, forestry or industrial processes, and emissions resulting from the consumption of goods and services are not included. Although some processes and activities generate significant GHG emissions, it can be challenging to acquire data to accurately measure or track. Global protocols and best practices are evolving for some of these measures to help standardize measurement and prevent double counting across jurisdictions. It is common practice to focus emission reduction targets and actions on the scope of emissions that are included in the emissions inventory.
Monitoring and Evaluation	A key benefit to establishing an emissions target is that it allows a performance management system to be developed. In other words, a target can be used to monitor and evaluate the overall and specific successes and weaknesses of an action strategy. Therefore, consideration should be given to how the target will be monitored, the resources available to support the monitoring, and potential actions that would be taken in response to monitoring and evaluation processes.

3.2 What approach (methodology) will be used to establish a target?

In general, there are three approaches to setting emissions reductions targets:

- Top-Down Approach
- Bottom-Up Approach
- Iterative Approach

These approaches are summarized as follows:

Top-Down Approach

A top-down approach to setting a reduction target sees an overall reduction goal established and then develops a plan of action which will help it achieve that target. For example, a community could establish a target of a 50% reduction in community greenhouse gas emissions by 2050. This target may be driven by a number of environmental, political and socio-economic factors, but sometimes lacks direction on how the target will actually be achieved.

With an established target, the community then works “backwards” to develop an implementation strategy of policies and programs intended to achieve this target.

Key Advantages:

- Allows the community to be more ambitious in advancing climate action;
- Often aligns with overall global emissions reduction targets to minimize climate change risks;

- Incorporates the unknown changes in behaviours and advancements in technology which could facilitate reductions over the long-term; and
- Offers a key community rallying point when communicated correctly.

Key Disadvantages:

- Can be totally impractical, unachievable and thus lacking the meaning to supporting action;
- Often perceived as a "politically driven guesstimate"; and
- Often results in a gap between the target and what emissions reductions are possible (feasible). This "gap" is often referred to as the implementation gap.

Bottom-up Approach

The bottom-up approach to establishing an emissions reduction target consists of setting a target after the completion of a technical analysis of the potential actions that could be undertaken to reduce emissions within a community. This analysis often considers the total potential for reductions, the cost of those reductions, and the overall ability of a community (i.e. jurisdictional authority) to influence the actors within a community sector to reduce emissions. Often this analysis is focused on key sectors such as transportation, commercial and institutional buildings, residential, etc.

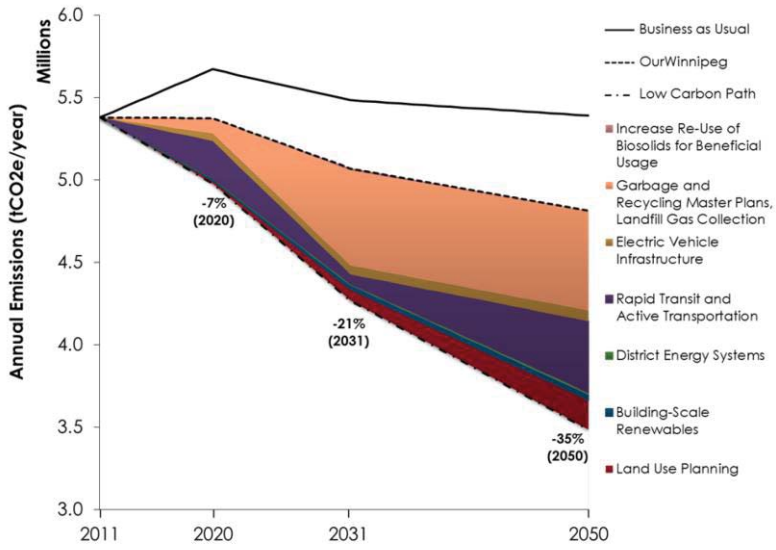
The City of Winnipeg completed its *Community 2011 GHG Inventory and Forecast in 2016* which provided a forecast of the energy and emission reductions that are likely to occur in Winnipeg under three illustrative scenarios: Business as Usual*, OurWinnipeg*, and Low Carbon Path. For example, the analysis under the Low Carbon Path scenario revealed that by 2050 Winnipeg could:

- Achieve a 1,014,000 tonne $C0_2$ equivalent reduction in vehicle emissions used for personal use;
- Achieve a 564,000 tonne $C0_2$ equivalent reduction potential in waste disposal; and
- Keep the overall emissions from building electricity to a 200,000 tonne $C0_2$ equivalent increase, despite population growth of 52%.

In total, the Low Carbon Path Scenario revealed that a comprehensive suite of regulations, policies and programs could achieve a total reduction of about 1.9 million tonne $C0_2$ equivalent by 2050, a reduction of 35 per cent from 2011 levels. This analysis can be used to inform the development of an emissions reduction target.

A common way to communicate this target setting process is through the use of 'wedge' diagrams. Figure 1 illustrates the reduction potential of a variety of climate mitigation actions compared to the Business as Usual Scenario.

Figure 1: Emission Reduction Opportunities, as per Winnipeg's Community 2011 GHG Inventory and Forecast



Key Advantages:

- Offers structure (i.e. the foundations of a plan) on how a community could achieve a target;
- Tends to be based on a more rigorous analysis and often considers the cost of emissions reductions. It is important to note that cost is often measured on a cost per tonne basis, which can provide an important metric for assessing “achievability”; and
- Can offer a goal that is more achievable, which can sometimes accelerate action versus causing an overwhelming scenario and consequent implementation gap.

Key Disadvantages:

- Leads to a more conservative target being set, potentially limiting community creativity and innovation;
- Tends to be a more technical/academic process, and limits opportunities for community engagement and participation; and
- Undertaking the technical analysis required to establish a bottom-up target can be time consuming relative to the top-down approach.

Iterative Approach

The iterative approach blends the top-down and bottom-up approach. The key steps (not necessarily in this order) are to:

- Set a target;
- Analyze all potential actions to reduce greenhouse gas emissions;
- Determine if there is a gap between what the target is set for and what can be accomplished; and
- Re-assess the target with input from stakeholders and either change the target or acknowledge the gap and expect un-forecasted changes to address the gap.

In most contexts, the iterative approach is taken to setting a target and is considered to be “best practice”.

3.3 How Ambitious Should the Target Be?

Although ambitious targets can provide a means for a community to stretch beyond its comfort zone and achieve something truly remarkable, a target that is too ambitious can be disheartening when not achieved. A less ambitious target is more likely to lead to successes and can build momentum in the community. However, if a less ambitious target is seen as the end point and not a progression point, this approach may result in lost opportunities to make significant changes with regards to addressing global climate change.

Balancing ambition and achievability is one of the most challenging and important considerations when setting targets.

The question for the City (and the community) to consider as part of this planning effort is:

- Is it better to aspire and work your way towards an ambitious target, and risk falling short of that target or to achieve an easy target but know that more could have been done to reduce emissions?

3.4 What Type of Target?

Targets can take one of two forms: absolute or intensity-based, and can include sector specific targets.

Absolute Targets

An absolute reduction target represents a commitment to reduce emissions by a certain amount, regardless of changes in economic growth, population and other community characteristics.

It is generally accepted that the use of an absolute target is better aligned with the global community's commitment to reduce greenhouse gas emissions and thereby reduce the risks posed by climate change.

Examples of absolute targets set by other cities include the following:

- City of Portland, Oregon - Reduce local carbon emissions 80 per cent from 1990 levels by 2050, with an interim goal of 40 percent by 2030;[1]
- City of Toronto, Ontario - Reduce greenhouse gas (GHG) emissions by 80 per cent by 2050;[2]
- City of Edmonton, Alberta - Reduce community-based greenhouse gas emissions by 35% by 2035 (compared to 2005 levels);[3]
- City of Minneapolis, Minnesota - Reduce citywide greenhouse gas emissions by 30% by 2025.[4]

Intensity-Based Targets

These targets are based on relating emissions reductions to another metric, such as population or economic output. For example, many communities will establish a per capita target (i.e. we will reduce emissions from 10 tonnes per capita to 5 tonnes per capita over the next 10 years).

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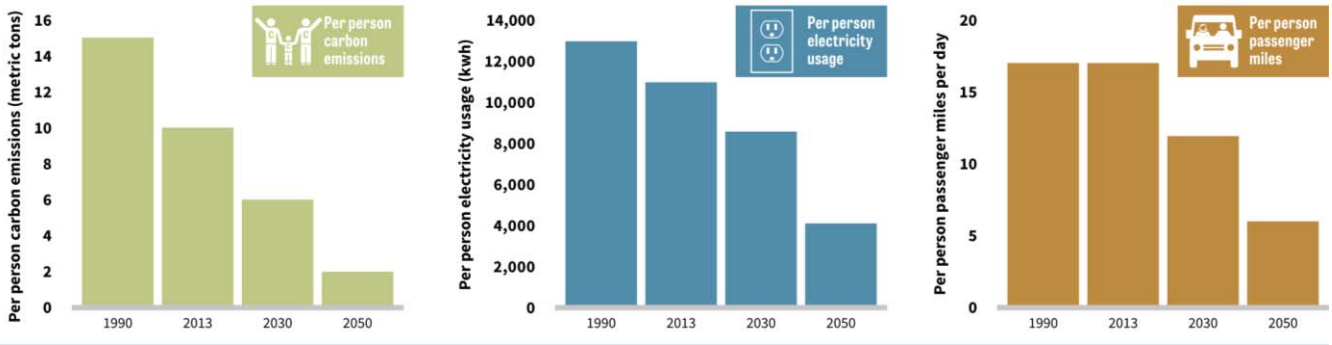
[1] City of Portland Climate Action Plan (2015). https://www.portlandoregon.gov/bps/article/531984
[2] Transform Toronto, City of Toronto (2017). https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=ba07f60f4adaf410VgnVCM10000071d60f89RCRD
[3] Edmonton's Community Energy Transition Strategy, City of Edmonton (2015). https://www.edmonton.ca/city_government/documents/EnergyTransitionStrategy.pdf
[4] Minneapolis Climate Action Plan (2013) http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-113598.pdf

The end result of achieving this target could be an overall increase in greenhouse gas emissions in the community if the total growth in population is significant. In contrast if your community's population and economic growth is stagnant, an intensity-based target can lead to absolute emission reductions.

It is not uncommon to have both absolute and intensity-based targets as they can allow for a community to implement a more comprehensive performance management system.

For example, the City of Portland has broken down the per capita emission reductions required for each person in the community in order to achieve their 2050 target. To achieve the needed per-person carbon emission goals by 2050 residents must meet all of their needs while using 62 per cent less electricity than they do currently and driving 64 per cent fewer miles per day (see Figure 2).

Figure 2: Per person carbon emissions, electricity use and passenger miles in 2030 and 2050. Source: City of Portland Climate Action Plan, page 19. https://www.portlandoregon.gov/bps/article/531984



Sector Specific Targets

» Communities often augment their overall target with sector specific milestones. This practice can add accountability and focus to a community's climate actions.

Examples of sector specific targets set by other cities include the following:

» City of Portland, Oregon:[5]

- Buildings and energy: 47 per cent reduction from 1990 levels;
- Lower carbon electricity: 28 per cent reduction from 1990 levels;
- Land use and transportation: 27 per cent reduction from 1990 levels; and
- Waste disposal: 1 per cent reduction from 1990 levels.

» City of Edmonton, Alberta: [6]

- Energy Efficiency: Reduce energy consumption by 25% per person by 2035 (compared to 2009 levels).

Further, some cities will set sector specific targets specific to each climate action. For example:

» City of Minneapolis, Minnesota:

- Help 75 per cent of Minneapolis homeowners participate in whole-house efficiency retrofit programs by 2025;
- Increase mode share of active transportation to 15 per cent by 2025. [7]

[5] City of Portland Climate Action Plan (2015). https://www.portlandoregon.gov/bps/article/531984
[6] Edmonton's Community Energy Transition Strategy, City of Edmonton (2015). https://www.edmonton.ca/city_government/documents/EnergyTransitionStrategy.pdf
[7] Minneapolis Climate Action Plan (2013) http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-113598.pdf

4 ADVANCING EMISSIONS REDUCTIONS – EXPLORING BEST PRACTICES

Municipalities like the City of Winnipeg can implement a range of tools to directly and indirectly facilitate community-based emissions reductions. These tools should be acknowledged when we explore best practices as they often play a different role and purpose in facilitating emissions reductions within a community. At a broad level these tools can be categorized as follows:

When developing an emissions reduction target, it will be important for the City to consider the following:	
Education and Outreach Initiatives	These tools aim to inform community members and stakeholders about the benefits of acting to reduce greenhouse gas emissions. They typically require community members and stakeholders to voluntarily act through moral suasion and/or informed decision making. Education and outreach initiatives can include programs such as commuter challenges, anti-idling campaigns, buy-local campaigns, classroom activities within schools, social-media campaigns, information tool kits, etc.
Policy, Plans and Regulations (Bylaws)	These tools are used to influence the behavior and actions of community members and stakeholders through voluntary and compulsory policies and regulations. Policies and regulations can include procurement standards, municipal bylaws, building standards, community plans, land use bylaws, and transportation networks. Additionally, they provide guidance to local agencies, stakeholders and community land developers of the desired attributes of the municipality. For example, longer term emission reductions may be achieved through the incorporation of "greening" practices such as high-density/energy efficient buildings, compact and complete communities, and smart active transportation networks.
Incentive Based Programs	The programs aim to influence community members and stakeholders to change behavior to invest in a new technology and/or undertake action to reduce greenhouse gas emissions through a financial incentive or disincentive. For example, they can be designed to offer a financial incentive to enhance residential energy efficiency practices, improve commercial and institutional energy use, encourage waste diversion, and encourage water conservation practices, transit ridership, etc. In contrast, they can be used to penalize inefficient energy use/emissions management practices.
Capital Investments	This tool is when a local government explicitly invests in capital infrastructure that supports the delivery of services to community members and stakeholders, and achieves emissions reductions. These investments can include transit investments, active transportation networks paths, alternative energy investments, energy efficiency initiatives, energy retrofits, water system upgrades and optimization.

Most often, successful municipal climate change initiatives require the use of multiple tools to effectively and efficiently enable the reduction of greenhouse gas emissions. The right combination of tools and actions requires careful planning and assessment to determine which tools are likely to be effective and feasibly implemented.

To determine effectiveness and feasibility of implementation, many variables and factors should be considered. In other words, what works well in one city, may not work in the City of Winnipeg.

Therefore, a best practice in one municipality may differ significantly from a best practice in another.

To accelerate Winnipeg's climate action planning process, a number of "best practices" or "case studies of success" are inventoried by key sectors, including:

- Transportation
- Residential
- Commercial/Institutional Buildings
- Municipal Operations
- Waste Management
- Community-Based Energy Projects

The case studies provide insights into how communities have taken action and achieved 'climate action implementation' rather than simply including the action in their strategy. Thus, the examples offer a range of practical approaches to reducing emissions in each of the sectors. It is expected that the specifics associated with the implementation of each type of program will vary according to Winnipeg's context such as climate, geography, land use and transportation patterns, and political context.

At this time, analysis and reporting of GHG emissions resulting from specific community climate actions is limited. Most local governments do not have a rigorous program to monitor and track individual program efficacy. If success is monitored at all, it is typically communicated by overall or sector specific reductions, the number of actions that have reached implementation, or anecdotal storytelling. As such, these examples are provided for exploratory purposes during the City of Winnipeg's climate action planning process. Where available, results and outcomes are documented.

4.1 Transportation

Local governments like the City of Winnipeg can implement a range of tools that reduce the overall demand for transportation fuels, and therefore decrease greenhouse gas emissions generated within the community.

The examples identified in the following table aim to: reduce the use of personal vehicles, support the use of more efficient vehicles, or public transit.

Tool Type	Municipality	Summary
Education and Outreach Initiatives	Province of Manitoba/City of Winnipeg, Go Manitoba & Commuter Challenge (Green Action Centre)	In 2017, Green Action Centre launched Go Manitoba with support from multiple partners including the City of Winnipeg. GoManitoba's goal is to bring sustainable, healthy commuting options to all Manitobans by helping to facilitate carpools, promote public transit use where available, and match bike and walk mentors. Go Manitoba is a province-wide platform that connects individuals from multiple workplaces, organizations and communities. Workplaces, organizations, or municipalities can create customized subsites which enable the ability for access to commuting data and the ability to offer rewards as encouragement. Every year, the Green Action Centre organizes two of the largest commuting events in Canada. The Jack Frost Challenge happens in February, and the Commuter Challenge happens in June, when approximately 20,000 citizens participate in greener commuting options. In June 2017, 1673 workplaces (19,980 individuals) participated and used sustainable transportation modes to travel 1,621,646 km, avoiding 260,809 kg of CO_2. **Additional information can be found at:** https://www.gomanitoba.ca/Public/PublicPage.aspx?ItemName=AboutGoManitoba&FileType=HTML

Education and Outreach Initiatives	City of Toronto, Smart Commute	Toronto's Smart Commute works with a range of stakeholders and commuters to support more sustainable approaches to commuting within the core of Toronto. The program offers a range of resources to support this objective, including: programs and services, resources guides, trip calculators, workshops and education and outreach campaigns. **Additional information can be found at:** http://smartcommute.ca/toronto-central/
Policy, Plans and Regulations (Bylaws)	City of Kamloops, Travel Smart	TravelSmart is an award winning, broad-based program which integrates land use and transportation system planning. The TravelSmart plan establishes a direction for developing a multi-modal transportation system and is instrumental in guiding the preferred growth management strategy for the city's Official Community Plan. **Additional information can be found at:** https://www.kamloops.ca/city-services/transit-and-transportation/transportation-planning
Programs	City of Washington, D.C., Community Partners Program, Capital Bikeshare	In 2016, the Washington, D.C. public bike-sharing program, Capital Bikeshare, launched its Community Partners Program, designed to put low-cost bike- share memberships into the hands of those most in need of affordable transportation options. The Community Partners Program membership is available to local non-profits, government agencies, and social services organizations, enabling them to offer a steeply discounted annual membership to clients receiving social benefits, allowing equal access to safe, healthy, and sustainable transport. In addition to reducing membership costs, the program equips individuals in traditionally underserved communities with resources, including workshops to learn how to bike. As of June 2016, five large social services organizations had signed on as partners and are enrolling their clients to become Capital Bikeshare members, showcasing how a city's transportation department and social services can work together to address social needs and achieve positive environmental results. **Additional information can be found at:** http://www.c40.org/case_studies/cities100-washington-d-c-low-cost-bike-share-memberships-for-low-income-earners
Programs / Capital Investments	City of Vancouver, Electric Vehicle Ecosystem	The City of Vancouver developed the "Electric Vehicle Ecosystem Strategy" in 2016. This strategy aims to create flexible options for charging vehicles, which is integral to achieving the goal of 100% renewably powered transportation before 2050. **Additional information can be found at:** http://vancouver.ca/streets-transportation/electric-vehicles.aspx
Programs / Capital Investments	City of Oslo, Electric Vehicle Program	The City of Oslo has engaged in a number of programs to increase the feasibility of electric vehicles. Among these initiatives are on-street charging points for those without personal parking. The city reached 900 charging points by 2014. In addition to the added public charging points, Oslo provides supports for establishing private charging points in parking garages, shopping centers, apartment buildings, and offices funded up to 60%. In addition to these enabling programs, Oslo and Norway have other benefits including free passes on toll roads, use of bus and taxi lanes, and free parking in select spaces. Despite some success, the program encountered equity challenges since the incentives primarily benefited wealthy individuals who were already in a position to purchase a new EV. **Additional information can be found at:** http://www.c40.org/case_studies/the-electric-vehicle-capital-of-the-world

Capital Investments	City of Calgary, Centre City Cycle Track Pilot	In 2015, The City of Calgary introduced a downtown cycle track pilot project with 6.5 km of protected bicycle lanes. The City recorded 1.2 million cycle trips on the network between June 18, 2015 and November 20, 2016. During the pilot the City made over 100 adjustments to improve traffic, loading and parking during the pilot. Travel and wait times for vehicles along key corridors had minimal interruptions. City Council has since decided to make the Centre City cycle track network permanent. **Additional information can be found at:** http://www.calgary.ca/Transportation/TP/Documents/cycling/City%20Centre%20cycle%20track/cycle-track-summary-report-nov-2016.pdf
Capital Investments	City of Victoria, #biketoria	The City of Victoria is developing a comprehensive network of protected cycling infrastructure. When complete, the network will encourage/facilitate a range of people to ride, skate and rollerblade throughout the City. **Additional information can be found at:** http://www.victoria.ca/EN/main/residents/transportation/cycling.html

4.2 Residential

Cities like Winnipeg can implement a range of tools that support reductions in energy use and greenhouse gas emissions within residential homes.

Local governments can exert significant influence in reducing residential energy use/emissions – over the long term – by encouraging higher density development, which not only influences the overall transportation network of the City, but often times will result in smaller dwelling places which, in turn, results in less energy consumption. Such outcomes can be supported through community plans and land use bylaws.

However, local governments like the City of Winnipeg have limited influence to dramatically shift energy use and emissions patterns. Those tools which can be used must generally focus on empowering and incenting homeowners to take action; since the legislative authority of municipal governments in Canada to regulate change at the household level is limited in scope.

Some progressive examples of how Cities are working to reduce emissions within the residential sector are summarized below.

Tool Type	Municipality	Summary
Education and Outreach Initiatives	City of Edmonton, Energy Efficiency and Conservation in Your Home	The City of Edmonton has developed an extensive energy efficiency initiative that aims provide home owners significant resources to support residential home energy improvements. This includes a number of resource guides, information resources, and toolkits to perform basic home audits, including: Change Habits for Climate Guide: provides a variety of lifestyle tips on how to green every day; Green Home Energy Toolkit: Distributed by the Edmonton Public Library to help citizens gain a better understanding of energy use in their homes; Change Homes for Climate Guide: Provides tips about energy savings for citizens buying, selling, or renovating a home. **Additional information can be found at:** https://www.edmonton.ca/city_government/environmental_stewardship/energy-efficiency-and-conservation-in-your-home.aspx
Education, and Outreach Initiatives	Smart Green Apartments Programme, Sydney, Australia	This voluntary program had professional auditors provide participating buildings with free energy and water use assessments as well as analyses of waste and recycling practices. Building owners or managers were provided with an action plan with retrofitting recommendations complete with a 'business case' breaking down capital costs, projected savings, payback periods, and applicable government rebates/programs. Results: 37% of recommendations made on sustainability had been implemented by 2015 Sharing of learnings from an initial group of 30 buildings to a network of over 100 apartment buildings via targeted communications and workshops. **Additional information can be found at:** http://www.cityofsydney.nsw.gov.au/live/residents/sustainable-city-living/sustainable-apartments/smart-green-apartments

Policy, Plans and Regulations (Bylaws)	Government of BC, Solar Ready By-Law, Numerous communities	The Government of BC has developed a "solar hot water ready regulation" that enables local governments within the Province to implement a solar ready by-law that requires new construction to help home owners cost-effectively install solar projects. Over 30 BC municipalities have adopted a municipal solar ready by-law. **Additional information can be found at:** https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/the-codes/other-regulations/solar-hot-water-ready
Policy, Plans and Regulations (Bylaws)	Government of BC, BC Energy Step Code	In April 2017, the Province of British Columbia adopted the BC Energy Step Code as regulation. It provides an incremental and consistent approach to achieving more energy-efficient buildings that go beyond the requirements of the base BC Building Code. The Step Code has been designed to help both government and industry chart a course to a future in which all new construction across the province is "net-zero energy ready" by 2032. Local governments who choose to pursue establishing the BC Energy Step Code in their communities may select from a broad spectrum of policy tools including tools that raise awareness, provide incentives, institute bylaw requirements, remove barriers to energy efficient building, and/or demonstrate leadership. Each jurisdiction will need to select the tools most suitable to its community. **Additional information can be found at:** https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/construction-industry/building-codes-and-standards/guides/bcenergystepcode_guide_v1.pdf
Policy, Plans and Regulations (Bylaws)	City of Portland, Healthy Connected Neighbourhood Strategy	The Healthy Connected Neighbourhood Strategy aims to accelerate a shift to active transportation modes (walking, cycling, etc.) while also improving neighbourhood livability. The strategy involves "20-minute Neighbourhoods" which are walkable places with concentrations of neighbourhood businesses, community services, housing, and public gathering places that provide residents with options to live a healthy, active lifestyle. These places would be linked with convenient, high-quality transit, and would be places where getting around by walking, biking or wheelchair is safe and pleasant. Analysis of Portland's existing neighbourhoods has served to evaluate City progress to Healthy Connected City goals, and to identify areas for investment. The Plan was developed to prioritize and align City budget decisions, rather than require additional funding. **Additional information can be found at:** https://www.portlandoregon.gov/bps/article/353238?archive=2011-06
Programs	Manitoba Hydro, Power Smart	The Residential Power Smart program offers a variety of incentives to improve energy efficiency. This includes rebates, as well as low interest loans for home upgrades and a whole home approach and incentive program for building new. Financing is also available for alternative energy sources. Power Smart offers on-bill financing and offers an Affordable Energy Program which qualifies low-income households for free upgrades. The Power Smart programs have invested more than $643 million in incentives, information, and market-based programs for residential, commercial, and industrial customers since 1989. By the end of 2015–16, Power Smart programs have achieved 3,018 GWh and 820 MW in electricity savings, and 114 million cubic metres in natural gas savings. (Note these figures include commercial and industrial investment and reductions). **Additional information can be found at:** https://www.hydro.mb.ca/your_home/savings_home.shtml https://www.hydro.mb.ca/your_home/loans_financing/index.shtml

Programs	City of Guelph, Guelph Energy Efficiency Retrofit Strategy (GEERS)	This program is used to encourage home owners to improve the energy efficiency of their homes by offering low interest loans which can be paid for via their property tax bills. Homeowners can work with a contractor of their choice to choose any number of possible retrofits. The program is in its first year so there are no results available. However, a Community Survey conducted prior to the launch of the program indicated it could have widespread uptake. **Additional information can be found at:** http://guelph.ca/plans-and-strategies/community-energy-initiative/geers/
Programs	City of Nelson, EcoSave Energy Retrofits Program	Similar to Guelph, the City of Nelson has adopted a low interest, loan program for local residents to complete energy efficiency upgrades. However, this program is unique in that it offers residents an on-bill financing solution, therefore reducing the up-front barriers to action. **Additional information can be found at:** http://www.nelson.ca/222/EcoSave-Energy-Retrofits-Program
Capital Investment	Town of Okotoks, Drakes Landing	The Drake Landing Solar Community (Okotoks) has incorporated photovoltaic and passive solar technologies into the development of each house in the solar community. As the project facilitator, the Town of Okotoks helped coordinate and ensure project partners stayed on track with the complex project. **Additional information can be found at:** http://www.okotoks.ca/sustainability/your-environment/energy/drake-landing-solar-community

4.3 Commercial and Institutional Buildings

Commercial and institutional buildings require significant amounts of energy for heating, cooling and electricity. This energy demand makes them a major contributor to greenhouse gas emissions within communities like Winnipeg. This is especially true for buildings that are older and have inefficient heating and cooling systems and appliances. Commercial and institutional buildings include establishments such as retail stores, public administration offices, warehouses, hospitals and schools.

Most of the energy required to operate a commercial and institutional building is used to heat and cool the building and power appliances and office equipment. Some leading examples of how municipalities have advanced reductions in this sector are summarized in the following table.

Tool Type	Municipality	Summary
Education and Outreach Initiatives	City of Kingston, Green Buildings	The City has developed a series of resources to inform builders of the advantages of enhancing the overall energy efficiency of new construction, relative to the current provincial building code standard. These resources aim to encourage action and do not incent or regulate a specific standard. Additional information can be found at: https://www.cityofkingston.ca/residents/environment-sustainability/climate-change-energy/green-buildings
Policy, Plans and Regulations (Bylaws)	City of Calgary, Sustainable Building Policy	The City of Calgary's Sustainable Building Policy includes a Calgary Building Permit Bylaw that enables the City to reduce City development fees for all private building projects that pursue LEED or Built Green Certification. Additional information can be found at: http://www.calgary.ca/CS/IIS/Pages/About-land-information/sustainable-building-policy.aspx
Policy, Plans and Regulations (Bylaws)	City of Toronto, Green Roof Bylaw	The City of Toronto Green Roof Bylaw requires all new developments over 2,000 square metres to include a green roof with coverage of available roof space ranging from 20 to 60 per cent. The bylaw applies to all new residential, commercial and institutional building permit applications and to all new industrial development applications after. Additional information can be found at: https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/green-roofs/
Policy, Plans and Regulations (Bylaws)	City of Maple Ridge, Amenity Zoning	In response to Council's The Community Amenity Contribution Program addresses the City's commitment to provide a range of amenities to residents, including affordable housing, special needs housing. Contribute rates range from $3100 to $5100 depending on the type of dwelling unit, with the funds being put towards a civic facility, public art, park or trail construction, heritage conservation and other amenities. District along with senior provincial and federal government partners and TransLink, invested nearly $100 million in facilities and infrastructure to support increased density development in the downtown area through the Downtown Enhancement Project. This investment was coupled with the Town Centre Investment Incentives Program (TCIIP) which was launched on January 1, 2011, which included a range of incentives, including density bonusing. Additional information can be found at: https://www.mapleridge.ca/DocumentCenter/View/893

Programs	BC Hydro, Power Smart, Commercial Building Program & Manitoba Hydro, Power Smart Commercial Program	BC Hydro offers a range of incentive programs to support energy efficiency improvements within larger commercial/institutional buildings. This includes energy management assessments, and incentives to support action for existing and new construction. **Additional information can be found at**: https://www.bchydro.com/powersmart/business/programs.html This program is similar to Manitoba Hydro's Power Smart commercial program that offers a range of incentives, rebates and loans that can be used to accelerate energy savings and greenhouse gas reductions. Existing buildings have customized program incentives which support a wide variety of upgrades. These include energy management assessments, and incentives to support action for existing and new construction. New buildings are supported with a whole buildings approach, through integrated design, energy modelling, building commissioning, and energy management. New buildings are offered a $2 per square foot incentive if they can provide energy savings 20% or better beyond code requirements (and less incentive if they are meeting a lower energy savings). **An inventory of these programs can be found at:** http://www.hydro.mb.ca/your_business/savings_business.shtml
Capital Investments	City of Surrey, Surrey City Energy	The City has developed an extensive, municipally owned district energy system that supplies residential, commercial and institutional buildings in the City Centre with heat and hot water. **Additional information can be found at:** http://www.surrey.ca/community/3475.aspx

4.4 Municipal Corporate Operations

Local governments operate a significant portion of public infrastructure within a community. The buildings, fleets, and operations of a city offer a critical opportunity to demonstrate leadership. “Walking the talk” and leading by example are important for building trust amongst industry and citizens to undertake climate actions. Actions led by the City offer an opportunity for community members and industry to learn from the experiences of the municipality. Therefore, it is important to identify municipal corporate emission reduction opportunities as these actions are linked to, and will result in overall community greenhouse gas emissions reductions.

Some examples of ways Cities are working to reduce energy use and emissions are summarized in the following table:

Tool Type	Municipality	Summary
Education and Outreach Initiatives	City of Toronto, Consolidated Green Fleet Plan	The City of Toronto has developed a comprehensive fleet management plan that includes a number of educational and outreach based efforts to support more efficient driving practices, maintenance practices, and idling minimization strategies. These efforts complement purchasing practices for the City’s fleet. **Additional information can be found at:** https://web.toronto.ca/wp-content/uploads/2017/08/95ef-consolidated-Green-Fleet-Plan.pdf
Education and Outreach Initiatives	City of Winnipeg, Green Fleet Plan	The City of Winnipeg approved the Green Fleet Plan in 2011 with the goal of reducing the environmental impact of the City's vehicle and equipment fleet by reducing associated fuel consumption and emissions while still maintaining (or increasing) the level of service offered to citizens of Winnipeg. **Additional information can be found at:** http://www.winnipeg.ca/Sustainability/documents/SustainableTransportation/Green-Fleet-Plan.pdf
Policy, Plans and Regulations (Bylaws)	City of Edmonton Sustainable Building Policy for the Construction of Corporate Buildings	Since 2008, all new City-owned buildings and major renovations have been built to a LEED Silver standard as a minimum, and are formally LEED certified. The City also committed to constructing their buildings to be 30% more energy efficient than the current standard, which is the Model National Energy Code. **Additional details can be found at:** https://www.edmonton.ca/city_government/environmental_stewardship/green-buildings-communities.aspx
Programs	Metro Vancouver, Internal Carbon Price Policy to Reduce Corporate Emissions	In 2017, Metro Vancouver implemented a policy that requires the value of GHG emissions be included when evaluating new project options, by incorporating an internal carbon price of $150/tonne into decision-making processes. This policy applies to capital projects, vehicle purchases, and carbon reduction programs. **Additional information can be found at:** http://www.metrovancouver.org/metroupdate/issue-34/493/Internal%20Carbon%20Price%20Policy%20to%20reduce%20corporate%20emissions
Programs	City of Dawson Creek, Carbon Fund	The City of Dawson Creek established a carbon fund that puts a price on corporate carbon. The funds are then made available to implement corporate and community emission reduction projects, with corporate emission reduction projects given first priority. These reductions are intended to help reduce the number of offsets the City purchases each year to achieve carbon neutrality. **Additional information can be found at:** https://dawsoncreek.civicweb.net/FileStorage/F61402510CC64494829636365BE5FDCC-WorkspaceCarbon%20Fund%20Policy.pdf

Programs	City of Saanich, Revolving Energy Fund	In 2007, Saanich developed the innovative Carbon Fund, a first in North America, providing a consistent funding stream for low-carbon municipal projects. Each department in the municipality contributes to the fund based on their carbon footprint. Funds are allocated to implement new greenhouse gas reducing initiatives within Saanich operations. The Fund is then used to implement new greenhouse gas reducing initiatives within Saanich operations. Saanich has completed activities related to: Municipal building heating and lighting retrofits Efficient and low-carbon vehicles; and Greener garbage collection **Additional information can be found at:** http://www.saanich.ca/EN/main/community/sustainable-saanich/climate-change-energy/leading-by-example.html
Programs	Town of Banff, Environmental Reserve Fund	The Town of Banff directs the fees collected by the Town from utility providers (for the right to use the space under Banff streets and sidewalks) towards an environmental reserve, rather than general revenues. Banff has allocated funds from the reserve to purchase and install LED streetlights, waterless urinals, hybrid buses and solar installations on public buildings. They have also used these funds to pay for energy efficiency rebates to citizens on fridges, toilets, hot water systems furnaces and other appliances. **Additional information can be found at:** http://www.greenenergyfutures.ca/episode/banff-feed-tariff-first-canada
Programs	Harrison Hot Spring, Carbon Neutrality	In 2011, the Village of Harrison Hot Springs announced officially that it intended to become the first carbon-neutral local government in BC. In order to do so, the municipality worked to reduce corporate greenhouse gas emissions while balancing the remaining emissions through the purchase of qualified GHG offsets so that the municipal corporate operations result in a net-zero carbon footprint. GHG credits do not need to be purchased within the province, to allow municipalities located in provinces with fewer offset opportunities to still purchase credits. **Additional information can be found at:** http://www.toolkit.bc.ca/News/Carbon-Neutral-Harrison-Hot-Springs-Council-Leads-Example
Capital Investments	Diverse communities, Municipal waste and wastewater energy efficiency investments	Many small, medium and large communities have made significant capital investments into upgrading the energy performance of water and wastewater infrastructure. Often these investments are directed towards installation of high-performing pumps, blowers and other equipment upgrades, and the use of more passive treatment processes. The City of Fort St. John developed a Micro Hydro Project that utilizes treated wastewater to provide renewable power. **Additional information can be found at:** ttp://www.fortstjohn.ca/sites/default/files/public_notice/Micro%20Hydro%20Project%20-%20Backgrounder.pdf

4.5 Waste Management

Municipal landfills are often a major source of local greenhouse gas emissions. The emissions from municipal landfills are primarily a result of decomposing organic waste, which creates methane gases. Therefore, better waste management practices can have a significant impact on a municipality's greenhouse gas emissions profile.

Tool Type	Municipality	Summary
Education and Outreach Initiatives	City of Portland, Be Resourceful Campaign	Portland's ongoing Be Resourceful campaign intends to connect residents to the resources and information required to buy-smart, and to increase sharing, reuse and repair. So far, it has reached 18,000 event contacts; recycling blog posts have reached 35,000 readers; other blogs have achieved 17,000 page views; book ads have had over 70,000 readers; and editions of a special magazine were distributed to 178,000 households. **Additional information can be found at:** https://www.portlandoregon.gov/bps/article/313216
Policy, Plans and Regulations (Bylaws)	City of San Jose, California, Pay-As-You-Throw Programs	San Jose's Pay-As-You-Throw (PAYT) program has been in place since 1993. Through this program residents are provided with a choice of bin size, with an aggressive pricing strategy (bin options at implementation were 32, 64, 92, and 128 gallon carts). Residents can also purchase extra one-time-use 32 gallon pickup stickers to put on extra bags. San Jose has since removed the 128 gallon cart option. San Jose has also committed to a zero-waste strategy and continues to develop and implement innovative programs. **Additional information can be found at:** https://archive.epa.gov/wastes/conserve/tools/payt/web/html/ssanjose.html
Policy, Plans and Regulations (Bylaws)	City of Vancouver, Construction and Demolition Waste Reduction	The City of Vancouver has developed plans, and implemented bylaws with the aim of reducing construction and demolition (C&D) waste. The City of Vancouver has indicated increasing diversion of wood waste from landfill and incineration is a priority action. One major action in pursuit of the goal to reduce C&D waste has been the implementation of the Green Demolition Program. This program requires 75% reuse and recycling for non-hazardous demolition waste in one and two family homes constructed prior to 1940, with a 90% requirement for those homes deemed to be "character homes." This program is enforced through a reporting mechanism tracking waste disposal, and using refundable deposits of approximately $15,000. City staff has recommended expanding this program gradually to include newer homes. **Additional information can be found at:** http://council.vancouver.ca/20151216/documents/cfsc5.pdf
Programs	Region/City of Waterloo, Green Bin and Green Cart Organics Programs	Waterloo has been a long-time Canadian leader in waste diversion. With the introduction of green bin and organics diversion programs. From the success of Waterloo's programs many other local communities across Canada had implemented similar initiatives. **Additional information can be found at:** http://www.regionofwaterloo.ca/en/aboutTheEnvironment/green- bin-and-green -cart-organics-programs.asp

Capital Investments	City of Edmonton, Landfill Gas Capture Project	Since 1992, the City of Edmonton's Clover Bar Landfill (now owned by Capital Power) has been mined to produce electricity from landfill gas. Enough methane gas is captured each year to satisfy the electricity demands of approximately 4,600 homes. **Additional information can be found at:** https://www.edmonton.ca/programs_services/garbage_waste/landfill-gas-recovery.aspx

4.6 Community-Based Renewable Energy

There is a growing recognition that municipalities can play a significant role in supporting the development of renewable energy supplies. Many local governments across Canada are generating renewable energy at their own facilities and working with local businesses and residents to help them do the same. By enabling renewable energy opportunities at the community level, local governments, business and residents can capture energy from sunlight, wind, water, and other renewable energy sources. Many community-based projects are highlighted at the following link: https://www.bullfrogpower.com/green-energy/projects-and-sources/

Some exciting examples that are of relevance to Winnipeg are offered in the following table:

Tool	Municipality	Summary
Education and Outreach Initiatives	Town of Banff, Solar Program	The Town of Banff has embarked on an extensive solar installation effort. This effort traditionally focused on municipal buildings; providing energy production data to the public. It has been used to build support for the implementation of a solar incentive program that aims to increase the use of solar PV within residential homes. **Additional information can be found at:** https://banff.ca/solar
Policy, Plans and Regulations (Bylaws)/Capital Investment	City of Edmonton, District Energy in Blatchford	Blatchford is a new mixed-use urban community in Edmonton, Alberta on the former City Centre Airport Lands. On these lands the City is developing a District Energy Sharing System. It is similar to a traditional district energy system in that energy from a centralized source is distributed to multiple buildings. While traditional systems deliver high temperature water that can be used directly for heating buildings, a DESS distributes ambient (room temperature) water. The ambient heat is then upgraded by heat pumps, which provide both heating and cooling. One of the main advantages of a DESS is that it allows for greater flexibility to directly tie in renewable energy sources. All buildings will be required to tie into this system. **Additional information can be found at:** https://www.edmonton.ca/city_government/documents/Blatchford_booklet_DESS_overview_final_Sept_2015.pdf
Programs	City of Medicine Hat, HAT Smart	Medicine Hat's HAT Smart program offers financial incentives to residential and commercial building owners to install solar panels and solar heating systems, upgrade attic insulation, and others. **Additional Information can be found at:** https://www.medicinehat.ca/government/departments/utility-sustainability/hat-smart
Programs	The City of Calgary, Ride the Wind!	The City of Calgary CTrain: *Ride the Wind!* is a program where all of Calgary Transit's CTrains are powered entirely by wind-generated electricity, making the CTrain 100 per cent emissions free. **Additional information can be found at:** http://www.greenenergyfutures.ca/episode/c-train-success-nenshi-calgary
Programs	Newfoundland and Labrador, Energy Efficiency Loan Program	The Energy Efficiency Loan Program will offer low interest loans towards the purchase and installation of insulation and heat pumps. The program will be implemented by the Department of Municipal Affairs and Environment in partnership with Newfoundland Power and Newfoundland and Labrador Hydro, through takeCHARGE. **Additional information can be found at:** https://takechargenl.ca/residential/tips-products/heat-pumps/

Capital Investments	City of Fort St. John, Micro-Hydro Project	The City of Fort St. John developed a small hydropower project that utilizes treated wastewater to produce clean, renewable power. This project utilized existing infrastructure and requires minimal environmental footprint. **Additional information can be found at:** http://www.fortstjohn.ca/sites/default/files/public_notice/Micro%20Hydro%20Project%20-%20Backgrounder.pdf
Capital Investments	Providence College, Otterburne, Manitoba	Providence College used a provincial grant through the CLER (Community Led Emissions Reductions) program to replace their natural gas unit with a Biomass District Heating System. This reduced the college's emissions by two thirds and combined with their geothermal system, makes their building carbon neutral. **Additional information can be found at:** http://news.gov.mb.ca/news/index.html?item=12503

4.7 Urban Agriculture and Urban Forestry

Two other emissions reductions opportunities that are important to mention are urban forestry programs and urban agriculture. While it would be challenging to measure the emissions reductions from these two types of programs, they can benefit a community's overall climate mitigation program. The case studies below offer a small sample of possible opportunities.

Tool	Municipality	Summary
Policy, Plans and Regulations (Bylaws)	Michigan Urban Farming Initiative, City of Detroit,	The Michigan Urban Farming Initiative (MUFI) is debuting America's first sustainable urban agrihood; an alternative neighborhood growth model in Detroit's lower North End that positions agriculture as the centerpiece of a mixed-use urban development. The site totals about three acres and is located in a neighborhood among vacant land, occupied and abandoned homes, MUFI's urban agrihood features a bustling two-acre urban garden, a 200-tree fruit orchard, a children's sensory garden, and more. Annually, the urban garden provides fresh, free produce to about 2,000 households within two square miles of the farm. The development will also incorporate a public market, commercial kitchen, and affordable housing. **Additional information can be found at:** http://www.miufi.org/america-s-first-urban-agrihood
Programs	City of Seattle, Neighbourhood P-Patches	The City of Seattle has developed a Food Action Plan which includes a strong emphasis on growing food locally. In addition, Seattle has a long history of supporting neighborhood P-Patches, or community garden plots open to the public throughout the city. A portion of every P-Patch is dedicated to growing food for local food banks and other feeding programs. **Additional information can be found at:** http://www.seattle.gov/neighborhoods/programs-and-services/p-patch-community-gardening
Programs	City of Kelowna, NeighbourWoods	The City of Kelowna's Neighbourwoods program funds tree planting on private property. Since 2010, residents have purchased more than 3,000 discounted trees to plant on their properties. **Additional information can be found at:** https://www.kelowna.ca/parks-recreation/urban-trees-wildlife/neighbourwoods
Capital Investment	Town of Gibsons, Public Market	The public market is a gathering place that promotes learning and making healthy lifestyle choice. The facility is intended to connect citizens and visitors with the local people who grow, harvest and prepare food. The public market sets the stage for rich conversations and learning about healthy nutrition and food sources–including the exploration of Howe Sound through the Nicholas Sonntag Marine Education Centre. As a social enterprise, the Market will also incorporate a commercial kitchen. The phased opening for the center begin in Summer 2017. **Additional information can be found at:** http://gibsonspublicmarket.com/

APPENDIX C

Engagement Process and Public Input Reports

Winnipeg

Winnipeg's Climate Action Plan

Planning for Climate Change • Acting for People

HELP CREATE A ROAD MAP FOR CLIMATE CHANGE ACTION

Kick-Off Event Engagement Summary



1.0 Introduction 2
2.0 Kick-Off Engagement Outcomes 2
3.0 Recording Engagement Feedback 2
4.0 Kick-Off Event By The Numbers 2
5.0 Engagement Analysis Methodology 3
6.0 Engagement Results Summary 3
Q1: What's My Climate Story? 3
Q2: What's Winnipeg's Climate Story? 4
Q3: My Climate Vision For Winnipeg Is: 5
Q4: What Actions Should The City Take To Reduce Ghg Emissions From: Buildings, Transportation, And Waste Sectors? 7
Q5: Are There Actions You Will Undertake As A Winnipeg Resident? 11
7.0 Kick-Off Event Engagement Feedback 13
Climate Stories + Vision 13

Subject:	**City of Winnipeg Climate Action Plan Kick-Off Event (public engagement)**
Date:	December 11, 2017
Event Date:	November 10, 2017
Location:	University of Winnipeg, MB
Prepared By:	Urban Systems

1.0 Introduction

Recognizing that climate change is a serious global environmental problem, the City of Winnipeg is moving forward to develop a community climate action plan, an initiative called the *Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People*.

- To kick off the project, Winnipeg residents were invited to a public engagement session to help define a vision for climate action in Winnipeg. On November 10, 2017, residents participated in an evening of engagement that included local art, music, community storytellers, and round table activities to provide input on *Winnipeg's Climate Action Plan*. Their thoughts, ideas, and feedback will help set the City's priorities and shape *Winnipeg's Climate Action Plan: Planning for Climate Change. Acting for People*.

2.0 Kick-Off Engagement Outcomes

- Participants learned about the City's Climate Action Plan and were informed about major milestones in the project, the public engagement process, and how they can be involved throughout.
- Participants heard from three community members sharing stories about climate actions. The intent of these community members was to introduce the participants to a range of possibilities about Winnipeg's climate vision, targets and actions.
- Attendees discussed and reflected on both their own and Winnipeg's climate story. These discussions were intended as a starting point for thinking about their own climate vision. Participants were then asked to brainstorm the vision and greenhouse gas emission targets associated with the City's climate mitigation efforts.

3.0 Recording Engagement Feedback

Participant feedback was collected on an engagement worksheet. See Section 7.0 for a copy of the worksheet.

4.0 Kick-Off Event by The Numbers

- 69 event attendees
- 109 registrants on Eventbrite
- 63 engagement worksheets (see Section 7.0 for all engagement feedback)

5.0 Engagement Analysis Methodology

Open-Ended Questions

For the open-ended questions where answer choices were not provided, responses were categorized into themes that emerged. Some responses contained multiple themes, while others only one. After each response was categorized into themes, the number of responses that correlated to each theme was then totalled and divided by the total number of responses for that question to provide a percentage. Responses that did not fit into a theme were classified as 'other.' All full written responses collected in the workbooks are provided in Section 7.0.

Note that percentages were rounded to the nearest whole number.

6.0 Engagement Results Summary

Kick-off event participants were asked to discuss a total of five questions throughout the evening. Below is a summary of the questions and responses.

Q1: WHAT'S MY CLIMATE STORY?

Participants were asked to discuss and write down their own individual climate stories. This exercise was preceded by three community storytellers who shared their own climate stories on stage to inspire engagement responses. Winnipeg residents shared what environmentally-responsible actions they currently take to help reduce GHG emissions. The following themes emerged:

Theme 1: Transportation – Public Transit & Active Transpiration

Many participants indicated that they are already trying to make smart, environmentally friendly transportation choices – whether it be through public or active transportation.

WHAT YOU SAID

- I bike/use public transit 75% of the time. I want it to be more – but need more family friendly infrastructure to be able to access these all the time.
- I rely on my feet, my bike or transit to travel throughout the city.
- My wife and I don't own a car. Cycling has been my primary transport for forty years. Cut back my international and domestic flights to only those that are necessary.
- I'm a half-time cyclist with concerns about safety, security (theft even with a good lock), creature comforts, municipal planning (piecemeal but there's some prospect that this is slowly changing). I've spent 3 years during my son's toddler period walking/jogging him several kilometres daily to daycare. When I drive, I restrict my idle time and travel in a car using driving habits that will yield less than 5.5L/100km highway.

Theme 2: Lifestyle

Many participants indicated that they have adopted a variety of lifestyle choices that support eco-conscious living. Some of these lifestyle choices include composting, recycling, minimizing plastic waste, and eating local.

WHAT YOU SAID

- Recycle, limit light use and heating/air conditioning, avoid buying water bottles, unplug electronics when not in use.
- I recycle, eat organic food, work in the organic industry, bike to work in the summer, shop at farmer's markets (local food) and grow herbs.
- I recycle (know what the right things to recycle are), donate clothes/items, buy responsibly to try and shift the market demand for more environmental things. People should keep their actions in mind – how are you affecting the community locally and globally?
- Recycle, compost, cycle recreationally, minimize packaging, use cloth shopping bags, develop better transit and use it, use refillable water bottles.

Theme 3: Occupation & Education

Many participants indicated that their careers and studies focus on sustainability. In addition, many indicate that they are dedicated to sharing knowledge about climate change, whether it be in casual conversation or through organized groups.

WHAT YOU SAID

- More recently getting into recycling, pushing to get a program going in my community
- I try to be conscious and recycle and educate people when I can. I'm doing a Masters degree in sustainable energy engineering and dedicating my life to climate change and the reduction of GHGs.
- My story is of being too quiet for too long. The climate crisis cannot afford bystanders. So I am committing to getting engaged, speaking up, demanding more, and helping take action. When my story ends, I want it to be on the right side of history.
- I'm a UW biology student working on sustainability issues on campus; It will be good to see avenues for larger scale engagement.

Q2: WHAT'S WINNIPEG'S CLIMATE STORY?

Participants were asked to discuss and write down Winnipeg's current climate story. In general, the public was concerned about Winnipeg's current efforts to address the impacts of a changing climate, but were inspired by conversations like the ones happening through the new Climate Action Plan. From their input, the following themes emerged:

Theme 1: Slow to Act

Many participants indicated that Winnipeg is slow in making responsible climate change decisions.

WHAT YOU SAID

- To date, inaction. I REALLY hope that changes and tonight brings me hope. I hope we become a leader in addressing social issues arising around energy usage. I want to see citizens informed and hopefully engaged. If Winnipeg is doing great things, we know little about it.
- Winnipeg is not up to speed on climate. The time it takes to make decisions is way too long. People are not informed of actions that can be taken to reduce their carbon footprint.
- I think Winnipeg has made some small valid efforts towards sustainability and climate action but it doesn't seem to be enough. It took 20 years to get where we are(?). Why aren't we moving quicker – even if it's only low hanging fruit like promoting composting, energy efficiency or active transportation? We need more!

- Winnipeg has not facilitated climate action; they've in many ways made things harder for residents (Under-funded transit, composting, red tape associated with local foods) and where progress has been made (e.g., rapid transit, bike lanes, composting) it's been way too slow.

Theme 2: Small Steps in the Right Direction

Tying into the theme above, although some respondents indicated that Winnipeg is too slow to act, many participants responded positively to current City undertakings. They did, however, follow their positive statements with ones that challenged the City to act.

WHAT YOU SAID

- At an institutional level and with new developments/city buildings there have been some great innovations but there's a lack of cohesiveness or whole community action in Winnipeg. The City is talking and open to discussion but it seems we are far behind other cities in terms of sustainability.
- Winnipeg has lots of policy language that is great but it is a challenge to put those visions and objectives into serious action.
- Winnipeg's intentions are great, but the budgeting cycle and lack of accountability is a concern.
- Winnipeg is taking proper actions to mitigate climate change but the steps towards these plans are slow and need a proper timeline to complete.

Theme 3: Car-Centric Development

Many participants indicated that past and current City development has been with a car-centric focus and planning decisions have not traditionally been made around public or active transportation and/or densification.

WHAT YOU SAID

- The City seems to want to try and appeal to drivers. There is a contrast of very poor communities with limited options against affluent suburban communities that shop a lot.
- Winnipeg appears to put roads and potholes above everything, when making driving as inconvenient as possible is perhaps a more useful goal.
- Winnipeg continues to expand our suburban 'driving' neighbourhoods which doesn't encourage human powered neighbourhoods.
- Winnipeg needs to recover from decades of short-sighted planning (i.e., urban sprawl). Appropriate responses may include densification, enabling local food production, easier access to transit and associated dependable service.

Q3: MY CLIMATE VISION FOR WINNIPEG IS:

Event attendees were asked to provide their thoughts on Winnipeg's climate vision. Although more actions were provided than visioning statements, feedback indicated that residents value the implementation of more energy-efficient solutions (29.8%) such as electricity, solar, wind, and a reduction in natural gas use. Other top values that emerged included the importance of an improved transit system (22.8%), and the support of urban agriculture (21.1%), densification (21.1%), and active transportation (21.1%).

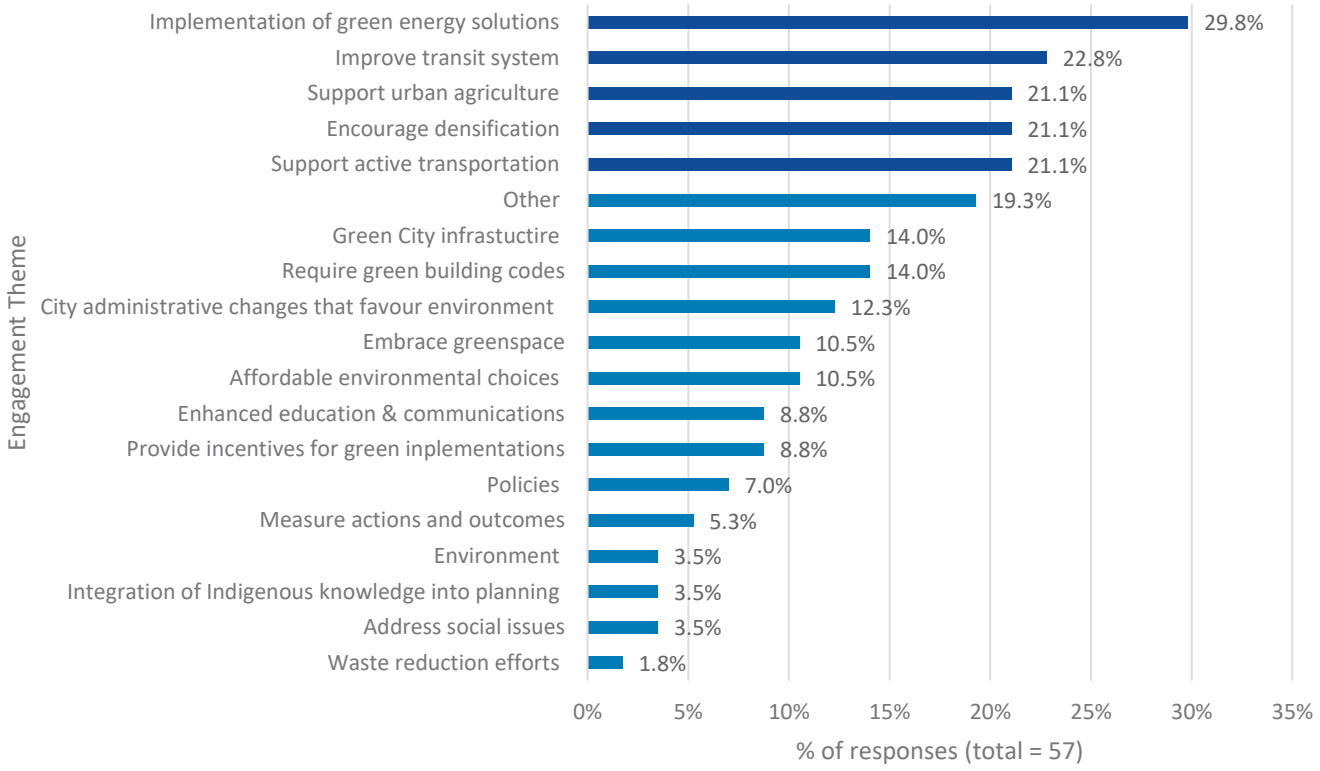


Figure 1. My climate vision for Winnipeg is…

WHAT YOU SAID

Theme 1: Implementation of green energy solutions

- Electrify transit, install electric vehicle charging stations, ban new installs of natural gas, mandate energy retrofits, and upgrade water treatment plants to capture gas emissions.
- Stop using natural gas and utilize our abundant hydroelectric power. Let's be leaders in electrifying our transit system and build more charging stations.
- Finding ways to power our low-carbon future in the true spirit of reconciliation.
- Put more emphasis on green energy and green energy technology research and development. More subsidies for renewable technologies – not just electricity. We need a serious reduction in natural gas, and should prioritize solar thermal heating.
- Be a leader and engage all levels of government.

Theme 2: Improve transit system

- Make public transportation number 1 priority and individual transportation secondary.
- For the City to take a leadership role (for once) and invest heavily in transit, electric vehicle charging.
- Mass transit options for those coming from outside the city.
- Let's be leaders in electrifying our transit system and build more charging stations.

Theme 3: Encourage densification

- Build neighbourhoods that are more walking and cycling friendly (e.g., shopping without taking your vehicle). Discourage the spread of the city.
- Make community friendly areas by promoting local community gardens, smaller yet more schools, and more local groceries.
- Council needs to decide how big the city is to be and on its geographic limits. There should be no new mega suburbs and put an upper limit on the square footage of new homes.
- Focus on walkable first. Independent community-owned and supported businesses will reduce the need to travel for daily needs.

Theme 4: Support active transportation

- Discourage vehicle use by turning traffic lanes into bike paths. Build neighbourhoods that are more walking and cycling friendly. Ideally can shop without taking your vehicle.
- Provide more bike lines and better bike lanes throughout the City for a safe ride.
- 60% of residents said they would cycle more if there were separated bike lanes. Allows people to spend more time outside connecting with their neighbours.

Q4: WHAT ACTIONS SHOULD THE CITY TAKE TO REDUCE GHG EMISSIONS FROM: BUILDINGS, TRANSPORTATION, AND WASTE SECTORS?

Kick-Off Event attendees were asked to provide actions that the City could take to reduce GHG emissions from the following sectors: buildings, transportation, and waste.

BUILDINGS

Respondents indicated that their top five actions to help reduce GHG emissions in the building sector include: required building code standards (33.5%), incentives for green energy implementations (24.1%), use of solar panels (24.1%), affordable program (16.7%) and the encouragement of City densification (14.8%) (Figure 2).

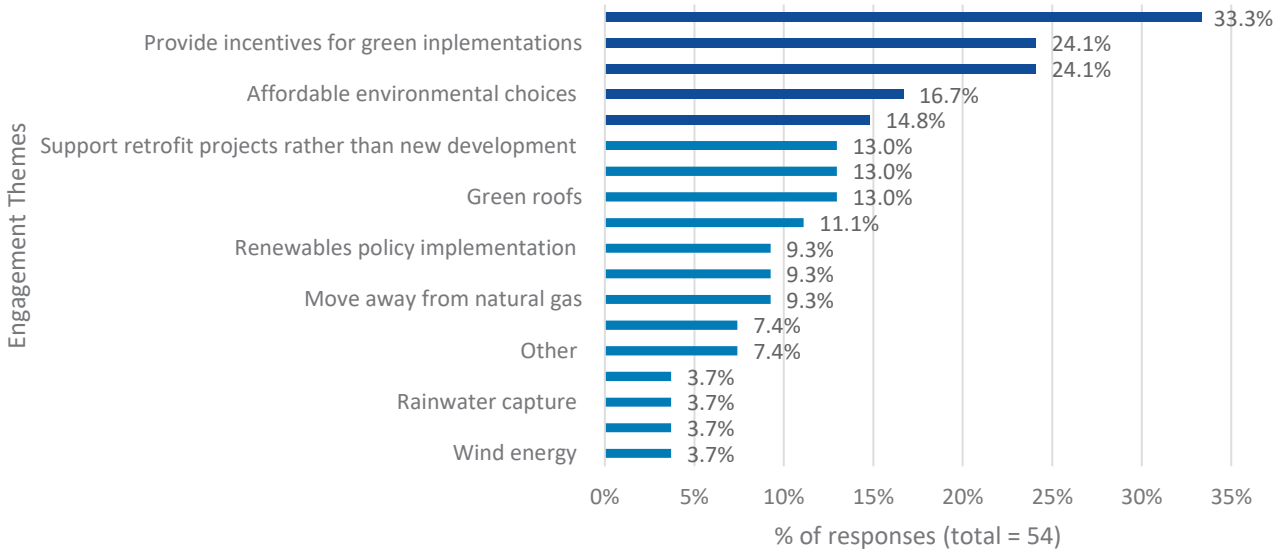


Figure 2. What actions should the City take to reduce GHG emission from the building sector?

WHAT YOU SAID

Theme 1: Required building code standards

- Building code requiring better energy saving features.
- Have rules and standards set for each building during building process and/or building redesign.
- Conduct energy audit of all city buildings; work with developers/construction unions to change codes for energy efficiency.
- Force developers to build all new buildings sustainably (fines if they don't).

Theme 2: Incentives for green energy implementations

- More incentives for communities to retrofit.
- Reward residents and businesses using green technology.
- Subsidies for green energy products (if they're inexpensive); incentives for reuse of things that would normally go to the dump (like building materials).
- Subsidize investments into renewable energy for residential users.

Theme 3: Use of solar panels

- Solar power; efficient energy use; tons of streetlights stay on all day even though it's daytime and there is no use for them.
- Solar panels on every building (consider a percentage requirement for solar).
- Streamline solar panel permits.

Theme 4: Affordability programs

- Enable homeowners to conduct retrofits in sustainable building programs that best meet their needs (LEED/net-zero houses); have new buildings meet standards and provide financial assistance for installation.
- Subsidize investments into renewable energy for residential users – needs to be affordable and accessible for all.
- Offer insulation grants; zero interest loans for private homes.
- Partner with others to encourage property owners to make changes to reduce energy consumption (find ways to make it affordable).

Theme 5: City densification

- Smaller, better-built buildings.
- Use growth fee to limit urban sprawl.
- Increase urban density and stop urban sprawl.
- Zoning for smaller, multi-family dwelling arrangements; inter-generational flexibility; mix residential with mixed-use commerce.

TRANSPORTATION

Respondents indicated that their top five actions to help reduce GHG emissions in the transportation sector include: improvements to the transit system (49.1%), improvements to active transportation infrastructure (49.1%), more electric vehicles and charging stations (36.8%), discourage car-centric lifestyles (17.5%), and more educational initiatives to promote smarter transportation decisions (12.3%) (Figure 3).

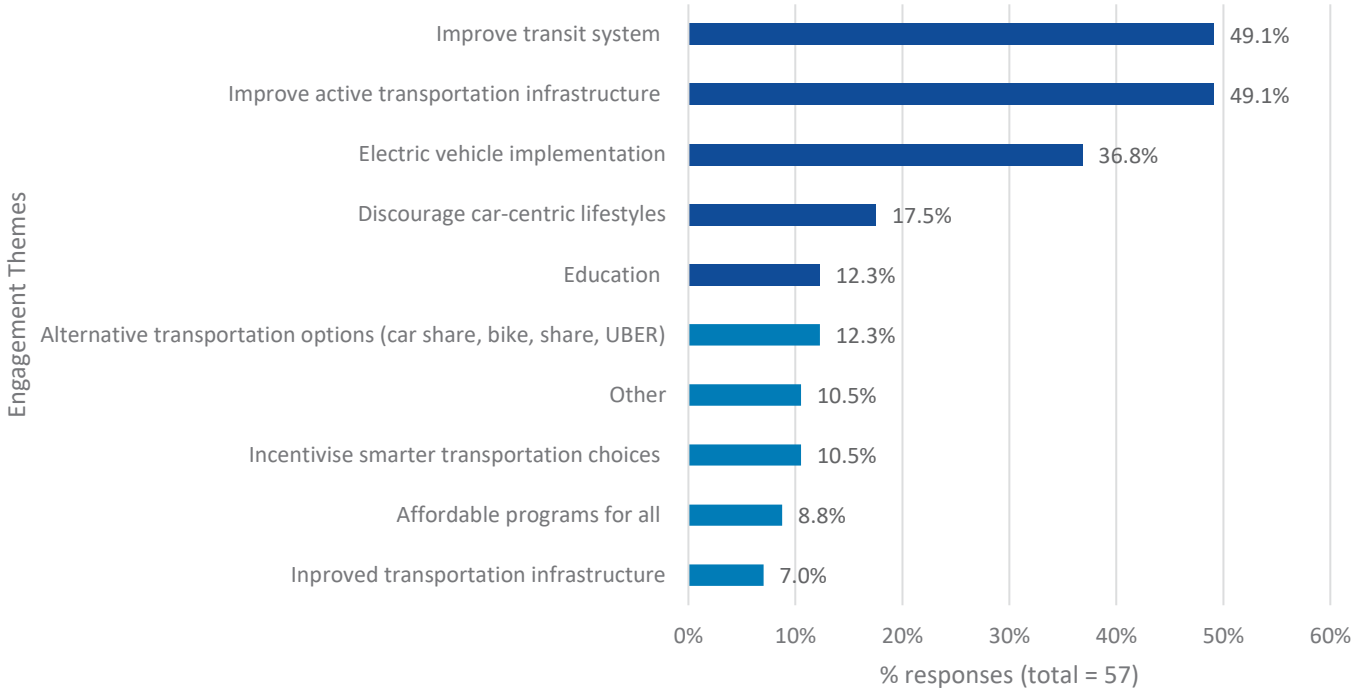


Figure 3. What actions should the City take to reduce GHG emission from the transportation sector?

WHAT YOU SAID

Theme 1: Improvements to the transit system

- Real rapid transit systems – emphasis on system; not single road.
- Increase bus frequencies and improve shelters – especially late at night.
- Possible implementation of a sky train for more consistent transit.
- Vastly improved public transportation; electric buses; a leading bus manufacturer makes them right here. Key is to provide an effective user experience.

Theme 2: Improvements to active transportation infrastructure

- Separate bike lanes from sidewalks and streets with a physical barrier – I don't bike because I don't feel safe; consider bike only corridors.
- Improve active transportation infrastructure – better, interconnected walking paths; provide incentives for people that use forms of active transportation.
- Invest in smart bike routes; incorporated into urban planning.
- More greenways; bike corridors away from vehicles; buses with bike racks.

Theme 3: More electric vehicles and charging stations

- Introduce a bylaw that every residence having more than one vehicle would have to be electric.
- More electric vehicle charging stations.
- Car shares could be electric/hybrid.
- Electrify transit.

Theme 4: Discourage car-centric lifestyles

- No car day (sticker on car determines which day you can't drive your car).
- Limit car access to the downtown to encourage foot traffic.
- $5 to $9 per litre of motor fuel; park &ride at perimeter highway locations; install plate readers to facilitate congestion fees.
- Free transit and/or cars banned/restricted. Have carless days.

Theme 5: More educational initiatives to promote smarter transportation decisions

- Supporting bike education and cycling safety and promotion like Green Action Centre's commuter challenge; bike to school/work day.
- Educate drivers – it's scary to bike.
- Make public transportation #1 priority. Change the mindset.
- Promotions and school programs about increasing walkers, etc.

WASTE

Respondents indicated that their top five actions to help reduce GHG emissions in the waste sector include: City-wide compost program (58.8%), incentives for responsible waste management (or disincentives for non-responsible waste management) (21.6%), improvement to recycling programs (13.7%), other uncategorized initiatives (15.7%), and to use methane gas as an alternative source of energy (15.7%) (Figure 4).

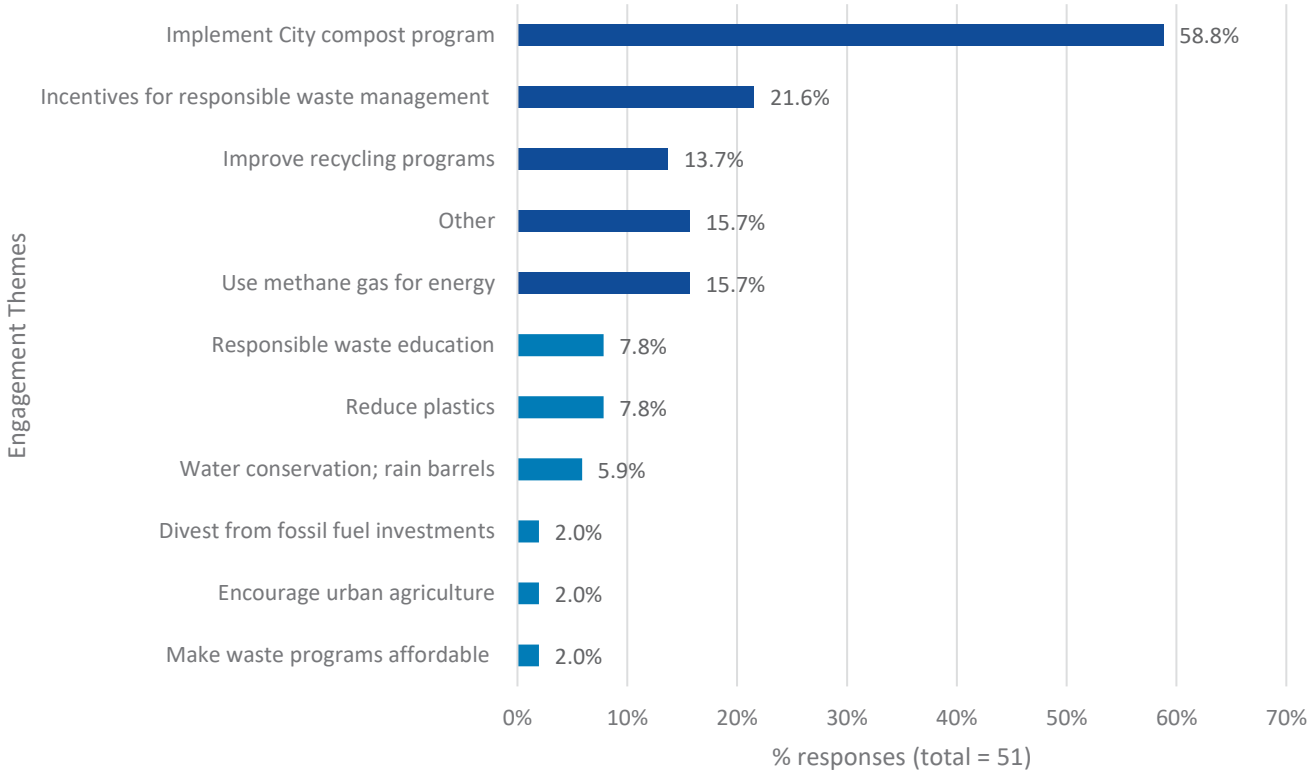


Figure 4. What actions should the City take to reduce GHG emission from the waste sector?

WHAT YOU SAID

Theme 1: City-wide compost program

- Curbside compostable pickup year-round.
- City-wide organics program.
- Develop compost collection for all city urban and suburban properties and schools.
- Promote composting on site for residents or a short distance away throughout the city.

Theme 2: Incentives / disincentives for responsible /irresponsible waste management

- Charge for excessive garbage/recycling accumulation.
- Refuse business permits to any business that uses non-recyclable materials (ex. cups from Starbucks).
- Charge for plastic bags.
- Stop environmental fees; this is just another tax.

Theme 3: Improvements to recycling programs

- Recycling for all plastics.
- Create policies requiring businesses, residents, and institutions to have mixed use recycling and organics programs.
- Make more things recyclable.
- Come up with letter recycling program; review other municipal incentive programs.
- Would like to see a report on the recyclable material – what is not recyclable and do you make any revenue from it?
- I really liked the long term plan about waste in Winnipeg when I read it.

Theme 4: Water / Wastewater

- Separate sewers.
- Build the water treatment plant FINALLY.

Theme 5: Methane gas as an alternative source of energy

- Turn methane “flare” into renewable natural gas.
- Use collected methane from landfill for heating.
- Methane capture systems.
- Capture and reuse landfill gas.

Q5: ARE THERE ACTIONS YOU WILL UNDERTAKE AS A WINNIPEG RESIDENT?

Participants were asked to discuss and write down their future actions considering future climate change impacts. Many respondents touched on the themes present in Question 1 (transportation, lifestyle, occupation & education), but a few additional themes emerged:

Theme 1: Energy

Many participants indicated that they will make an effort to reduce their energy consumption, adopt alternate energy forms (solar, geothermal, etc.), retrofit inefficient forms of energy, and/or make more energy-efficient choices.

WHAT YOU SAID

- I've disconnected my gas dryer, bought a high efficiency washer, upgraded the water heater; next is a metal roof to put on solar and geothermal.
- I have replaced all my household lighting with LED. That cuts down my lighting load by 85%.
- Investigate the use of solar panels for powering of personal buildings, and factory complexes.
- I will heat my house with electricity when Hydro lets me. I will power my home with solar, wind power when possible.

Theme 2: Transportation - carpooling, carsharing, transit

Many participants indicated that they'd like to reduce their personal car use, integrate car-sharing, ridehailing, carpooling, or increase their transit use in the future.

WHAT YOU SAID

- I would love to carpool and reduce emissions that way, especially with the new ride-sharing bylaw.
- I will take transit at least 4 days/week and ride my bike to work and school in the warmer months.
- Ride my bike at least twice per week in the summer and carpool during winter.
- Carpool and bus to school more often.

Theme 3: More public engagement, municipal lobbying, & advocating green initiatives

Many participants indicated that they will be more involved in public engagement initiatives and lobbying their local government for City modifications to adapt to climate change.

WHAT YOU SAID

- Try to reduce my consumption and educate others on how they can do the same. I would love to give more feedback about this and be more involved in the future. My email is xxxxxxx@gmail.com
- Lean on my elected representatives to do more; continue involvement with grass roots movements
- I will be civically engaged and try to hold elected officials accountable on our climate
- Lobby our Mayor and City Councillors, attend public engagement sessions, and start speaking up within my network to encourage people to take action

7.0 Kick-Off Event Engagement Feedback

Climate Stories + Vision

Q1: What is my climate story?

- My climate story is evolving – been working at it for years and will keep at it
- I bike/use public transit 75% of the time. I want it to be more – but need more family friendly infrastructure to be able to access these all the time.
- I primarily walk and bike, compost at home, and believe that environmental problems are the result of underlying social issues
- I walk & take the bus 90% of the time, I walk on CC issues, would like to be able to compost- most of my waste is compostable
- I do what I can, but am frustrated by the limitations of choices (why does this city not compost?), I am disappointed by all the plastic and wish that were more policy. I wish that we plowed the streets better for bikes in the winter. So many wishes
- I walk and cycle as much as I can. Stay away from plastic bags – own a low fuel emission automobile
- Recycle, limit light use and heating/air conditioning, avoid buying water bottles, unplug electronics when not in use
- Recycle, compost, cycle recreationally, minimize packaging, cloth shopping bags, use public transit, better transit, avoid beverage containers, refillable water bottles
- I take transit to work
- I cycle, compost and do other things that make sense within my life. Talking climate change matters to me but I think bigger picture, regulatory actions are the only real way to alter the path of climate change.
- More recently getting into recycling, pushing to get a program going in my community.
- I try to recycle – I would like to compost both indoor and out. I would like to bike more often. I would like access to affordable solar energy for my home. Problem – lack of resources and knowledge.
- I recycle, I compost, I watch my plastic waste, I occasionally take the bus. But I am addicted to my car as the family chauffeur in a winter-based climate.
- I try to be conscious and recycle and educate people when I can. I'm dedicating my life to reduction of GHG/climate change through doing a masters in sustainable energy engineering.
- I recycle, I eat organic food, work in the organic industry, bike to work in the summer, shop at farmer's markets (local food) and grow herbs.
- I'm highly interested in choosing the most sustainable things to do in my life. I think I can do so much more. I want to make the right choices but inconvenience or availability of services/resources make it difficult sometimes. I recycle, bike often, buy local, compost at work, work in sustainability, carpool, use energy efficient lighting etc.
- I only recycle and I don't even do that right because my girlfriend is always yelling at me that that's not recyclable. Lack of knowledge is probably the biggest issue. Run commercials, radio ads on basic every day material that is recyclable.
- I am a recycling advocate, I eat local whenever possible and I grow my own food in the warmer months. I try to bike and take transit whenever possible. I used to compost but find I don't have the space in my small apartment anymore. There's so much more I can do but there are small frustrations and it's not as easy as it should be.

- I feel like I do a lot (bike, bus, recycle, compost, energy efficient appliances, thrift store shopping) but I also feel that we need to be doing so much more. The most vital choice should also be much easier that it is (bus is packed, grocery stores stocked with non-local foods). What is the next step?
- I recycle (know what the right things to recycle are), donate clothes/items, buy responsibly to try and shift the market demand for environmental things, keep your actions in mind – how are you affecting the community locally and globally?
- Reduce GHG massively.
- I spend a lot of time outside at specific times of the year; March 31 – last day of ice fishing season and Nov 11 – first day of deer hunting season. We used to use snow mobiles on these dates, but now the snow isn't there. Even the spring ice is unsafe some years.
- I've been a biker for 20 years. I've been interested in green buildings. I'm trying a more sustainable lifestyle, trying to encourage people to be more sustainable through the way I live.
- Trolley bus on RTB.
- I recycle. Other than work, I walk everywhere. I live downtown.
- My story is of being too quiet for too long. The climate crisis cannot afford bystanders. So I am committing to getting engaged, speaking up, demanding more, and helping take action. When my story ends, I want it to be on the right side of history.
- I recycle when I can, I don't throw paper in the garbage, I walk to school, I am a cross guard at school.
- We recycle and compost. We've chosen to live where we live so our commutes are minimal and allow us to conveniently travel by foot/bike/bus.
- I don't eat meat, cycle and ride transit when I can.
- I chose a career in sustainability/environmental stewardship.
- As someone with educational background in climate change, it concerns me when someone tells me that they don't believe in climate change.
- I'm a UW biology student working on sustainability issues on campus, it will be good to see avenues for larger scale engagement.
- We live with a false sense of reality enforced by our fossil-fuel centric economy. Realization that reduced dependence on fossil fuels creates connections with our surroundings and lifestyles that are inherently healthier.
- I rely on my feet, my bike or transit to travel throughout the city. I am studying environmental studies hoping to practice environmental law.
- I live outside the city but commute to work. I came here today with my girlfriend (a Winnipeg resident). I recycle, grow my own vegetables and heat with wood. My daily commute requires much gasoline be burned in my truck. Driving so much is a problem.
- I am a growing climate champion. I work in tackling of climate change. I have found that there is always something more to do, but it is worth celebrating our current successes.
- I ride my mountain bike from April to snowfall in November; I participate in tree planting day each spring; I sponsor tree planting initiative
- I apply the 4 Rs in reducing food waste – reduce, recycle, reuse, recover (compost); gave up car over a year ago; energy efficient appliances; volunteer for environmental group
- Offer the Time is Up for the Tar Sands paper to attendees; getting involved with NGOs, BCED groups (coops, credit unions esp ACU) working for social, economic and environmental justice (eg MEJC)
- A group of individuals (metis, indigenous, students) were protesting a development on the parker wetlands site – they were supported by the City of Winnipeg. A court injunction was put through the

courts and the protests had to leave. The wetlands were cut down and the City dropped their support when the protesters were sued by the developer

- Have solar panels on the roof to create electricity and use it for hot water; use the bike to go to places or use public transportation; recycle – try to avoid plastic; living in a low-energy house; eating organic and local food
- Just beginning my climate story
- Not just one single person can change something, but each motivation of a single person is needed to reach a change. All together. Using more public transportation. What I realized is that even if I want to go by bike, that a lot of bike lines are missing to have a safe ride. I am really into composting / recycling.
- I used to recycle when I lived of Dufferin Ave. The recycling company did pickups. Now I live in social housing in North Kildonan and tenants there do not have access to recycling. All trash goes into bines for regular garbage pickups
- I like better bike paths – safety for bikers; support planners/listen to planners; Indigenous vision of the City? My daughter questions having children – what should she do?
- I live in a walkable community where I can get what I need without driving. I regularly use public transit which I appreciate because it reminds me that I live in a diverse city made up of many cultures. I work to make a difference in the world instead of to make money and I try to spend my money shopping local and I compost.
- I try to keep the city clean so I use the garbage cans provided. I object to environment fees so I never recycle disposable containers. When the fee is removed I will do so. I think climate change is a scam to elicit more tax collection. After hearing all of this information on climate change is vague and undefined I haven't seen any change myself.
- I work in the petroleum industry but I consider myself a x/5 for environmental consciousness. Too often I make lifestyle choices that are environmentally expensive. Sometimes I need to be reminded that the green choice is cheaper/healthier/more fun than my default.
- I recycle, bus, and try to limit my consumption. I believe that we need to change our policies and society to make environmental sustainability the mainstream norm; and to do this will require a shift in worldwide from western consumption to a belief in community as the source of health and happiness.
- Inconvenient Truth. Idle No More and Harpers omnibus bill got me really interested in water protection and climate activism. Interested in pipeline politics, international politics. Globalization – led campaign at UW. Geography student and RA in the Prairie Climate Centre.
- I'm a half-time cyclist with detractions for safety, security (theft even with a good lock), creature comfort, municipal planning (piecemeal but there's some prospect that this is slowly changing). I've spent 3 years during my son's toddler period walking/jogging him several kilometres daily to care. When I drive, I restrict my idle time and travel in a car using driving habits that will yield less than 5.5L/100km highway. I have taken advantage of the MB hydro energy retrofit program and now use less energy at home. I am a member of MEC.

- I walk and cycle as much as I can. Stay away from plastic bags – own a low fuel emission automobile
- Recycle, limit light use and heating/air conditioning, avoid buying water bottles, unplug electronics when not in use
- Recycle, compost, cycle recreationally, minimize packaging, cloth shopping bags, use public transit, better transit, avoid beverage containers, refillable water bottles
- I take transit to work

- Reviewing precinct plans as part of a look at the Chief Peguis Trail West Extension, one of the things that struck me was that all travel times were given in driving times, not walk, or bike times, not bussing times, even to schools.
- My wife and I don't own a car. Cycle is primary transport for forty years. Cut back my international and domestic flights to only those that are necessary.
- I repurpose and recycle and bike/scooter and walk and bus
- Bike everywhere all year. We need to follow the pedestrian cycling strategy and build our downtown bike grid first. Stop playing word politics.
- I take transit, walk and bike. I recycle and compost. I co-own a home and a car with my brother. I volunteer with MEJC and helped them campaign vs Energy East, am helping with efforts vs line3 & km. I grow my own food.

Q2: What is Winnipeg's climate story?

- Trying to appeal to drivers. Contrast of very poor communities with limited options with affluent communities that shop a lot. Car-based and suburban, segregation is a challenge.
- The city should no focus on a specific target, as most times these are arbitrarily set. Instead, should focus on actions that lead to sustainable green consumption patterns. Capitalize on adaptation co-benefits and revisit its plan regularly to address challenges in a timely fashion and upscale successful actions
- Winnipeg appears to put roads and their potholes above everything – where making driving as inconvenient as possible is perhaps a more useful goal
- To date, inaction. I REALLY hope that changes and tonight brings me hope. I hope we become a leader in addressing social issues arising around energy usage. I want to see citizens informed and hopefully engaged. If Winnipeg is doing great things, we know little about it.
- Transit system not good enough in Winnipeg. Regulation on one person per car. City spreading?
- No, we are not a mitigation leader
- Winnipeg would really benefit from efficient, accessible public transit. Recognition of real cost of individuals in vehicles – wear and tear on road infrastructure and air quality deterioration and sound pollution as well.
- Winnipeg makes excuses to avoid taking climate action but there is a strong community gaining momentum to change that.
- History of industrialization – still destroying wetland ecosystems.
- Winnipeg will listen to the planners, Winnipeg will not act on the advice of City planners in a timely and efficient fashion. "Rooster Town" should have supported as in-line co/Plan Winnipeg. Environmental impact – neighbourhood impacts.
- Winnipeg needs to be a voice for sustainable energy. We have sun and we have wind. We need to stop depending on the destructiveness of hydro to environment and diversify our energy profile. Subsidize solar! Geothermal everywhere.
- I hadn't previously thought Winnipeg was very forward thinking with respect to climate change but it's so great to see/hear that the city is planning for the future. This (the fact that city council is working hard on this) should be communicated more to civilians and governments alike so more people begin to work towards prevention of climate change.
- Winnipeg is not up to speed on climate. The time it takes to make decisions is way too long. People/the public are not informed of actions that can be taken to improve their footprint. MB hydro programs a step in the right direction.

- I think Winnipeg has made some small valid efforts towards sustainability and climate action but it doesn't seem to be enough. It took 20 years to get where we are? Why aren't we moving quicker – even if it's only low hanging fruit like promoting composting, energy efficiency or active transportation? We need more!
- Lack of climate story. Everybody knows that electric cars, solar and buses will make a difference. Yet how many are on the road? Stop making excuses and get it done. No more red tape.
- At an institutional level and with new developments/city buildings there have been some great innovations but there's a lack of cohesiveness or whole community action in Winnipeg. The city is talking and open to discussion but it seems we are far behind other cities in terms of sustainability. It's not easy for the average individual to do more (ex. there's no curbside compost, transit is packed and unreliable) Action needs to happen quicker!
- Winnipeg has not facilitated climate action, they've in many ways made things harder for residents (composting? Under-funded transit, red tape on local foods) and where progress has been made its way too slow (rapid transit, bike lanes, composting).
- Winnipeg has put other priorities above climate mitigation action, there needs to be more consistency in their action plan – everyone should be more aware of our goals as a city and community.
- Reduce GHG emissions massively.
- Winnipeg continues to expand our suburban driving concrete neighbourhoods which doesn't encourage human powered neighbourhoods. We continue to run new natural gas to developments instead of utilizing electric.
- How much did the city improve on the city police station when it "re-built" the post office for it?
- Winnipeg has not been a leader. Manitobans in general live in a ways that are unsustainable, in our lifestyles, values, and how we have built this city (and continue to build this city). Urban sprawl and vehicle-insensitive, low density communities will continue to be an Achilles heel to emissions reduction efforts.
- There are electric buses and cars. Lots of recycling bins so you can recycle everywhere.
- Winnipeg has lots of policy language that is great but it is a challenge to put those visions and objectives into serious action.
- As a community, as a culture.
- Winnipeg's intentions are great, but the budgeting cycle and lack of accountability is a concern.
- Winnipeg is taking proper actions to mitigate climate change but the steps towards these plans are slow and need a proper timeline to complete.
- I think we have a history of conflict arising from our use of hydro, I think we need to reconsider painting this as the sustainable option of the future.
- Winnipeg needs to recover from decades of short-sighted planning (ie sprawl). Appropriate response include densification, enabling local food production, make access to transit easy and service dependable.
- The city is spread out and hard to get across. Bus service is 50/50. Winnipeg is fortunate to have access to hydro generated electricity.
- Winnipeg has put other priorities above climate mitigation action.
- Social injustice and challenges in equality (currently).
- Winnipeg is a slow city and a scared city. Until Winnipeg sees bold leadership and ownership of documents such as the one proposed here, it is a moot point. But… we have excellent staff to begin moving in the direction
- Winnipeg in not a trailblazer in any climate mitigation strategies; Winnipeg is not fiscally responsible or provides sustainable solutions to any organic waste diversion projects

- Winnipeg does not listen to its planners (Our Winnipeg, Climate Plan) or citizens (indigenous + metis land defenders) over developers. Its priorities are growth and development which leads to sprawl and destruction of land
- Wpg is falling behind other large cities in Canada; not enough doing; not enough people involved
- Maybe Winnipeg should come up with pilot project to bicyclist /non-bicyclist for employers to offer to new employees, to encourage people to ride bikes more often. Repair old bikes from landfill and generate within communities
- More community-level participation in making decisions about planning; climate change brought down to a citizen level; support for culturally-based
- I think Mayor Bowman sees another easy revenue stream and has no complication about taking advantage of this. Winnipeg is not California. We get severe temperature change. We need to be prepared for the extreme and have little time or funds for city gymnastics.
- Winnipeg has put other priorities above climate mitigation action.
- Prior to colonization, Indigenous people lived in harmony with the land. In Winnipeg, people were buffalo hunters/buffalo people. Winnipeg became an agricultural city relying heavily on industrial energy systems. City is built for vehicles.
- “Mitigation” is an often incorrectly used word. It means reducing the damage of actions already taken. There is some of that which needs to happen but is the wrong place to set a benchmark from. It should start at cultural acceptance, one person at a time of small actions that yield lasting, positive results. It is good that Mayor Bowman has made a commitment to being a leader in this area. The makeup of Winnipeg’s demographic will soon be 25% aboriginal and another 25% Filipino so impacting uptake in less car-centric/more energy saving attitudes will go a long way.
- Winnipeg is lagging behind and needs to step up. We have one of the few major Canadian cities without a curbside organics collection program!
- Lots of talk, little action. Plans that put a low emphasis on practical sustainability while listing high ideals
- Not sure to be honest, so far it is a story of good intentions but I am not sure I see a whole lot of actions so far. The problem for Winnipeg is that we should have been doing what we are thinking now, twenty years ago.
- WPG has no clue what works, re GHE reduction. All cc actions should be objectively evaluated.
- Story of sprawl. No densification plan. Stop sprawl!! We can’t afford to build more communities that require maintenance for years so that people can drive to them. Winnipeg continues to put cars first. We need to prioritize pedestrians, cyclists, public transit, cars, in that order.
- Winnipeg is in denial. People don’t understand how much of an emergency we are in and they’re not prepared to inconvenience themselves to make the enormous changes necessary for governable society to be the norm for my daughter’s generation and their descendants.
- Eco village at old military base. Linkage to outlying communities. Density, urban sprawl, transit. Sprawl, roads, pipes, o&m, infill.

Q3: My climate vision for Winnipeg is...

- To deeply ingrain Indigenous knowledges and international knowledge in its planning. We won't fix the problem with the same thinking that created it. Need to be open to solutions outside our own world views. Inequality is so obvious in Winnipeg – climate plan needs to address the social issues tied to environmental issues. Solutions + programs can't just be for the affluent.
- Walkable first; independent community-owned and supported businesses reducing the need to travel for daily needs
- To be among the cities that Canadians talk about on how it managed to become sustainable/greener. Have it as a case study for job creation under a green economy lens. For Winnipeggers to be proud of what we have achieved and how our consumption pattern is greener ex. transportation
- The power of green spaces to make a community worth living in and as a source of wellness, active transportation to local level service make a moratorium on "big box" development, urban renewal and reuse instead of reckless sprawl, urban agriculture that compliments agriculture at large, architecture that is not just green but inspiring, a city that attracts and supports green industries, and a city that addresses the elephant in the room: over population is the #1 driver of climate change
- A diversified approach. We are one of the sunniest cities in the world yet do so little to embrace and use it. Think not only of the cold and winter but also our hot summers. We need the people who have more money to pay more and alleviate the burden on the poor – social justice.
- Discourage vehicle use by turning traffic lanes into bike paths. Build neighbourhoods that are more walking and cycling friendly, shopping without taking your vehicle. Discouraging the spreading of the city.
- All transit buses are electric, more solar energy being utilized, more cyclists by creating a more bike friendly city with much more safety measures for cyclists
- Important to have green spaces, naturalized spaces and preserved natural areas like Parker Wetlands throughout the city so residents do not have to drive to walk, cycle or have other "recreational wellness/anti-static activities"
- Transit-oriented development and rapid transit. Greater protection of the urban canopy. Enforceable targets with oversight and penalties when Winnipeg is found in non-compliance. Winnipeg needs to put the urban canopy as a higher priority, especially replacing trees that are lost to old age, Dutch elm and other causes. If Winnipeg Climate Action Plan has no teeth and cannot be enforced, it will be a challenge for any effective change. There needs to be oversight and penalties if the city is in non-compliance with those targets.
- Goal: to use our winter city status as an asset and our expertise and knowledge to pave a path forward. Vision: a resilient city with a focus on inclusivity, community strength, and reconciliation.
- Urban gardens, earthship research, green energy development, body burden studies, industrial land clean up, nature reserves, green law policy, hemp studies/construction, a city designed for the human scale
- Moving towards renewable energy such as solar panels. Along with transition from fossil fuels to biofuel if there's not going to be any.
- Increased affordable housing that is energy efficient. Funding for communities interested in local sustainability and energy efficient mitigation. Funding for home owners and landlords to make their properties energy efficient. Conserve energy not to sell if for profit but to increase quality of life.
- To stop allowing the priorities of business to take precedence over environmental concerns ex. diversifying energy, investing in rapid transit (not just BRT), encourage urban farming, green rooftops,

every suburban new development comes with a wind turbine, every new skyscraper 1 wall of solar panels, every unused parking lot a greenspace.

- Put more emphasis on green energy and green energy technology research and development. More subsidies for renewable technologies – not just electricity, we need a serious reduction in natural gas, prioritize solar thermal heating. Be a leader and engage all levels of government to show them that the community members are concerned about climate change. Solar is an available resource for both electricity and heat – it's time to take advantage of it.
- Industries will be subsidized by government to take initiative ex. recycle, compost, use renewable energy sources in their facilities. More advertising is needed to inform the public and everyone would be on board. There will be better biking paths to make biking priority.
- I envision Winnipeg as a climate leader in the country. We have such an overwhelming scale of opportunity for climate action, we just need the gumption to do it. We need to shape our communities to encourage climate action. How we build our buildings, infrastructure, support businesses, develop programming and encourage involvement. All of these have tremendous effect on climate change action. It's more than sustainability, it's our responsibility to make our city healthier, happier and thrive.
- Make public transportation number 1 priority and individual transportation secondary. Make community friendly areas. Local community gardens, smaller yet more schools, more local groceries. Spend the money and focus on the long term.
- To set ambitious goals and reach them. Exceed well beyond the standard in multiple categories. To be a leader and a trend setter for a progressive sustainable city.
- For the city to take a leadership role (for once) and invest heavily in transit, electric vehicle charging, renewable energy for heating, FastTrack energy efficiency programs, aim for LEED platinum rather than LEED silver, and invest in equality and local supports for affordable housing.
- An environmentally ethical choice should be an easy choice – more access to make these things like transit, cheaper options that people can choose. Vision: to be a city with environmentally friendly options for Winnipeggers – we should reduce our emissions and be the city with the least carbon emissions per person. Be a city with more consistent action plan renewal (more frequent).
- Displace natural gas with electric.
- Electrify transit, build electric vehicle charging stations, ban new installs of natural gas, mandate energy retrofits, upgrade water treatment plants to capture gas emissions, limit carbon release in water, 100,000 local generation solar installs, curbside organic compost needs to be implemented, new nature education park in St. B on the old Stackyard site, regreen parts of city.
- Mandating energy efficiency in buildings, houses. Prioritizing infill housing, density, walkable and bikeable streets, prioritizing more people friendly public spaces.
- You have to development measurement to make sure you get to your goals. Right now it's a bunch of talk.
- Be a leader in sustainable living. Completely rethink the way the city procures its good and services to maximize social and environmental benefits. Utilize social procurement. We must become a denser city. People-friendly on the streets. Employ a solutions economy approach. Promote urban agriculture through community gardens, green houses and LED-based vertical farming. We can build a sustainable urban food production system.
- No gas or diesel cars, only electric cards. Make more things recyclable.
- Tracking impact of actions, reporting to community about successes and failures to impact decisions about next steps.
- Awareness of all citizens and a change in economics perspective.
- All of the above.

- Finding ways to power our low-carbon future in the true spirit of reconciliation.
- See transitionwinnipeg.ca for “Winnipeg Great Transition” document.
- To lead the way on transitioning to a fossil fuel free society. In order to do this, the city of Winnipeg and the public institutions that make it up need to divest from fossil fuel companies.
- Environment > Social > Economy
- Mass transit options for those coming from outside the city. Co-gen power generation to utilize waste going to landfill otherwise. Promote urban agriculture to utilize vacant lots, green spaces. Plant trees everywhere possible.
- Concerned that climate change is the voice of the privileges – can’t worry about climate change because of other problems and challenges, more underprivileged than others in this city. Social implications of climate change – jobs for people. Ideas that can change the world – can this person bring this to the City Council. Open government – collaborative partnership instead of being closed.
- To commit to our targets and enstrine our environment in rought and legal settings. Our city requires a comprehensive and universal climate vision. We have to commit to complete plans. It requires a radical revisioning of the development process to ensure new development connect to macro considerations.
- Stop composting today. It in no way can be financially sustainable or address any of the issues of the “Bellagio Stamp” as stated within the “Sustainable Winnipeg” document page 22!! Theory and policy are lovely – now “walk the talk”; engineered compost systems are a joke
- Permaculture; removal of SOVs (single occupant cars) on roads; new building standards
- 1. Because of great communication, educating, cooperating and coordinating potential of low-cost, secure, people/public owned and servicing computer networking systems – WPG (and all cities and towns) should have OWN ISP systems linked to other people – owned systems – peer to peer, local – global; 2. Accredited program to insulate buildings most in need of safeguards – retrofitting; Note on Point 1 → the small town of Olds, Alberta, and others, have built their own WPG CAN DO It!; reliable computer / web-based organizing, local-global in crucial re climate change AND a lot of major issues humanity must deal with ASAP; corporate/private control of the web poses a major threat for humanity
- To protect its citizens when they try to stand up for climate change and environmental justice. They city abandoned its citizens during the Rooster Town / Parker Wetlands situation/lawsuit and put its citizens in danger. Climate action can never happen when individuals are penalized / face lawsuits.
- Create more incentives for citizens to use green energy eg) to put up solar panels on their roof and safe tates; put up windmills to create electricity and biogas plants / wind power; more bike lanes to get around safely!; build more low energy houses / green building; electrical buses / stations to charge electrical cars; farmer markets to sell more sustainable food; help to create a sustainable economy
- More staff! other cities have up to 10-15 workers dedicated to this work; full-time workers; only one coordinator?!
- More green places; using green energy to save money eg. Windmill (wind power); more bike lines to have a safe ride; start composting and recycling more rubbish; create houses with more insulation to save energy (costs); electrical cars to reduce emissions; solar items on top of a building
- Lower bus transportation prices so more people will choose to ride; more bike lanes
- Social justice; public transit funded; historical awareness as in Rooster-town where is was evident that first nations and metis values, right were not respected; more transparency for residents instead of power and knowledge in the lands of real estate; Winnipeg seems so far behind other cities
- We fix the roads. Ensure snow is managed properly. Lower taxes so we can afford to live in reasonable comfort. Remove the clutter on Winnipeg streets. Get rid of diamond lanes. Remove concrete barriers blocking some streets like Harrow. Remove bumped out curbs – they are dangerous and hobble traffic.

Too much traffic congestion due to road clutter. This is not citizen doing but the city doing with all the clutter.

- What a “100 mile vacation” campaign? Fewer flights = less GHGs and more money in Winnipeg. Teach employees to accelerate slowly and brake less. Also maintain city fleet for longevity and efficient operation. Food trucks with less garbage and local food get sweet spots. See what other cities are doing successfully. Climate plan should have short timeline ex. not just a plan to make a plan or plan to start in x years. Not just funding for studies and reports. What is the low hanging fruit to reduce GHGs?
- To exceed reductions in emissions set by the Paris Accord. To be denser, more walkable. Greater urban and local food production – ex. 90% of food eaten in the province produced in province. For the city to have excellent public transit and an active transportation infrastructure network as extensive as the current road network. For the city to limit the expansion of suburbs until the core has reached a more sustainable density.
- Better bike lanes, more bike labs throughout the city. More community gardens and space available for local, accessible and sustainable food. More electric charging stations.
- The answer is not less polluting cars but having an infrastructure priority to change the car-centric attitude (exacerbated by city planners allowing and promoting urban sprawl) of many residents. Larger distances present some uptake challenges but are not insurmountable. Get rid of nay-sayers like Councillor Jeff Browaty and even though they have a bike emergency response provision almost all of the focus of the Manitoba Motor League is car centric, including their loaded verdict to oppose the potential opening of the portage avenue and main street intersection to pedestrians. I hope that when the municipalities come up with guidelines for taxi/ride sharing initiatives that climate damage minimization better cultural acceptance occurs.
- We are a zero waste city. Winnipeg has banned single use plastic bags and Styrofoam, we’re running a fleet of electric buses, residents are receiving incentives for urban agriculture, bee keeping and raising chicken. The 60% of residents that said they’d cycle more if there was separated bike lanes are cycling regularly and people are spending more time outside connecting with their neighbours.
- A city where transportation decisions are prioritized based on a needs hierarchy when walking, biking, public transit, freight, private vehicles. A city that is walkable, bikeable, and served by high quality transit. A more vibrant city with active street, place making.
- Council needs to decide how big the city is to be and on its geographic limits of the city. No new mega suburbs and put an upper limit on the square footage of new homes. Congestions charge for all vehicles entering city from any place beyond perimeter. Ensure that all new building envelopes meet minimum standards for insulation, energy conservation, etc. Transit has to be improved EVERYWHERE, meaning no-one within perimeter should have to wait more than 15 minutes for a bus.
- Stop doing nonsense actions
- That we stop using natural gas and utilize our abundant hydroelectric power. Let’s be leaders in electrifying our transit system and build more charging stations. Let’s be a leader in winter cycling and maintenance, bike scene, ice trail racer on the river. Embrace outdoor activity in the winter. Get people moving. Less traffic passing through downtown, more people walking and biking. Lastly, get an organics disposal program.
- To take action. I see food not lawns. I see replacing boulevards with food. I see parks and green spaces with orchards and veggie gardens in them. I see mass EU transit emptying roadways. I see solar panels and electric heating on every building. Bees, hens and rabbits in back yards.

Q4: What actions should the City take to reduce GHG emissions from:

Buildings

- Green roofs – mandatory in Toronto; more incentives for communities to retrofit; integrate green energies taking burden off individuals;
- Zoning far smaller; multi-family dwelling arrangements; inter-generational flexibility; mix residential with mixed-use commerce; entrepreneurship;
- Enable homeowners conduit retrofits in sustainable building programs that best meet their needs (leed/net-zero houses); have new building meet standard and have financial assistance to install;
- Green roofs; rooftop solar and microwind; geothermal; urban farming opportunities; rainwater capture; passive building designs; community based power generation;
- Green rooftops; stop building new buildings; retrofitting; move away from natural gas heating and cooling. Encourage people to live together; dis-incentivize living alone;
- Better buildings; solar panels;
- Solar power; efficient energy use; tons of streetlights stay on all day even though it's daytime and there is no use for them. Motion-sensor streetlights on residential streets;
- Reward residents and businesses using green technology; building code requiring better energy saving features; incentivizing energy conversion behaviour; electric charging stations;
- Require bike parking at new buildings and all city buildings; incentives for better buildings; educate around consumption; increase density;
- Keep historical buildings in better condition – ie new windows and better insulation would save energy;
- Explore "hempcrete;" explore earthship initiatives; urban green houses and fungus gardens; solar panels; greywater recycling; drainwater heat recycling; vertical and rooftop garden policy; housing/low-income housing; less sprawl;
- Every building a green rooftop – change building codes to make this easier in residential areas; incentives for vertical gardening; solar panels on every building – a percentage with solar required; allow urban farming; imagine wind farming on underutilized land parcels; incentive for solar in residential properties; retrofit old buildings to LEED standards; co-op housing; co-op retirement village;
- Subsidies for green energy products (if they're non-expensive); incentives for reuse of things that would normally go to the dump (like building materials);
- I think all public sector buildings should have to achieve LEED gold certification in addition to ongoing preventative maintenance programs; should also be a long term strategy for how to retrofit aging buildings; soft scaping and integrating nature into buildings; subsidize investments into renewable energy for residential users – needs to be affordable and accessible for all;
- Tax cuts for green renovation projects / materials. Promote green;
- Introduce renewable energy policies; set progressive targets – ex. reach 40% of our energy from renewable sources by 2022; introduce requirements for a % of open green space for every sq footage of development;
- Incentivize energy efficiency actions; renewable energy for heating; energy efficient and net zero buildings;
- Have rules and standards set for each building during building process and/or building redesign; have incentives for GHG emissions leaders; make sure they are using renewable energy;
- Replace natural gas fueled appliances and furnaces with electric.
- Mandate electric only heating; ban new natural gas installs; offer insulation grants; zero interest loans for private homes;

- Increase energy efficiency standards for new houses through bylaws; retrofits; streamline solar panel permits; build tiny houses;
- How much GHG did the city do no the new revamped City Police Station?
- Passive solar or energy positive;
- Promote net zero buildings. Retrofitting of existing buildings to bring up to standards. Renewables-only energy policy. No fossil fuels in heat generation. Absolute ban on fossil fuels;
- Make sure the buildings are properly insulated and give people blankets if the building is cold;
- Maintain city buildings to energy efficient standards; partner with others to encourage property owners to make changes to reduce energy consumption (find ways to make it affordable);
- Smaller; more well built buildings;
- Maintain solar options – hydro rebates/incentives; build more bios snails / constructed wetlands to slow the flow of water to mitigate flooding issues/nutrient loading; create more pollinator gardens;
- Conduct energy audit of all city buildings; work with developers/construction unions to change codes for energy efficiency; incentivize retrofitting;
- Green roof bylaw similar to Toronto; adapting building code to ensure improved efficiency; adapt growth fee to limit urban sprawl;
- Better insulation; alternative energy sources;
- Upgrade existing ones with better insulation; windows; green roofs; roof top shelter;
- Consider a policy to “green” existing corporate buildings; provide stick and carrot plan for private buildings
- Zero energy BLoop nice – let’s try sealing, recycling and insulating buildings; install “Green Walls” to filter noxious xxxx and CO2 from interior of building
- Force developers to build all new buildings sustainably – fines if they don’t; consultation with first nations for all municipal land being sold to private hands (eg Parker Wetlands)
- Promote low-energy houses / green buildings; promote energy-saving lightbulbs in buildings; use insulation to reduce energy and isolated windows; solar panels on every building; laws to build efficient; green rooftops
- Compost program
- Green building; solar panels on the roof of buildings; create houses with better insulation to save energy; vertical gardens (gardens on rooftops)
- Should have solar panels investment
- I have geothermal in my home; I cannot afford solar panels
- Shut the lights off at night. Lower the heat at night. Stop building lit artwork. Spend more on clearing sidewalks and streets so we can get to work each day. Support constituents who are trying to make a living.
- Consider bylaws pertaining to new building retrofit; ensure that citizens are not restricted from using environmentally friendly materials or techniques;
- Green roof policy; passive buildings into the code; financial options – financing for upgrades to spread costs over time; lights are low-hanging fruit (LEDs);
- Mg roof initiative (Toronto); passive house construction; proper consultations with FN, Metis, Inuit (ex. Rooster town);
- Meet minimum LEED standards;
- Increase urban density and stop urban sprawl; support retrofitting of old buildings; more green roofs; more solar;

- Building carbon foot prints need to consider transit to and from the building; include qualitative and quantitative standards in bike parking;also think about compost and recycle
- Turn the lights off at night-save the migratory birds; programs to encourage renewed home insulation; turn off machinery/computers-beware phantom power
- DSM; NZE policy and accountability; education
- City tax on house and business heating. $2000/home
- New buildings should have a requirement that 30% of energy is from renewable sources. No natural gas. Stop sprawl. Densify. Develop and densification plan for the City of Winnipeg.
- Require solar on every viable existing building. Assess properties whose household incomes are below a threshold and install panels there that don't get paid for the electricity that goes back to the grid.
- Measure and disclose consumption. No gas for new developments. Invest in existing buildings.
- Retrofit program

Transportation

- Rain water collection to wash buses/municipal vehicles;
- Electrification of transportation; car share;
- Prioritize electric vehicles and bike ways;
- Real rapid transit systems – emphasis on system; not single road; e-vehicles; pay for road use downtown (like London); safer walking and biking with plowing in winter;
- Bike infrastructure; educate drivers – it's scary to bike; turn some roads into bike only; multimodal transportation; park and ride; no idling laws;
- Introduce a bylaw that every residence having more than one vehicle would have to be electric. Improve transit system to encourage more use – user friendly;
- More money to improve Winnipeg transit efficiently (ex. not spending so much to design/implement/test something like Peggo cards). Bigger bike lanes; Higher insurance for multiple car owners; more accessible buses; public washrooms;
- More greenways; bike corridors away from vehicles; buses with bike racks; public washrooms so people can walk/cycle; efficient use of transit funds; operating budget increases needed to increase transit ridership;
- Fast track the development of a rapid transit network throughout the city; electrify the city's bus fleet;
- Timing of lights to reduce idling; transit improvements; active transportation for all ages and abilities; incentives for using trans and cycling/walking; public washrooms;
- Hydrogen fuel cell research; more bike lanes/winter bike lanes; bike subsidies/tax refunds; walking/green transport corridors; walkability improvement; luxury vehicle tax;
- Vehicle charging stations; business to provide incentives to employees for taking alternative modes of transport;
- Separate bike lanes from sidewalks and streets with a physical barrier – I don't bike because I don't feel safe; river rides bike only corridors; invest in rapid transit; create carpool centralization through websites and business incentives; invest in warm bus shelters – solar panels please; every bus stop should be a warm bus stop; UBER and rideshare; bike rent and drops around the city;
- The city and business need to take a leadership role to change the dependence on fossil fuels;
- Paid bus passes for downtown employees.

- Encourage carpooling through GoManitoba – provincial wide program; invest more into public transit ex. getting from E. Kildonan to UM in 78 minutes is not appealing to anyone; over capacity diverts people from taking transit; more cycling infrastructure and safer bike lock ups;
- Make public transportation #1 priority. Change the mindset;
- Improve active transportation infrastructure – better walking paths/connected; provide incentives for people that use forms of active transportation; improve bus frequencies and shelters – especially late at night;
- Way more investment in transit (busses are jam packed); more investment in bike infrastructure available and maintained year-round; less investment in road expansion to outer areas/suburbs (people are moving to towns outside of Winnipeg);
- Possible implementation of a sky train for more consistent transit; more electric vehicle charging stations;
- Electric.
- Level 3 chargers for electric vehicles; better bike paths – safer; electrify transit.
- More bike lanes; electric vehicle charging stations at public spaces (The Forks); no car day (stick on car determines which day you can't drive your car);
- Right now average; "battery" electric car is too expensive for average citizen;
- Incentives for car share; car shares could be electric/hybrid; free university transit passes or heavily reduced; heavily reduced downtown transit; bike share;
- Vastly improved public transportation; electric buses; we are home to the HA leader in bus manufacturing – they are made right here; but the key is an elegant/effective user experience; there is a huge hill to climb to overcome the habits of the solo commuter. This is a structural issue;
- More electric vehicles; more biking; more walking;
- Focus development in a more transit oriented way to support more efficient transit focus; invest more in maintaining our urban forest;
- Better public transit and cycle lanes (safer is key!);
- Electrify transit – more with hydro for subsidies; automation would be great for increased operational hours; charging stations – should be split costs between hydro; city and the entity/business; traffic flow evaluations;
- Electric vehicle / bus; safer bike paths; more / warm bus shelters to encourage public transportation; sky train;
- Enable the proliferation of electric vehicles; improve transit services and frequency;
- Invest in transit; expand the lines and build lines based on current need not on proposed or expected development; invest in smart bike routes; incorporated with urban planning; limit car access to the downtown to encourage foot traffic;
- Better transit; Manitoba hydro + WTS;
- Fuel city vehicles with bio fuels of one type or another; improve mass transit;
- Consider connected commuting that is multi-modal; TREC recently releases a report on bike/walk connectivity; build bike only pathways
- Push for more bike lanes in downtown Winnipeg; push for transit to procures "Proterra Bus" for demo runs; how about getting the electric bus route to change impact back to operations??
- Dedicated lanes on streets for buses and bikes – instead of BRT – priority lights – no parking on streets
- Encourage citizens to use the bike / public transportation; incentives for employees to use the bike or to buy a bike; electric vehicle charging stations; incentives to buy electrical cars

- School – carpooling program; walking BUSS? – biking BUSS; promotions and school about increasing walkers etc.
- Electrical cars; bike lines to ride the bike safer
- Have bus transit price freeze; higher costs makes it harder for lower income people
- Reduce sprawl that benefits developers; businesses should give people enough time to take the bus to work; wall to wall cars are unsafe in Spence neighbourhood; bus rapid transit to the stadium; plough sidewalks in the winter for walkers / low income people
- Declutter the streets of bike lanes and diamond lanes; Paint downtown back lanes white for use by cyclists.
- Improve bike ridership numbers; make public transit more convenient for more users;
- New investment in transit focused on citizens more than development opportunities; could hydro's credit problem be partially alleviated by converting the entire transit fleet to EVs; limit sprawl to promote density and walkability;
- More protected bike lanes; safer roads for bike lanes; partnership between COW-MB Hydro for all electric bus fleet;
- Along with centreport; have Winnipeg be a hub for airships for goods and persons movement; coupled with economics/washout/political will in the omnitrax debacle.
- Keep building more separated bike lanes and supporting bike education and cycling safety and promotion like green action centre's commuter challenge; bike to school/work day;
- Create a downtown protected bike lane network with a 200m mesh width as per pedestrian and cycling strategies;
- Improve availability of transit everywhere in city;
- Infrastructure to support; need terminus points and bike racks; education;
- $5 to $9 per litre of motor fuel; park &ride at perimeter; plate reader for congestion fees;
- Encourage active transportation & Public transportation; discourage single occupancy vehicles; fund & support active and safe routes to school; discourage parents from driving children to school; put speed bumps on either side of school zones; properly fund Winnipeg transit; stop building more roads; too much money to maintain;
- Free transit and/or cars banned/restricted. Have carless days;
- Plan for people not cars; more charging stations for electric cars; ban old cars/trucks from downtown
- Active transit;

Waste

- Community gardens with compost drop-off options and rain barrels *climate action plan has to address food insecurity too*;
- Community composting;
- Include compost pick up; charge for excessive garbage/recycling accumulation;
- Curbside compostable pickup year-round; recycling for all plastics;
- Compost; invest in places like Arts Junktion; tax garbage at point of sale;
- Encourage composting; conservation of water (incentivize);
- Capture and reuse landfill gas; more recycling bins in City buildings; city-wide organics program;
- Innovation around waste and energy – methane gas as an energy source;

- Grey water recycling policy; copper coil drain water recycling; commercial food waste donation policy; plastic bags; ugly produce policy;
- Reject products with packaging; jugs to get milk – water containers etc.; incentives for waste reduction;
- Develop compost collection for all city urban and suburban properties and schools; refuse business permits to any business that uses non-recyclable materials (ex. cups from Starbucks);
- Trap methane and burn it for heat elsewhere; methane emissions are far worse than CO2 emissions for GHG; so using the City would reduce City release and existing CO2 from current heat methods;
- Compost – it's time; encourage businesses to adopt zero waste strategies – zero waste malls; public arenas etc;
- Compost bins now.
- Create policies requiring business; residents and institutions to have mixed use recycling and organics programs; roll out curbside composting to make it easy for everyone (or provide resources for backyard composting);
- Provide a city-wide composting program;
- City-wide composting pick-up; clear recycling information; charge for plastic bags; food – invest in many more community gardens; link gardens to grocery stores; farmers markets; food banks; offer tax credits for gardening;
- Companywide training programs;
- Recycle;
- Curbside compost; build the water treatment plant FINALLY;
- Citywide compost program;
- Would like to see a report on the recyclable material – what is not recyclable and do you make any revenue from it?
- Incentives for recycling and organics;
- Organics program; zero waste strategy; other city action – divest from fossil fuel investments/ holdings;
- Make more things recyclable;
- Promote less waste;
- C&D waste is a big issue; we are good at collecting but not good at actual recycling; turn methane "flare" into renewable natural gas; compost collection program;
- Corporate strategy;
- Curbside compost pickup; use collected methane from landfill for heating;
- Municipal composting pick up;
- Compost;
- Promote composting on site for residents or a short distance away throughout the city; build co-gen plants;
- Organics policy implement already; become a zero waste city
- Zero waste not possible – too much packaging!!
- Provide more water fountains to reduce water bottles (plastic); support zero waste grocery stores
- Recycling; composting
- Come up with letter recycling program; maybe one that gives an incentive like Calgary; Alberta
- Low income people cannot afford to reduce waste – make it affordable
- Stop environmental fees; this is just another tax; Winnipeg is too cold to ride a bike all year – those who do are not safe; walking paths are very nice in summer but they are impractical;
- I really liked the long term plan about waste in Winnipeg when I read it;

- Develop a zero waste strategy;
- Composting bins; methane capture systems; solar powered dump;
- Launch curbside organics pick up program you've been talking about for years; all city buildings should be composting; single use plastic bags should be banned and innovative food waste reduction programs should be launched; charge Winnipeggers;
- Increase the composting system;
- Make compost and recycling be a condition of licensing (restaurants; offices, etc);
- LFG recapture; compost feasibility;
- Separate sewers;
- Let's divert organics from the landfill. Let's charge to throw out garbage by volume. No charge for compost;
- Mandatory composting; Gray water use;
- Composting; waste to energy;
- Home composting programs.

Q5: Are there action you will undertake as a Winnipeg resident?

- Look at every retrofit option for multi-dwelling buildings, look at car-share programs, see how to reduce my energy consumption
- I have no car, I bike where I feel safe, walk a lot, recycling nazi, I've disconnected my gas dryer, bought an HE washer, upgraded water heater, next is metal roof to put on solar and geothermal, long-time vegetarian and composter
- I will do whatever I can. GIVE ME MORE OPPORTUNITIES FOR ACTION. INVEST IN PLANTING TREES IN WINNIPEG. Please be careful about solutions that the rich can buy their way out of. Not flat fee - % of income instead.
- I would love to carpool and reduce emissions that way, especially with the new ride-sharing bylaw, reduce electricity usage and encourage others to do the same
- I will renew my efforts to cycle grocery shopping. I plan to reduce lawn size and replace with shrubs, tomato plants that use less water.
- I will be civically engaged and try to hold elected officials accountable to our climate.
- How can an individual be sustainable within a society that relies on systems that are not? The citizen needs to be accounted for and a green lifestyle needs to be accessible.
- I'm becoming an urban beekeeper, I advocate for green initiatives and grants at my child's school – I would install solar, I have retrofit for energy and I will to continue to advocate with my councillor for green initiatives, including a citywide compost program. Farms not lawns, please. Let's work towards food equality too.
- Try to reduce my consumption and educate others on how they can do the same. I would love to give more feedback about this and be more involved in the future. My email is calenetreichel@gmail.com
- Ride my bike at least 2x a week in the summer and carpool during winter, start my own at home compost bin, work to unplug/shut off/ and upgrade to more energy aware, buy local.
- I will take transit at least 4 days/week and ride my bike to work and school in the warmer months. I will start composting again.
- Insulating basement and kitchen of 100 year old house, attempt some winter biking this year, look into MB hydro solar panel incentive, next shared car will be electric!
- I will turn off the lights in my home to save energy, carpool to school and bus to school more often.
- Yes. By producing cheap and abundant electric energy.

- I bike all winter. I run kids programming that is community and walking based. I already compost to eliminate waste.
- Offset natural gas use with energy audits (Bull Frog Power).
- I have replaced all my household lighting with LED. That cuts down my lighting load by 85%.
- Buy local produce, support local, organic small farms, lobby our Mayor and city councillors, attend public engagement sessions, and start speaking up within my network to encourage people to take action, divesting my investment portfolio of fossil fuel companies.
- I already do: cycle, carpool, eat less meat, create less waste etc.
- Backyard composting, making my home as energy efficient as possible, pollinator friendly garden, drive less.
- Drive less.
- I will adopt Compost Winnipeg
- Ride bike in summers, early spring and late fall; use biofuels only in my diesel and gas powered vehicles; plant trees to absorb CO2 from atmosphere; investigate the use of solar panels for powering of personal building and factory complex
- See question 1 (I apply the 4 Rs in reducing food waste – reduce, recycle, reuse, recover (compost); gave up car over a year ago; energy efficient appliances; volunteer for environmental group)
- Use public transportation; recycle
- I bike all summer or rollerblade
- I will ride the Winnipeg Transit once or twice a week
- I do not own a car; I recycle bags; I do not use plastic bottles; promote / support xxxxx of portage and main – cars must slow down for people
- Be more conscientious of expenditures. Dress warmly and use my car. 6 months of the year is so cold that simply leaving the house can result in death if you are not properly dressed and aware of your situation regarding temperature, snow and your proximity to warm buildings.
- Bike more. Seek a job closer to where I live. Eat less meat. Air seal my home.
- I will live in a walkable neighbourhood when I move out. I will continue to limit my consumption. I will continue to be active in my community to effect change.
- Stopping Enbridge lines. Protect Winnipeg's drinking water.
- Lean on my elected representatives to do more; continue involvement with grass roots movements.
- Look at every retrofit option for multi-dwelling buildings, look at car-share programs, see how to reduce my energy consumption
- I have no car, I bike where I feel safe, walk a lot, recycling nazi, I've disconnected my gas dryer, bought an HE washer, upgraded water heater, next is metal roof to put on solar and geothermal, long-time vegetarian and composter
- I will do whatever I can. GIVE ME MORE OPPORTUNITIES FOR ACTION. INVEST IN PLANTING TREES IN WINNIPEG. Please be careful about solutions that the rich can buy their way out of. Not flat fee - % of income instead.
- I would love to carpool and reduce emissions that way, especially with the new ride-sharing bylaw, reduce electricity usage and encourage others to do the same
- I will renew my efforts to cycle grocery shopping. I plan to reduce lawn size and replace with shrubs, tomato plants that use less water.
- I will encourage more people to bike by organizing fun rides that introduce people to low-stress bike routes that they might not be aware of.

- I already cycle and walk 12 months of the year and we have no car. What would interest me is incentives/loans/etc for re-insulating my home-should include a consult as to cost and what actually has to be done to achieve acceptable “R” levels.
- Our family only leaves our house 60x per year
- I will continue to ride my bike every day all year round. I will heat my house with electricity when hydro lets me. I will power my home with solar, wind power when possible. I will continue to compost, drive less, turn the heat down.
- I will continue to cycle. I will continue to recycle and compost. I will continue to increase how much of my own food I grow. I will help my neighbourhood learn how to grow their own food. I will implement as much energy efficiency as I can in my home.
- Home attic insulation upgrade. Window upgrades. Active Transit. Lobby to see CO2 tax revenues allowed to green
- I will bike more when there are better, safer bike paths connecting the main hubs in our city. I will keep composting with Compost Winnipeg and encourage my neighbours to compost with me.

Subject:	**City of Winnipeg Climate Action Plan Online Ideas Jam**
Date:	December 7, 2017
Meeting Date:	November 28, 2017
Location:	City Hall, Winnipeg, MB
Prepared By:	Urban Systems

1.0 Introduction

Recognizing that climate change is a serious global environmental problem, the City of Winnipeg is moving forward to develop a community climate action plan, an initiative called the *Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People*.

- To supplement other engagement tactics for the Climate Action Plan, the project team used social media to host a Facebook Live Online Ideas Jam. Over the course of a noon hour, the City and Urban Systems hosted an active, online discussion on the City's Facebook page. The video can be found here: https://www.facebook.com/cityofwinnipeg/videos/10156030496045962/

2.0 Online Ideas Jam Outcomes

- Provide context and background information for the Climate Action Plan project
- Report back on some of the themes found in the Kick-Off event to see if the project team was on the right track
- Brainstorm actions the City should take to reduce GHG emissions within the following sectors: transportation, buildings, and waste
- Use innovate methods of engagement to reach a different and larger audience to provide input into the Climate Action Plan

3.0 Online Ideas Jam Format

The Online Ideas Jam took place on November 28th at noon, CST at City Hall in Winnipeg, MB. The online event was hosted by Erin Welk of Urban Systems and Lindsay Mierau, Environmental Coordinator at the City of Winnipeg. The event lasted roughly 50 minutes and took a conversational tone between Erin and Lindsay. Lindsay introduced the project and Erin provided a recap of the themes that emerged at the Kick-Off event on November 10th and encouraged viewers to provide additional feedback on themes and content that was being discussed -- particularily within the sectors of transporation, buildings, and waste.

The event also featured two progam guests: Danika Harland, a high-school student from J.H. Bruns and Stephanie Whitehouse, the Active Transportation Coordinator with the City of Winnipeg. Danika shared her own Climate Story and encouraged others (including the City of Winnipeg) to take bold actions to reduce GHG emissins.

Stephanie Whitehouse was brought into the conversation on the Transportation sector and provided insight within her area of expertise.

Over the course of the event, the following questions were posed of the viewers:

- What can the city do to help you implement green energy solutions at your home and business? (I.e. require it at time of new building, provide incentives to reduce costs, enforce more stringent energy efficiency codes?)
- What do you think the climate vision for Winnipeg should be?
- What are the key opportunities related to reducing GHG emissions from transportation?

4.0 Online Ideas Jam by the Numbers

As of December 12, 2017, there were a total of 47 comments, 31 likes, and 3 shares on the Facebook Live video, itself. Individual comments can be found in Section 7.0, which garnered a total of 65 likes on the comments, themselves.

The following social media statistics were provided by the City of Winnipeg, which shows the online stats immediately after and one week following the online event (**Table 1**).

Table 1. Facebook statistics for Winnipeg's Online Climate Ideas Jam immediately after and one week after the event.

	November 28, 2017	December 5, 2017	% change
POST PERFORMANCE			
Peak Live Views	34	34	↑ 0%
Minutes Viewed	1309	2077	↑ 59%
Video Views	648	1542	↑ 138%
10-Second Views	257	618	↑ 140%
Video Average Watch Time	0:59	0:39	↓ 34%
AUDIENCE ENGAGEMENT			
People Reached	2745	4674	↑ 70%
Unique Viewers	605	1360	↑ 125%
Post Engagement	81	131	↑ 62%
Top Audience	Women, 25-34	Women, 25-34	--
Top Location	Manitoba	Manitoba	--

5.0 Engagement Results Summary

Social Media Analysis

Post Performance - Based on data presented in **Table 1**, the minutes viewd, video views, and 10-second views all increased by 59%, 138%, and 140%, respectively over the course of a week. This increase over time indicates the lasting power of the video and suggests that people are interested in the content even after the event ended.

Alternatively, the video average watch time was 0:59 and 0:39, which resulted in a decrease of 34% over the course of a week. The initial low video watch time may indicate that viewers are interested in the subject matter – enough so to click on the video – but the lengh of the facebook live event may have been too long to watch from start to finish. The fact that viewers were clicking on the video at all indicates an interest in the subject matter and

the low watch time may also be indicative of a content consuming culture that likes their information in as concise way possible.

Having the video as part of the video archives on the City's Facebook page is great way to continue to get additional engagement on the posted content and to illustrate the City's commitment to using unique engagement tactics.

Audience Engagement – Based on the date presented in **Table 1**, the number of people reached, unique views, and post engagement increased by 70%, 125%, and 62%, respectively. This increase further illustrates the lasting power of the video and suggests that people are interested in the content even after the event ended.

Engagement Results Analysis

As of December 12, 2017, there were 47 comments on the Facebook Live video. All comments can be seen in Section 7.0, where they have been ranked according to the number of LIKES they received by other viewers. The top eight comments focused on the following topic areas: public transit, policy, active transportation, incentive programs, building energy, and recycling.

The top eight comments (with the most LIKED comment at the top) included the following:

- I would love to see greater investment in transit, as many of our buses are jam packed and leaving people behind at rush hour **(7 LIKES)**
- Target dates should align with election cycles so that progress towards them will be reported in the summer/fall of an election year. This **provides** political motivation to achieve targets **(5 LIKES)**
- Policy drives action. Some important policies that the city could adopt to reduce our transportation emissions include:• Snow Clearing Policy to promote walking, cycling and transit, • Complete Streets Policy to Ensure our Streets accommodate all users, • Vision Zero Policy to ensure our roadways are safe, • Transportation Mode Hierarchy to ensure that walking, cycling and transit are prioritized in city budgets **(5 LIKES)**
- Investments in Walking and Biking bring Co-benefits beyond their GHG reductions: Health Benefits, Job Growth – Especially through Small Businesses, Increased Tax Base & Revenues, Increased Home Values, Reduced Fatalities and Serious Injuries, Vibrancy (Culture, Street Activity) - Will co-benefits be considered as part of the action plan? **(5 LIKES)**
- I think investing in Active transportation to shift Winnipeg away from car-driven development will do wonders for our city in terms of health and well being **(4 LIKES)**
- Building energy makes up a significant portion of our community GHG emissions. We have a strategy for city owned buildings planning to be built or renovated, but what can we do to incentivize private buildings to reduce their current consumption habits? **(4 LIKES)**
- Protected bike lanes are even more important in the winter than in summer... **(4 LIKES)**
- According to a general estimate, recycling 50,000 mattress per year in Winnipeg would save over 1,000 tonnes of CO2 gas every year. That's the equivalent of taking 200 cars of the road or planting 1,865 trees every year. Recycling 50,000 mattresses typically recovers diverts over 550 tonnes of steel, 90 tonnes of wood and 60 tonnes of foam products from the landfill. According to the experience of numerous mattress recycling operations in other jurisdictions, recycling 50,000 mattresses could create over a dozen a full-time jobs. **(4 LIKES)**

6.0 Closing

This unique approach to public engagement was an excellent way to reach a different audience and engage in a new way. All relevant comments will be used to form the actions as part of the draft Climate Action Plan, which will be presented to the public and stakeholders in February of 2018.

7.0 Facebook Comments from the Facebook Live Online Climate Ideas Jam

COMMENTS	LIKES
I would love to see greater investment in transit, as many of our buses are jam packed and leaving people behind at rush hour	7
Target dates should align with election cycles so that progress towards them will be reported in the summer/fall of an election year. This provides political motivation to achieve targets	5
Policy drives action. Some important policies that the city could adopt to reduce our transportation emissions include:• Snow Clearing Policy to promote walking, cycling and transit, • Complete Streets Policy to Ensure our Streets accommodate all users, • Vision Zero Policy to ensure our roadways are safe, • Transportation Mode Hierarchy to ensure that walking, cycling and transit are prioritized in city budgets	5
Investments in Walking and Biking bring Co-benefits beyond their GHG reductions: Health Benefits, Job Growth – Especially through Small Businesses, Increased Tax Base & Revenues, Increased Home Values, Reduced Fatalities and Serious Injuries, Vibrancy (Culture, Street Activity) - Will co-benefits be considered as part of the action plan?	5
I think investing in Active transportation to shift Winnipeg away from car-driven development will do wonders for our city in terms of health and well being	4
Building energy makes up a significant portion of our community GHG emissions. We have a strategy for city owned buildings planning to be built or renovated, but what can we do to incentivize private buildings to reduce their current consumption habits?	4
Protected bike lanes are even more important in the winter than in summer...	4
According to a general estimate, recycling 50,000 mattress per year in Winnipeg would save over 1,000 tonnes of CO2 gas every year. That's the equivalent of taking 200 cars of the road or planting 1,865 trees every year. Recycling 50,000 mattresses typically recovers diverts over 550 tonnes of steel, 90 tonnes of wood and 60 tonnes of foam products from the landfill. According to the experience of numerous mattress recycling operations in other jurisdictions, recycling 50,000 mattresses could create over a dozen a full-time jobs.	4
And to add to Jessica's idea, it would be great to see more work on organic waste diversion. Organics break down into Methane in landfill... Methane is a more potent GHG than CO2	3
how will our work on reconciliation intersect with this climate plan?	3

COMMENTS	LIKES
Many small businesses rent space so aren't in charge of the energy systems of the building they occupy, but they do pay for portions of the energy bills. Perhaps the city has a role in addressing this challenge by working with landlords to implement energy audits?	3
Further to my comment about co-benefits, Minneapolis did a study in 2015 that looked into the benefits that would be accrued from a doubling of their number of trips made by biking each year. Presumably the benefits for Winnipeg would be similar. https://altaplanning.com/.../minneapolis-bicycle-benefits/	3
It's hard to hear that the city wants more accessible, equitable transit services with all the cuts to transit in the last budget	2
How about Manitoba Race to Reduce???	2
Great job taking the initiative to change your community!!	2
Creating a downtown cycling grid would make cycling accessible to everyone in the city	2
more info on the Prairie Climate Centre here: http://prairieclimatecentre.ca/	2
Increase recycling options for the public and support social enterprise. Such as: Mother Earth Recycling and mattress diversion from landfills while creating jobs	1
How do you wish to see the climate plan impact city decisions, including impacting the budget and determining project approval?	1
manitoba hydro is a crime..	1
Reduce packaging waste by making retailers pay for the disposal of packaging their customers send to the dump	1
Thanks for the opportunity to send in ideas.	1
how many winnipegers were "asked" what was your total number,.. if you say "50%" of them meanwhile 50% of the population didnt have their voice heard... some pretty skewed numbers here	
"climate action team" and how much money do you make sitting there tossing around idea's that will never come to fruition???	
How will the need to ensure the climate resilience of Winnipeg be built into the GHG reduction plan?	
In response to a call for social justice ideas: How can the city amplify the voices of marginalized communities? Can we designate seats on sustainability committees and such for folks that aren't industry/government professionals?	

COMMENTS	LIKES
7.5 million square feet of public and private owned buildings are currently aiming to reduce their energy consumption by 10% over the next 3 years. It's a start. Behavioural changes are a big part of it.	
To build on Maureen's point - representation from hydro-affected communities in decision making on Winnipeg's climate plan, and representation from community-based organizations working to address poverty and environmental racism	
Got all the hydro you could want, why are we not going towards lrt transit	
I NEED WORK AT WINNIPEG, ANY OPPORTUNITY HERE	
stay home..	
Way to go Lindsay♡	
I would love to see more effort given to composting pick up, continue alternative transit, and replacing the trees that have been removed because of Dutch elm disease. Our street has lost 4 trees in one block.	
weed... weed fixes all. over n out	
fire all polititians... all of em.	
hahaha.. grow weed.	
We need to be investing more into transit, not less.	

**Note – City of Winnipeg comments were not included in the above engagement feedback*

Winnipeg

Winnipeg's Climate Action Plan

Planning for Climate Change • Acting for People

Public Priorities Workshop Engagement Summary

February 27th, 2018

Table of Contents

1 Introduction 1

2 Public Priorities Workshop - Intended Outcomes 1

3 Recording Engagement Feedback 1

4 Event by The Numbers 1

5 Engagement Analysis Methodology 2

6 Workbook Results Summary 2

Buildings (Residential, Commercial, Institutional, Industrial) 2

Land Use (How we build and grow our city) 6

Transportation 9

Waste 13

7 Dotmocracy Exercise 16

8 Engagement Workbook 21

9 Large Posters – Dotmocracy Exercise 22

10 Public Workshop Engagement Workbook Feedback 23

1 Introduction

Recognizing that climate change is a serious global environmental problem, the City of Winnipeg is moving forward to develop a community climate action plan, an initiative called the *Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People*.

This public workshop builds on a series of other engagement activities by focussing discussion topics on what was previously identified as priority areas for addressing climate change. These topics include: buildings, land use, transportation, and waste. Workbooks were provided to participants with questions specific to each of these topics to further guide discussion and ideas on these priority areas.

2 Public Priorities Workshop - Intended Outcomes

- Provide participants with an opportunity to learn about the City's Climate Action Plan and present major milestones in the project – what has been done to date and what is upcoming.
- Provide a description of activities and outcomes from the first phase of the project, including key themes identified during the first phase.
- Collect feedback from participants while they discuss and reflect on key actions that are part of the draft Climate Action Plan.
- Collect input from Winnipeg residents on 4 climate action plan topics that required more in-depth community input (buildings, transportation, land use, waste).

3 Recording Engagement Feedback

The bulk of participant feedback was collected in engagement workbooks. See Section 8 for a copy of the blank workbook.

Large posters were used for a dotmocracy exercise which aimed to collect information to help the City prioritize and explore perspectives about financing the implementation of actions contained in the Plan. The questions posed were as follows:

- Help us understand your priorities for Winnipeg's Climate Action Plan. Use the 5 dots provided to highlight which strategic directions are most important to you.
- Do you support the City allocating a portion of general revenue to a Climate Action fund to support the implementation of key climate mitigation actions? Yes | No | Unsure
- Would you support tax or fee increases in order to support Climate Action initiatives? Yes | No | Unsure

See Section 9 for a copy of the blank posters.

4 Event by The Numbers

- 56 event attendees
- 32 engagement workbooks (see Section 10 for all engagement feedback)

5 Engagement Analysis Methodology

Open-Ended Questions

The workbook was comprised of open-ended questions where answer choices were not provided, responses were categorized into themes that emerged. Some responses contained multiple themes, while others only one or two. Themes were not calculated as percentages due to the small sample size. Responses that did not fit into a theme were classified as 'other.' All full written responses collected in the workbooks are provided in Section 10.

Dotmocracy

Participants were handed dots (five stickers) in order to answer the three questions on large poster boards. Participants were given an opportunity to use sticky notes to provide rational for their answers. The number of answers in each of the categories was counted.

6 Workbook Results Summary

Public Priorities Workshop participants had the choice of discussing three out of four of the following topics contained in the workbook:

- Buildings
- Land use
- Transportation
- Waste

Participants moved to a table where discussion was facilitated in a group setting about each topic. Participants discussed their ideas, listened to others at their tables, and recorded their ideas in their workbook. Below is a summary of the questions and select responses for each topic area.

Buildings (Residential, Commercial, Institutional, Industrial)

Q1: The City is considering several opportunities to help encourage building owners to comply and 'go beyond' current Energy Code requirements in new construction:

- *Incorporate energy performance requirements in the City's land use and development approval processes.*
- *Require storm water management through tree canopies and green roofs to enhance the energy efficiency of buildings.*
- *Increase enforcement of the energy efficiency requirements in the Building Code*
- *Provide financial incentives to building owners that encourage high energy efficiency performance*
- *Launch an education and awareness campaign about opportunities to make changes to new home construction*

Which should be top priorities for the City? Why? Who are the key community partners?

The following themes emerged:

Theme: Construction

Many participants indicated that promoting the use of green building materials and high efficiency construction processes will reduce the greenhouse gas emissions from new development.

What You Said

- Start simple, with energy efficient lighting/plumbing and retrofitting. Standardization is relatively simple to implement without manually rewriting large portions of building code. Properly insulated buildings require far less energy to heat (and cool).
- Zero net energy requirement for all new development.
- All city examples or city funded buildings should meet LEED standards (Lead by example).

Theme: Energy Efficiency and Renewable Energy

Participants specified that increasing energy efficiency along with specific renewable energy requirements for solar should be a priority for new construction.

What You Said

- Energy audits.
- Subsidize and install solar panels.
- Require solar panels on all build-ups. Adopt positive energy performance standards. Require that all buildings be engineered to a longer service life (centuries instead of decades).
- Zero net energy requirement for all new development.
- Incorporate energy performance requirements in the city's land use and development approval process.

Theme: Education

Participants noted the importance of providing education opportunities to the public. Topic areas might include reducing energy use in buildings, related opportunities for new development. This could be a helpful tool for increasing awareness of both the significance of climate action and how small lifestyle changes can be impactful.

What You Said

- Launch an education program on new home construction; include education on how to improve homes by going above and beyond code.
- People will be motivated when we educate them about how serious climate change is.
- Provide support funding to youth-based empowerment programs (ex. BUILD and AKI energy models) to help them learn and support community green retrofits. Include training programs. Promote career skills appropriate to 'jobs of the future.

Q2: Here are a few actions we are considering to reduce GHG emissions in existing buildings:

- *Provide resources to support energy audits of existing buildings.*
- *Provide financial incentives to building owners that increase energy efficiency or install renewable energy systems.*
- *Develop loan or grant incentive programs to support energy efficiency or renewable energy upgrades.*

Which should be top priorities for the City? Why? Who are the key community partners that should be involved?

Participant responses varied and a range of ideas were recorded. A key priority for participants was for the City or other partners to provide incentives to take action. Manitoba Hydro, BUILD, the Aboriginal Centre and local neighbourhood associations were identified as key community partners. The following themes emerged:

Theme: Incentives

Participants indicated that the City needs to provide incentives to better encourage residents to improve the energy performance of their homes and other daily choices.

What You Said

- Pay as you save loans for green technology.
- The only reason any building wouldn't be built with more "green" technology is usually cost; Offsetting the initial "sticker shock" via subsidization could turn people to such things.
- I would love to see the city provide loan and incentive programs above and beyond what Manitoba Hydro and LEED provides.
- Provide financial incentives to building owners. Remove deadlines and undertake more marketing about the incentives; make them available for a longer period of time. Set some requirements for older buildings or large land developers. Set mandatory requirements and approval processes. Give tax breaks for improvements. Do inspections of buildings to ensure they measure up to new codes of energy efficiency. Make it a regulation.

Theme: Energy Audits

Participants specified that if energy audits are encouraged or required, building owners can be encouraged to reduce building energy and emissions.

What You Said

- Energy audits for large commercial buildings and property.
- Maybe there should be a penalty for not having an energy audit.
- Many cities require audit and energy leadership as conditions of sale. Set a net zero target and work back from there to required codes.

Q3: If each residential and commercial building had a label detailing how much energy it used (like the energy star labels on appliances), would this help you understand energy use at home or work? What are challenges and benefits of this type of program that we should consider?

There was little consensus evident in the responses in terms of the practicality of an energy labeling program, and the associated challenges and benefits. Most participants suggested that the labeling program would be beneficial but were not convinced of its value over other actions. Key challenges highlighted included reliability and the cost and administrative burden of running the program. A building energy label may only reflect the theoretical energy used in a building, and therefore be significantly impacted by the habits of building occupants.

Several participants highlighted that a building labeling program should be combined with an incentive program to assist with changes to the building once a label has been produced.

What You Said

- A more informed population is definitely needed, and giving buildings a rating might accomplish that, but only if the rating provides some kinds of incentive. Otherwise, I feel that it could be perceived as bureaucracy or red tape.
- I think seeing how your neighbours' use rates compared to your or your other neighbour is a great incentive. Need to have something to compare to.
- I think people who are interested in their impact on the environment will care to consider this information and use it to make a change. The challenge would be to encourage/promote this kind of program amongst individuals who aren't as knowledgeable or interested in their impact on the environment. This might be achieved with further education and incentives.

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in increased building efficiency or renewable energy systems?

Cost savings were highlighted by participants as key motivating factors that support increased building efficiency or renewable energy systems. In the absence of the City offering direct financial incentives to support action, education and regulation were key themes.

Theme: Education

Participants indicated that the City needs to increase awareness amongst residents of the energy saving potential associated with efficient and renewable energy systems. Several participants highlighted that access to information was important and suggested offering a list and contact information for builders and contractors who are knowledgeable in efficient building techniques.

What You Said

- Look at the media campaigns done in the 1970s during the energy crisis. They gave values to actions (i.e. turning off lights in rooms not used saves $/year).
- People in this city like things cheap above all else. I'm not sure exactly how (not my field of expertise) but if the public can be shown how much money they'd save on bills, I suspect more would care about greener practices.
- More education than is currently available, including options, how individuals can save money by using efficient and renewable energy systems. Provide lists/contact information for contractors who are knowledgeable in using/building these systems.

Theme: Municipal Regulations

Participants specified that further flexibility and innovation is required within municipal regulations, in particular in the application of the Building Code and the Zoning Bylaw.

What You Said

- Expand zoning and bylaws for green technology.
- Building codes – targets within planning and approval process.
- Regulated standards for new and major renovations. See BC's Step Code as an example for setting targets locally.
- City should be more flexible and innovative in making or encouraging changes in citizens motivations. Zoning and bylaws are not up to date.

Land Use (How we build and grow our city)

Q1: The City is considering the following actions for Winnipeg's Climate Action Plan related to land use.

- *Support infill development in Transformative Areas (existing built areas of Winnipeg that are experiencing a lot of change) of Winnipeg to increase overall density*
- *Increase density of new development areas*
- *Design and implement (active) transit-oriented development*
- *Support redevelopment of old/abandoned industrial properties*
- *Preserve and expand urban forests*

Which should be top priorities for the City? Why? Who are the key community partners?

The themes that emerged are very interconnected and pertain to changes in urban form that in turn affect lifestyle choices. Specific ideas regarding key community partners were not identified during these discussions.

Theme: Protect Green Space

Many participants indicated that protecting existing and developing new parks, natural areas and urban forests is important to overall quality of life.

What You Said

- Preserve and expand urban forests.
- Designate each school a park nearby.
- Small parks in dense areas are important for those without yards.
- Expansion of urban greenspace is important to make the city more interesting. I believe all river banks should be parks.

Theme: Compact Development

Participants indicated that increasing densities in new and existing neighbourhoods will reduce sprawl and the unnecessary use of resources. Participants suggested more compact neighbourhoods will also allow for the improvement of transit services.

What You Said

- Design and implement transit-oriented development. Support infill development. Increase density of new development areas.
- I support densification as long as buildings are architecturally interesting and not all built in a short span of time
- Increase density in new and old communities.
- Transit system to create stations which will be the centre of a network of walkable communities surrounded by services. Then walk home to high density passivhaus 3-5 storey residences which create density on smaller physical footprints.

Theme: Alternative transportation modes

Participants highlighted their understanding of the connection between more compact, higher density development and the ability to provide alternative transportation modes. Many participants suggested that increased density could reduce travel times and energy use.

What You Said

- Transit-oriented development and densification must prioritize lifestyles and modes of transport that do not favour cars.
- Ensure that the city grows in ways/areas that can be serviced effectively and efficiently by transit.
- Less distance to travel = less fuel burned. Greater density also lends itself to easier implementation of transit (i.e. Don't have to make routes go "out of the way").

Q2: Climate actions can also involve the City helping to stop certain activities that have been part of how we have lived in the past. One is how we design, and where we build new neighbourhoods. Traditionally development has been cheapest to both build and purchase in the suburbs further from employment centres and transportation choices. It's one of the reasons we spend lots of time in our cars. This link between land use and transportation is a key priority for the Climate Action Plan since transportation makes up almost half of the city's total GHG emissions. And we aren't saying development needs to stop. But we need to start to shift how we grow.

One way to manage growth to support climate action is by directing it to specific areas and setting strong urban growth boundaries.

Are you generally in favour of directing growth to specific areas and setting city growth boundaries (no development outside of the city growth boundaries)? Yes | No | Unsure.

More than half of the respondents indicated that they are in favour of directing growth to specific areas and setting growth boundaries.

What needs to happen in Winnipeg to increase density and support infill development? Describe your answer below. Who are the key community partners?

Several participants highlighted the importance of diverse amenities located within close proximity of homes (such as groceries, schools, banks, pharmacy and more). Several others highlighted challenges with current parking regimes and called on the City to limit parking adjacent to roadways, and remove maximum parking regulations.

Theme: Transit-oriented, walkable development

Many participants indicated that they would like to see more compact development that allows for convenient walking, transit and cycling. These two concepts go hand-in-hand help change urban form in a community.

What You Said

- Would like to see banks, grocery stores, pharmacy, etc. within walking distance of home. Would like to see box stores in malls and closer to bus stops.
- Build grid-based walkable communities and get rid of mandated parking.
- We need to build a model walkable complete community so that we can promote the concept as a real life positive choice alternative to single detached, low density, car dependent shopping centre, box store life choice.
- Need to enable and favour infill development projects. A key barrier is when projects are able to be halted by small groups of citizens with a not-in-my-backyard attitude. Projects that meet goals or criteria (to be defined) that support the climate action plan should be given weighted consideration, with a higher level of proof put on those trying to stop infill/densification development.

Q3: The City is considering ways to preserve and expand urban forests with the following actions:

- *Implement policies and bylaws that further protect critical greenspaces*
- *Increase investments into the expansion of existing urban forests and canopies*
- *Subsidize residential and commercial land owners to plant new trees*

Which should be top priorities for the city? Why? Who are the community partners that should be involved?

Most participants agree that maintaining urban forests is a top priority. One participant made a note to ensure that subsidies for tree planting also go to maintaining the trees.

What You Said

- Increase investments into the expansion of existing urban forests.
- Pocket parks should be considered. Some cities have developed pocket parks in conjunction with streetscaping, especially at intersections where directions are considered to reduce cut through traffic.
- Create more green corridors connecting neighbourhoods (e.g. West End). Help city residents to access parks and conservation areas outside of the City.

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the city of Winnipeg encourage Winnipeggers to invest in density and infill development?

Few concrete ideas emerged for alternatives to direct financial incentives to support density and infill development. Several participants suggested that disincentives to sprawl and development at the edges of the City could help to encourage infill. Another participant suggested that promotion of alternative lifestyle to the low density norm is necessary. What is clear from the responses is that participants can envision the benefits that come from a City comprised of complete communities.

Theme: Complete Communities

What You Said

- Thoughtfully design neighbourhoods – community green space, grocery, gym, other amenities, walkable areas, increased opportunities for commuting via cycling, master plan/design process that allows for long-term planning.
- Complete communities, grocery stores walking distance, infill green spaces.
- Support community festivals. Neighbourhood block parties, music concerts.
- Demonstrate a complete community neighbourhood. Show how family finances can change with no energy costs for passivhaus multiplex, no car payments and no Autopac bills, pooling/sharing resources. Now money can be redirected to other interests, needs, wants. Could even reduce the amount of paid employment needed.

Transportation

Q1: There are many possible features that could increase transit use in the City:

- *More frequent transit schedule (less than 10-minute wait)*
- *Rapid transit routes*
- *Bike racks on all buses*
- *Additional routes (to/from___)*
- *Increased cost of parking at destination*
- *More park and ride opportunities*
- *Better technology to integrate all transportation options and payments*
- *Better route and schedule information*
- *Improve active transportation and transit connectivity*
- *Secure bike parking*
- *Other:____*

Which should be top priorities for the City? Why? As you answer this question, consider what would help you take transit more often. Who are the key community partners? If you don't take transit, what might convince you to consider it?

Participants were asked to provide their own individual opinions on what the City can do to make transit service better to increase ridership. Several participants highlighted the importance to switching to an electric bus fleet. A few additional themes emerged from the answers:

Theme: Improve Service Schedule and Reliability

Many participants indicated that the frequency of the current transit service must be increased to improve reliability of the system and encourage ridership.

What You Said

- Rapid transit should be finished as soon as possible. More timely buses, especially at night are critical; on one of my routes the wait times are around 40 mins after 9pm.
- Studies say frequency. Frequent transit – make transfers easier, makes spontaneous trips possible, makes transit competitive.
- Frequent service, sky train, more reliable, filler bus-shuttle bus.
- 24 hr, 15 min schedule – reliable/consistent/safe. Make routes available all day not just during rush hour, use smaller buses if needed. No 'out of service' buses unless they are broken.

Theme: Better Integration

Participants indicated that the current transit system is not well-integrated with technology, making it difficult to use and less appealing. Safety was also raised as an issue by several participants although they did not elaborate on their comments.

What You Said

- Reloading Peggo card on demand to use immediately.
- From where I live, it is a long walk to the route I need, or a long commute with changes to get where I need to go. It is not convenient, or appealing.
- Increasing the ease of taking and using transit. At this point in time, it's simply more convenient and easier to take my car. Make transit more safe to use.

Theme: Connectivity to Other Modes

Participants indicated that the transit service needs to be better connected to other modes of transportation, including walking, biking, car co-ops, and park and rides.

What You Said

- Coordinate busy stops with additional bike racks, car co-op stops, park and ride
- Bike racks on all buses.
- Implementing a system in which different types of transportation are coordinated and easy to use. Park and ride options.

Q2: What is your greatest motivation for using active transportation (walking, cycling) to get around the City? Check all that apply.

- *Convenience*
- *Exercise/health*
- *Affordability*
- *Reducing GHG emissions*
- *Other_____*

Provide rationale for some of your choices below.

Participants were asked to provide their own answers for why they are motivated to use active transport in Winnipeg. The following themes emerged:

Theme: Cycling Infrastructure

Some participants indicated that they are currently motivated to cycle because of the provision of cycling infrastructure, and that motivation would increase further if there was a greater abundance of infrastructure in place.

What You Said

- Bike trails/lanes (actual lanes) would help.
- Public bike share, integrated bike paths, protected bike lanes.
- Would be interested in cycling through winter but only on protected bike lanes or pathways that are quickly and predictably cleared of snow.
- Make transit something everyone wants to use instead of something some have to use! Make it a great experience: friendly, clean, easy, timely. Need more bike lanes and better connectivity. Bike education. Partners: community bike hubs, The Wrench, Active to Safer Routes to school, Green Action City, University Student Association.

Theme: Convenience

Some participants indicated their motivation for using active transport modes is the convenience it provides.

What You Said

- Convenience – it's easy to know approximately how long it will take to get to destinations.
- Convenience, exercise/health – in summer the routes are easy and clear.
- Living and working in the core area it is much more convenient to walk or bike – being shackled to a car, the hassle of parking.
- Convenience – I live in a relatively high-density neighbourhood, I can access most of my needs within a five-minute bike ride.

Theme: Health Benefits

Participants also indicated that they are motivated to use active transport modes because of the added health benefits.

What You Said

- Exercise/health for my own mental health and well-being.
- For me, incorporating walking and biking into my life is for physical health benefits, but I also gain by not paying for a car or bus service.

Q3: Electric vehicles offer an opportunity to drastically reduce GHG emissions from vehicle use – a priority area also identified in the provincial and federal climate action plans.

Would you like to see the city support EV uptake by investing in public charging stations? Are there other actions the City could take to increase uptake?

Participants were asked to provide individual opinions on municipal investment in electric vehicle infrastructure. Most participants agreed that they would like to see such investment by the City (61%). Comments did not focus on how the City can increase uptake, but instead focused on the challenges of electric vehicle technology and the need for the city to prioritize effectively.

Theme: Prioritize Transit and Complete Communities

Many participants indicated that even if the City increases investment in electric vehicle infrastructure, investment in transit and complete communities should not be decreased.

What You Said

- Not a huge fan of electric vehicles since it simply allows/encourages solo driving commuter behaviour. It doesn't offset issues of congestion, parking, maintenance that comes with single-passenger vehicles. More interested in buses/public transit and electric buses.
- A functional transit system is a much more important priority. Buses carry so many more people – less wear on infrastructure.
- We need to step away from the car culture mindset and focus more on alternative transportation options – electric buses.

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the city of Winnipeg encourage Winnipeggers to invest in, or utilize sustainable transportation options?

Participants provided individual feedback on how the City can better support and invest in sustainable transportation. Two themes emerged from this question:

Theme: Convenience

Some participants indicated that the best strategy for encouraging residents to use sustainable transportation options is to make these modes more convenient so residents choose them over an automobile.

What You Said

- Convenience of the routes in terms of accessibility by pedestrians to pedestrian-friendly, dense areas of the city. It seems easy to get to a shopping mall by bus, but not to other areas.
- Ease of use – reduce time for trips (ie. Shorter transfer times, more express busses).
- Find creative ways to make sustainable transportation options more convenient than using vehicles.

Theme: Incentives

Despite the question's focus on providing non-financial examples for encouraging alternative transport modes, many participants still indicated that financial (dis)incentives may be a good option for changing behaviour.

What You Said

- Financial disincentives to drive/park in key areas.
- Put tolls on roads coming into the City of Winnipeg and prevent sprawl and generate revenue.
- Increase costs of operating vehicles and have them pay their way (e.g. gas tax increase, parking charges in shopping centre parking lots, property tax – add value to house strategy).

Waste

Q1: One of the key focus areas for the Climate Action Plan is to reduce the amount of waste generated. The less waste generated in our homes and businesses means less waste transported and processed in Winnipeg's landfill.

How can the City and its communities help you to reduce waste? What would help you reduce waste in City facilities or commercial buildings?

Participants were asked to indicate their individual thoughts in the workbook on additional efforts the City can take to reduce overall waste levels. Curbside composting was a consistent theme throughout the responses. Other suggestions included making it easier and more convenient to recycle certain materials such as batteries, glass, and aluminum containers, or use improved technology to divert recyclables from garbage. One key theme emerged:

Theme: Composting

Many residents indicated that the implementation of a composting program will greatly assist in reducing waste.

What You Said

- Improve composting options – community space for compost in dense neighbourhoods that have limited/no yard space
- The city should provide a composting service. This would greatly reduce household waste. There is lot of support for this.
- Curbside composting pick up.

Q2: Educational and awareness programs can help communities both a) reduce overall amount of waste and b) ensure items that could be recycled don't go to the landfill (i.e. cardboard, glass, plastics, electronics).

- *Workshops & events*
- *Pop up booths at other city events*
- *Newspaper articles*
- *Youtube videos*
- *Social media posts*
- *Other_____*

What types of programs should be top priorities for the City? Who are the key community partners?

A variety of suggestions included education via social media, newspaper articles and workshops. Several other ideas emerged to focus educational campaigns around youth, and incorporate information on the side of recycling containers. One participant suggested that education should focus on what and how to recycle, rather than motivational or inspirational messages.

What You Said

- Social innovation challenges - crowd source and engage. If videos will be used, they must be clever, innovative, catchy and fun.
- Recycling is inherently complex, and training needs to fit with a very diverse multi-cultural nature of the community. Emphasize reduce.
- Workshops and door-to-door pop ups, commercials, contests, rewarding the behaviour you want. Partner with second hand shops and local non-profits who will sell to generate revenue for their operations. Also Mother Earth on recycling and waste minimization. Also with producer responsibility, organizations for education for residents and business to know why recycling their products is important and how to do it.

Q3: A number of programs can help the City focus efforts to increase waste diversion, and reduce consumption in residential, commercial, and industrial buildings:

- *Educational and awareness programming*
- *Implement a construction and demolition program focussed on building construction waste*
- *Implement a bylaw to ban materials that could be recycled or composted (i.e. electronics, used oils, cardboard, organics, etc.)*
- *Increase support for backyard composting*
- *Implement a city-wide curbside compost program*
- *Improved waste management of products containing ozone-depleting substances*
- *Other*

Why types of programs should be top priorities for the City? Why? Who are the key community partners?

A variety of ideas were raised, but common topics related to the need for more composting in the City, banning of single use plastics, and making it easier to recycle or dispose of electronics, chemicals, batteries and lightbulbs. Several participants suggested that the City should provide financial incentives for good behaviour – recycling and composting – and offset that cost by charging for waste pick up. Many participants highlighted key partners in the waste sector including: CBCRA, Province, Green Action Centre, BUILD, Compost Winnipeg, and Mother Earth Recycling. Composting was a key theme highlighted by a majority of responses:

Theme: Composting

What You Said

- Compost drop off/pick up options, centres and community options.
- Neighbourhood composting.
- Revise building code to include composting chute that will carry compostable waste into backyard.
- Increase support for backyard composting and implement a city-wide curbside program – I would like both of these.

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in waste reduction and enhance diversion from landfill?

Most participants indicated that education is necessary to provide examples of how waste reduction can be incorporated into daily tasks. A few participants highlighted regulation as being necessary, particularly for banning single use plastics or construction waste.

Theme: Education

What You Said

- Provide info/resources/tips on how to reduce household waste (e.g., Bulk Barn jar program, plastic bag alternatives).
- Make more efficient use of social media for community outreach to educate people about waste management and better consumption practices.
- More focus on re-use. Target education to working with immigrant centres, welcome centres, ensure messaging is clear for them.

7 Dotmocracy Exercise

Large posters were used for a dotmocracy exercise which aimed to collect information to help the City prioritize and explore perspectives about financing the implementation of actions contained in the Plan.

Action Plan Priorities

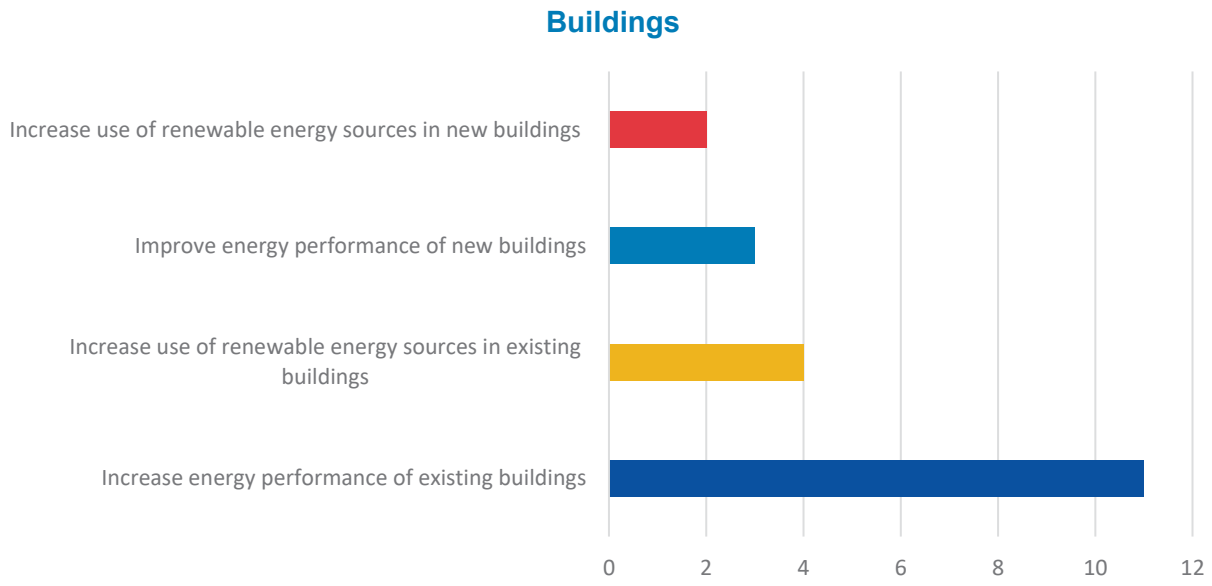
Participants were asked to allocate 5 dots to the strategic directions most important to them:

Help us understand your priorities for Winnipeg's Climate Action Plan.

Use the 5 dots provided to highlight which strategic directions are most important to you.

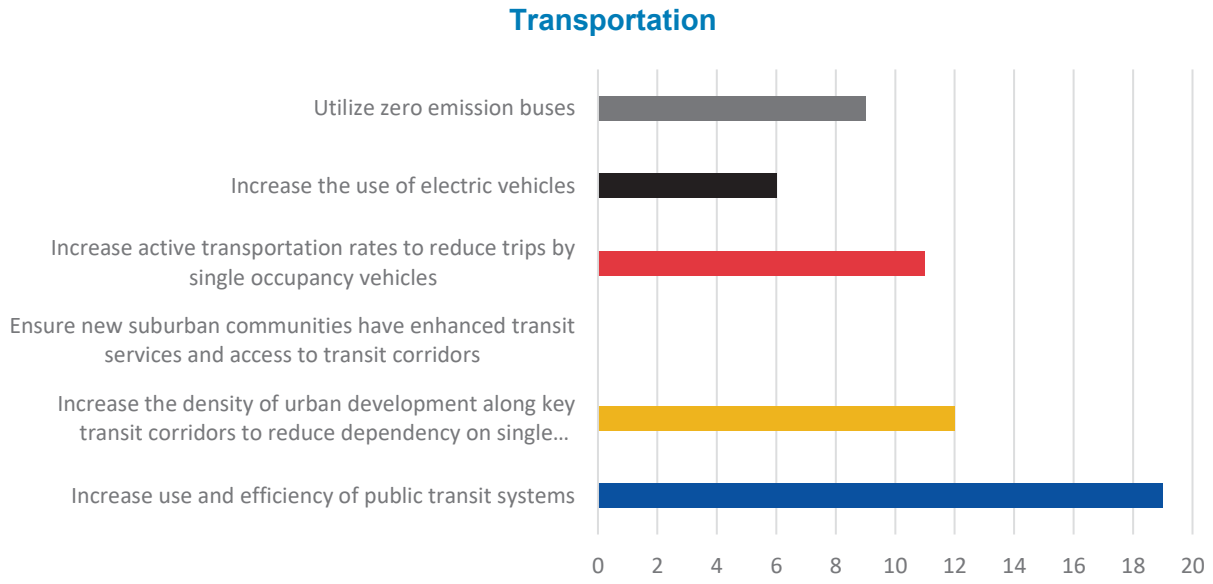
Buildings

Action	Number of 'votes'
Increase energy performance of existing buildings	11
Increase use of renewable energy sources in existing buildings	4
Improve energy performance of new buildings	3
Increase use of renewable energy sources in new buildings	2



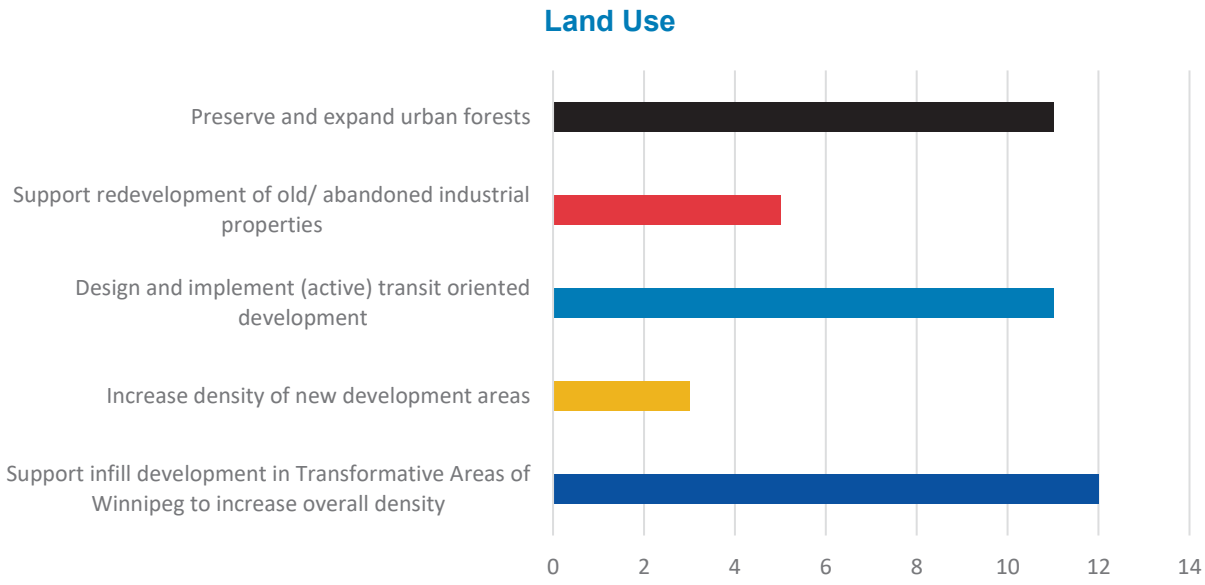
Transportation

Action	Number of 'votes'
Increase use and efficiency of public transit systems	19
Increase the density of urban development along key transit corridors to reduce dependency on single occupancy vehicles	12
Ensure new suburban communities have enhanced transit services and access to transit corridors	0
Increase active transportation rates to reduce trips by single occupancy vehicles	11
Increase the use of electric vehicles	6
Utilize zero emission buses	9



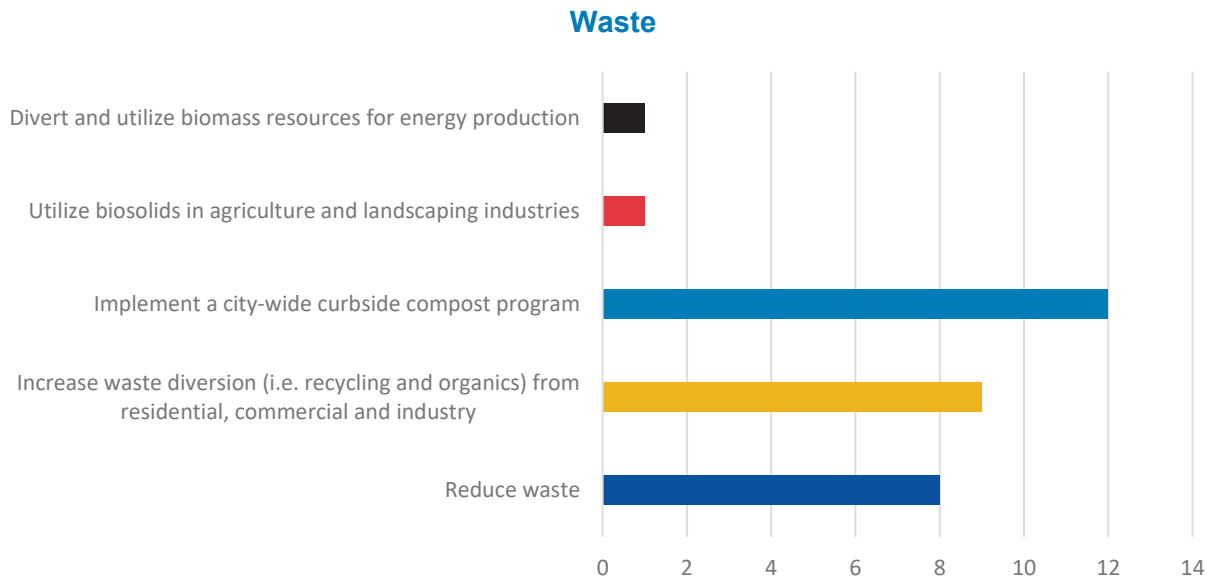
Land Use

Action	Number of 'votes'
Support infill development in Transformative Areas of Winnipeg to increase overall density	12
Increase density of new development areas	3
Design and implement (active) transit oriented development	11
Support redevelopment of old/ abandoned industrial properties	5
Preserve and expand urban forests	11



Waste

Action	Number of 'votes'
Reduce waste	8
Increase waste diversion (i.e. recycling and organics) from residential, commercial and industry	9
Implement a city-wide curbside compost program	12
Utilize biosolids in agriculture and landscaping industries	1
Divert and utilize biomass resources for energy production	1



Financing the Implementation of Climate Actions

Do you support the City allocating a portion of general revenue to a Climate Action fund to support the implementation of key climate mitigation actions?

- Yes: (22)
- No: (1)
- Unsure: (1)

Would you support tax or fee increases in order to support Climate Action initiatives?

- Yes: (18)
- No: (2)
- Unsure: (0)

What you said:

- City should not re-allocate existing resources for Climate Change. It should raise new revenue
- Perception of value is key. People in Winnipeg like things cheap. Any additional costs/taxes must have serious and tangible pros for the public to get behind it.
- Support increasing taxes from general revenue but do not support a fee increase.
- General revenue distributions should be strategically prioritized to what benefits Winnipeggers. Look at where cuts can be made, i.e. what City programs contravene climate change initiatives.

8 Engagement Workbook

Winnipeg

Winnipeg's Climate Action Plan

Planning for Climate Change • Acting for People

HELP CREATE A ROAD MAP FOR CLIMATE CHANGE ACTION

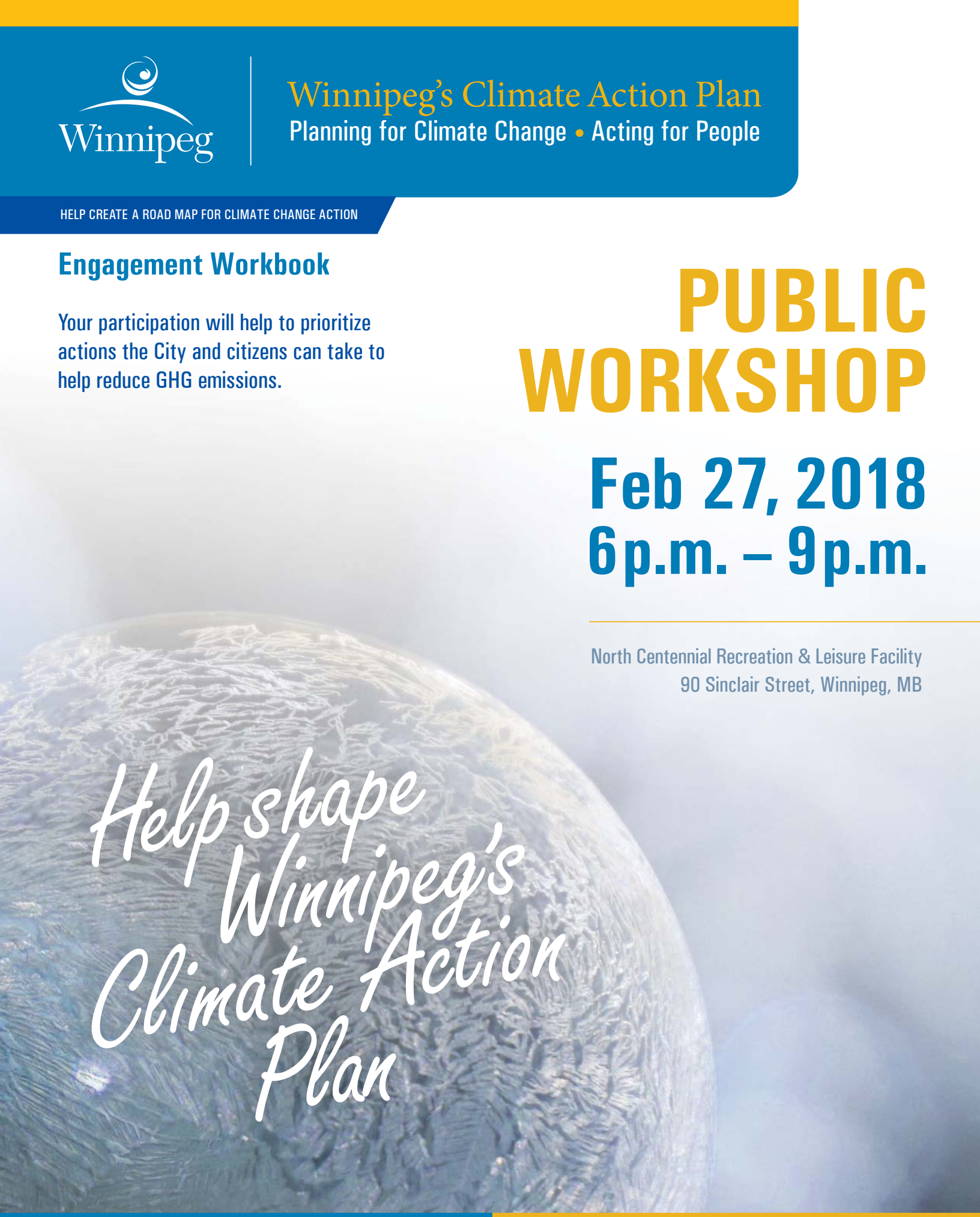
Engagement Workbook

Your participation will help to prioritize actions the City and citizens can take to help reduce GHG emissions.

PUBLIC WORKSHOP

Feb 27, 2018
6p.m. – 9p.m.

North Centennial Recreation & Leisure Facility
90 Sinclair Street, Winnipeg, MB



Thank-you for attending Winnipeg's Climate Action Plan Public Priorities Workshop. Your participation and feedback is extremely valuable and we appreciate your time, effort, thoughts, and ideas.

Recognizing that climate change is a serious global environmental problem, we are gathering today to help inform the Winnipeg Climate Action Plan: Planning for Climate Change. Acting for People. Building on what we heard through our previous activities, this workshop will help identify priorities and partners to help us curb GHG emissions, in the following areas:

- Buildings
- Land use
- Transportation
- Waste

INSTRUCTIONS

- The workbooks at your table outline the format of our discussion today. Each person keeps their workbook for the night, and hands it in at the end.
- You will have an opportunity to discuss 3 out of 4 of the topics listed above.
- Discussion will be facilitated in a group setting. Discuss your ideas, listen to others at your table, and write your own ideas in your workbook.

BUILDINGS (RESIDENTIAL, COMMERCIAL, INSTITUTIONAL, INDUSTRIAL)

Discussion Topics

1. The City is considering several opportunities to help encourage building owners to comply and 'go beyond' current Energy Code requirements in new construction:

- Incorporate energy performance requirements in the City's land use and development approval processes.
- Require storm water management through tree canopies and green roofs to enhance the energy efficiency of buildings.
- Increase enforcement of the energy efficiency requirements in the Building Code
- Provide financial incentives to building owners that encourage high energy efficiency performance.
- Launch an education and awareness campaign about opportunities to make changes to new home construction.

Which should be top priorities for the City? Why? Who are the key community partners?

2. Here are a few actions we are considering to reduce GHG emissions in existing buildings:

- Provide resources to support energy audits of existing buildings.
- Provide financial incentives to building owners that increase energy efficiency or install renewable energy systems.
- Develop loan or grant incentive programs to support energy efficiency or renewable energy upgrades.

Which should be top priorities for the City? Why? Who are the key community partners that should be involved?

3. If each residential and commercial building had a label detailing how much energy it used (like the Energy Star labels on appliances), would this help you understand energy use at home or work? What are challenges and benefits of this type of program that we should consider?

4. Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in increased building efficiency or renewable energy systems?

LAND USE (HOW WE BUILD AND GROW OUR CITY)

Discussion Topics

1. The City is considering the following actions for Winnipeg's Climate Action Plan related to land use.

- Support infill development in Transformative Areas (existing built areas of Winnipeg that are experiencing a lot of change) of Winnipeg to increase overall density
- Increase density of new development areas
- Design and implement (active) transit oriented development
- Support redevelopment of old/abandoned industrial properties
- Preserve and expand urban forests

Which should be top priorities for the City? Why? Who are the key community partners?

2. Climate actions can also involve the City helping to stop certain activities that have been part of how we have lived in the past. One is how we design, and where we build new neighbourhoods. Traditionally development has been cheapest to both build and purchase in the suburbs further from employment centres and transportation choices. It's one of the reasons we spend lots of time in our cars. This link between land use and transportation is a key priority for the Climate Action Plan since transportation makes up almost half of the city's total GHG emissions. And we aren't saying development needs to stop. But we need to start to shift how we grow.

One way to manage growth to support climate action is by directing it to specific areas and setting strong urban growth boundaries.

Are you generally in favour of directing growth to specific areas and setting city growth boundaries (no development outside of the City growth boundaries)?

Yes | No | Unsure

What needs to happen in Winnipeg to increase density and support infill development? Describe your answer below. Who are the key community partners?

3. The City is considering ways to preserve and expand urban forests with the following actions:

- Implement policies and bylaws that further protect critical greenspaces
- Increase investments into the expansion of existing urban forests and canopies
- Subsidize residential and commercial land owners to plant new trees

Which should be top priorities for the City? Why? Who are the community partners that should be involved?

4. Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in density and infill development?

TRANSPORTATION

Discussion Topics

1. There are many possible features that could increase transit use in the City:

- More frequent transit schedule (less than 10 minute wait)
- Rapid transit routes
- Bike racks on all buses
- Additional routes (to/from _____)
- Increased cost of parking at destination
- More park and ride opportunities
- Better technology to integrate all transportation options and payments
- Better route and schedule information
- Improve active transportation and transit connectivity
- Secure bike parking
- Other: _____

Which should be top priorities for the City? Why? As you answer this question, consider what would help you take transit more often. Who are the key community partners?

If you don't take transit, what might convince you to consider it?

2. What is your greatest motivation for using Active Transportation (walking, cycling) to get around the City? Check all that apply.

- Convenience
- Exercise / health
- Affordability
- Reducing GHG emissions
- Other _____

Provide rationale for some of your choices below.

3. Electric vehicles (EVs) offer an opportunity to drastically reduce GHG emissions from vehicle use - a priority area also identified in the provincial and federal climate action plans.

Would you like to see the City support EV uptake by investing in public charging stations? Are there other actions the City could take to increase uptake?

4. Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in, or utilize sustainable transportation options?

WASTE

Discussion Topics

1. One of the key focus areas for the Climate Action Plan is to reduce the amount of waste generated. The less waste generated in our homes and businesses means less waste transported and processed in Winnipeg's landfills. How can the City and its communities help you to reduce waste?

What would help you reduce waste in City facilities or commercial buildings?

2. Educational and awareness programs can help communities both a) reduce overall amount of waste and b) ensure items that could be recycled don't go to the landfill (i.e. cardboard, glass, plastics, electronics.

- Workshops & events
- Pop up booths at other city events
- Newspaper articles
- Youtube videos
- Social media posts
- Other _____

What types of programs should be top priorities for the City? Why? Who are the key community partners?

3. A number of programs can help the City focus efforts to increase waste diversion, and reduce consumption in residential, commercial and industrial buildings:

- Educational and awareness programming
- Implement a construction and demolition program focused on building construction waste
- Implement a bylaw to ban materials that could be recycled or composted (e.g. electronics, used oils, cardboard, organics, etc.)
- Increase support for backyard composting
- Implement a city-wide curbside compost program
- Improved waste management of products containing ozone-depleting substances
- Other

What types of programs should be top priorities for the City? Why? Who are the key community partners?

4. Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in waste reduction and enhance diversion from landfill?

THANK YOU FOR YOUR TIME AND INPUT.

9 Large Posters – Dotmocracy Exercise

Winnipeg

Do you support the City allocating a portion of general revenue to a Climate Action fund to support the implementation of key climate mitigation actions?

Place your dot in the appropriate box. Use the sticky notes to provide rational for your answers.

YES	NO	UNSURE

Would you support tax or fee increases in order to support Climate Action initiatives?

Place your dot in the appropriate box. Use the sticky notes to provide rational for your answers.

YES	NO	UNSURE

Winnipeg

Help us understand your priorities for Winnipeg's Climate Action Plan.

Use the 5 dots provided to highlight which strategic directions are most important to you.

Buildings

- Increase energy performance of existing buildings
- Increase use of renewable energy sources in existing buildings
- Improve energy performance of new buildings
- Increase use of renewable energy sources in new buildings

Transportation

- Increase use and efficiency of public transit systems
- Increase the density of urban development along key transit corridors to reduce dependancy on single occupancy vehicles
- Ensure new suburban communities have enhanced transit services and access to transit corridors
- Increase active transportation rates to reduce trips by single occupancy vehicles
- Increase the use of electric vehicles
- Utlize zero emission buses

Land Use

- Support infill development in Transformative Areas of Winnipeg to increase overall density
- Increase density of new development areas
- Design and implement (active) transit oriented development
- Support redevelopment of old/ abandoned industrial properties
- Preserve and expand urban forests

Waste

- Reduce waste
- Increase waste diversion (i.e. recycling and organics) from residential, commercial and industry
- Implement a city-wide curbside compost program
- Utilize biosolids in agriculture and landscaping industries
- Divert and utlize biomass resources for energy production

11 Public Workshop Engagement Workbook Feedback

Buildings

Q1: The City is considering several opportunities to help encourage building owners to comply and 'go beyond' current Energy Code requirements in new construction:

- Incorporate energy performance requirements in the City's land use and development approval processes.
- Require storm water management through tree canopies and green roofs to enhance the energy efficiency of buildings.
- Increase enforcement of the energy efficiency requirements in the Building Code
- Provide financial incentives to building owners that encourage high energy efficiency performance
- Launch an education and awareness campaign about opportunities to make changes to new home construction

Which should be top priorities for the City? Why? Who are the key community partners?

- Launch an education on new home construction - Also how to improve homes by an above and beyond code
- Energy audits on profit buildings, fines for non-compliance, make zoning building permits more flexible, have surface parking lot owners, install solar panel roofs, covered parking that pays for itself and provides energy for street lights etc., or develop the land
- Need to extend building code - it's a minimum requirement model development based on LEED certified buildings/standards; including the relevant criteria. All city examples or city funded buildings should meet LEED standards (LEED by example). Green roof development and financial incentives for mixed use/density.
- Partner: Hydro, Green Building Council, LEED Council, Feds ($), Landscape Architects, Beekeepers, Chicken farmers etc.
- Provide support funding to youth-based empowerment programs (ex. BUILD and AKI energy models) to help them learn and help to do community green retrofits. Include training programs. Promote career skills amenable to 'jobs of the future.'
- City should require Federal and Provincial programs for upgrading insulation and reducing fossil fuels for building and utility purposes. Funding can be found in carbon pricing revenue.
- The section focuses primarily on energy. I would recommend looking at San Francisco's 26-item TDM menu that developers choose from to meet their target. The menu focuses on aspects that increate or improve the walkability, breathability.
- Subsidize solar panels. Education on new technologies available for buildings, new homes and businesses, schools etc.

- Require solar panels on all build ups. Adopt positive energy performance standards. Require that all buildings be engineered to longer service life - centuries instead of decades.

- Zero net energy requirement for all new development. Densify with green space and interesting architecture. Equity - in my neighbourhood, there is a perception that densification is only for middle class neighbourhoods and not upper class. Urban boundary vs connectivity and densification and sustainable transportation requirements.

Q2: Here are a few actions we are considering to reduce GHG emissions in existing buildings:

- Provide resources to support energy audits of existing buildings.
- Provide financial incentives to building owners that increase energy efficiency or install renewable energy systems.
- Develop loan or grant incentive programs to support energy efficiency or renewable energy upgrades.

Which should be top priorities for the City? Why? Who are the key community partners that should be involved?

- Priorities:
  - skill-building neighbourhood empowerment
  -"Top 10" building efficiency retrofits, ways to save you money

- I would love to see the city provide loan and incentive programs above and beyond what Manitoba Hydro and LEED provides

- Pay as you save loans for green technology. Longer incentives. Make large rental companies more accountable for their share of GHGs. Energy audits for large commercial buildings and property.

- MB Hydro has range audit program already

- Financial incentives will most likely do the trick. The only reason any building wouldn't be built with more "green" technology is usually cost; offsetting the initial "sticker shock" via subsidization could turn people to such things. They often save money in the long run for the building.
  Side note: Urban design focusing on altering urban energy balance should be considered

- *Provide financial incentives to building owners - definitely needed but most also include existing buildings

- Provide incentives and advertise for homeowners. Find ways for large city buildings and increase their energy efficiency and provide incentives for doing so. Have requirements for energy use and implement energy audit.

- District heating - geothermal, solar
  Work with industry, trades, community organizations, create local employment, expertise

- Reach out to the companies who built new homes and provide them resources

- look for more flexibility and innovation with zoning
- Use a different approach for residents and businesses. Large scale - choose an area of city and hire locals, so can demo substantial impact as a case study. Focus on high-use buildings like rec centres. Support audits, only if have capacity /partners to support some/all recommendations. Partners: BUILD, Aboriginal Centre, local residents association. *If City did neighbourhood audits, then could determine where need is greatest for change.
- Create more housing complexes like IRCOM. Work with 1st Nations to develop IRCOM like transitional housing for Indigenous folks coming in from Northern Reserves.
- There is no reason for grant or incentive programs unless they are funded from carbon pricing revenue.
- Incentives for renewable energy systems. GHG/carbon pollution levies on natural gas and natural gas pipeline.
- Pay as you save.
- Provide financial incentive to building owners. No deadlines and more marketing about the incentives, longer incentives. Set some requirements for older buildings or large land developers. Set mandatory requirements to approve. Give tax breaks for improvements. Inspections of buildings to stay up to new codes of energy efficiency, make it a regulation. Can't be suggestions any more. Cap and trade system like they do in Boston.
- Maybe there should be a penalty for not having an energy audit.
- Pay as you save loans would go a long way o help people retrofit. In rental and commercial properties, mandate efficiency standards and use cap. Trade system to encourage improvements.
- Many cities require audit and energy leadership as conditions of sale. Set net zero target and work back from there to required codes.

Q3: If each residential and commercial building had a label detailing how much energy it used (like the energy star labels on appliances), would this help you understand energy use at home or work? What are challenges and benefits of this type of program that we should consider?

- Challenges - Cost, city resources (inspection, enforcement)
- A more informed population in definitely needed, and giving buildings a rating might accomplish that, but only if the rating provides some kinds of incentive. Otherwise, I feel that is could be received as bureaucracy or red tape
- It would be beneficial, but I am not sure how accurate the labelling would be.
- To what end? How will this change what is already built? Will they be changed for taking over an old building?

- I don't feel as though this is critical. It would certainly be nice to display such things to enhance public understanding. However, the added oversight and cost may be prohibitive in that is adds another amount of money/resources. As long as the buildings are efficient, that's the main thing at first. This program should be secondary or tertiary

- I think it should be limited to $, not sure it makes a difference

- I think people who are interested in their impact on the environment will care to consider this information and use it to make a change. The challenge would be to encourage/promote this kind of program amongst individuals who aren't as knowledgeable/interested in their impact on the environment. This might be achieved with further education and incentives.

- Yes, this would be helpful, cost may be prohibitive for some. Need to have something that people can relate to rather than just kwh

- Yes, the challenge would be on reliability.

- It would help a select group of people who are going after energy efficiencies

- Education - each home will depend on the users, teach about types of windows, insulation, roofing, furnace types/water heaters etc.

- I think seeing how your neighbours use rates compared to your or your other neighbour is a great incentive. Need to have something to compare to.

- The label could show $ cost of fossil fuels and carbon tax on 'degree day.' Pu t this on MB Hydro with utility bills.

- Provide seed funding for social enterprises. Support youth employment programs where young folk learn interpersonal and technical skills. Develop disaster preparedness strategy. Ex. Response to climate disasters - forest fires, flood, drought. Create resilient community designs.

- No. Not worthwhile. That type of energy labelling is better suited to seeing the energy and GHG/carbon footprint.

- Energy labelling as a whole. Incentives to improve usages. Setting target of 0 fossil fuels.

- This would depend on how the building's used…energy use within the building would vary according to occupant

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the city of Winnipeg encourage Winnipeggers to invest in increased building efficiency or renewable energy systems?

- Make natural gas more expensive to buy than electricity. Make a list of "green" contractors. Expand zoning and bylaws for green technology. Upgrade older buildings. Change "not in my back yard" culture.

- Look at the media campaigns done in the 70's during the energy crisis. They gave values to actions ei. Turning off lights in rooms not used saves $/year

- People in this city like things cheap above all else. I'm not sure exactly how (not my field of expertise) but if the public can be shown how much money they'd save on bills, I suspect more would care about greener practices
- Building codes - Targets within planning and approval process
- Further than education about what is available/what the options are/how individuals can save money by using efficient and renewable energy systems. Providing lists/contact information for contractors who are knowledgeable in using/building these systems.
- Credit on energy, water bill
- Plant and dedicate replacement trees if certain reached
- Education for the companies who are building
- Education - encourage innovation of building design, be more flexible in allowing new plans
- Discourage natural gas usage. Educate people, pamphlets to educate homeowners. Provide lists of reliable contractors who can aid homeowners looking to upgrade. City should be more flexible and innovative in making and encouraging changes in citizens motivations to change. Zoning and bylaws are not up to date. Combat nimbism support.
- Show them the value. Economist environmental savings. Educate- why it's important.
- Support summer youth employment programs where students learn skills and interpersonal networking. Connect to federal housing policies/plan.
- Examine best practices in other jurisdictions to illustrate the potential possible actions - there is likely a suite or ensemble of complimentary measures including economics, education, demonstrations, projects and "awards"
- Flexibility of permitting. Make sure code and permitting requirements meet the needs of older buildings - not all building requirements are possible in older buildings. This disuades people from making necessary renovations.
- Carbon tax bylaw. Regulated standards for new and major renovations. See BC's Step Code as an example for setting targets locally. Adopt MH's Market Transformation Strategy. A - High incentives to get initial adoption. B - cost-effective incentives to get united adoption. C - introduce regulatory standards and remove incentives.

Land Use

Q1: The City is considering the following actions for Winnipeg's Climate Action Plan related to land use.

- Support infill development in Transformative Areas (existing built areas of Winnipeg that are experiencing a lot of change) of Winnipeg to increase overall density
- Increase density of new development areas

- Design and implement (active) transit-oriented development
- Support redevelopment of old/abandoned industrial properties
- Preserve and expand urban forests

Which should be top priorities for the City? Why? Who are the key community partners?

- Incentivize collaborative housing.
  - Cohousing, co-ops, resource sharing
  -Prioritize densification based on "social contracts" rather than enviro metrics
- Incentives for developers to focus on high density/infill development.
  -Community Infrastructure/green space in addition to infill developments.
  -Master plan/Development plan to reinforce/support infill, rapid transit rates, greenspace
  -Pro growth boundary
- Preserve and expand urban forests, Support infill development in Transformative Areas
- Stop sprawl, keep and expand green space
- 1.Support redevelopment of old industrial properties 2. Preserve and expand urban forests 3. Design and implement transit-oriented development 4. Support infill development 5. Increase density of new development areas
- Reducing urban sprawl helps a good deal. Less distance to travel = less fuel burned. Greater density also lends itself to easier implementation of transit (ie. Don't have to make routes go "way out of the way") be careful with urban reforestation; the net effect of an energy budgets is still a tentative topic of research. More trees isn't necessarily the answer, make sure that surface energy budgets of vegetated/urban surfaces are discussed/researched. Also look into co2 intake rate of species
- Designate each school a park nearby. Teach students to spread all local food varieties for free. Mainly focus on things that can be planted one time and produce for years to come without replanting! 1. all local fruit bushes 2. local mushroom varieties 3. local edible perennials
- Large parks are a land use of resources/ small parks in dense areas are important for those without yards
- Forestry is important, there should be less parks, existing parks should receive better funding
- Cost share - do no agree with too many houses clustered together. Need more green space for less air pollution.
- Mother in law suites - preserve green space-replacing elms - diversity
- I support densification as long as buildings are architecturally interesting and not all built in a short span of time
- Yes, new areas should be denser, Expansion of urban greenspace is important to make the city more interesting. I believe all river banks should be parks

- Active transit, community greenhouses/urban forests and green spaces, Increase density in new and old communities
- Transit system to create stations which will be the centre of a network walkable communities station surrounded by services. Then walk home to high density passivhaus 3-5 storey residences which create density on smaller physical footprints. Space contiguous to is how available for urban agriculture urban food forests. Promote community pooling/sharing resources, self governance
- Embrace sustainable neighbourhood model "a city of villages" - green space and corridors. Increase the number of city wards and number of councillors to improve community responsibility.
- Stop sprayed, if densified ensure access to parkland, green space
- Increase density of new development or stop it all together, make better sidewalks to get to buses, make old/abandoned structures into recycling stations (look at Retuna in Sweden), limit the physical footprint of the city and have more intensive land use, allow people to grow veggies on their front boulevards
- Transit-oriented development and densification must prioritize lifestyles and modes of transport that do not favour cars.
- Development charge should be based on new areas, not core neighbourhoods. Plant more trees.
- Support redevelopment, take out old railroads. Expand urban forests. Interconnect land use and transit. Rooftop gardens on apartment buildings. Plant fruit trees all over walking/biking paths. Urban agriculture. Students used to plant idea of selling food from own property.
- Convert some portion of urban forest to preserve culture. Follow through on the proposal to relocate rail lines and yards outside the city. Free up more land in the urban core. Find synergies between adaptation and mitigation ex. Re-establishing wetlands.
- Increase density in existing developed areas. Ensure that the city grows in ways/areas that can be services effectively and efficiently by transit. Support infill in transformative areas.
- Equity - In my neighbourhood, many people feel they have been designated a certain neighbourhood when they want to think of larger homes replacing the smaller homes

Q2: Climate actions can also involve the City helping to stop certain activities that have been part of how we have lived in the past. One is how we design, and where we build new neighbourhoods. Traditionally development has been cheapest to both build and purchase in the suburbs further from employment centres and transportation choices. It's one of the reasons we spend lots of time in our cars. This link between land use and transportation is a key priority for the Climate Action Plan since transportation makes up almost half of the city's total GHG emissions. And we aren't saying development needs to stop. But we need to start to shift how we grow.

One way to manage growth to support climate action is by directing it to specific areas and setting strong urban growth boundaries.

Are you generally in favour of directing growth to specific areas and setting City growth boundaries (no development outside of the City growth boundaries)? What needs to happen in Winnipeg to increase density and support infill development? Describe your answer below. Who are the key community partners?

- Would like to see banks, grocery stores, pharmacy, etc within walking distance of home. Would like to see box stores in malls and closer to bus stops.
- YES - Multi-use developments (office, housing amenities)
vary property taxes by sprawl vs infill areas
- Yes- Incentive to build and live closer to the city center - lower taxes
- Yes - do not allow parking in first of buildings, it kills a street's vitality. It's better to put the parking at the back. Remove or drastically reduce parking requirements. Do not allow development that could support efficient transit and walkability/bikeability.
- NO-How do you force a land owner to develop if they don't want to. Ie gravel parking lots DT have been there for over 25 years. The city planning department needs to listen to all other departments before making policy
- Yes - I don’t know, I'm not a land developer nor do I know how those deals are handled
- Do as three separate course the ca take worth half credit each, so by the time graduated they can spread all local edible plants if desired
- Unsure - concept is good but green belts have not worked elsewhere
- No - Tolls on roads coming into Winnipeg
- Build grid based walkable communities and get rid of mandated parking. Tax parking lots.
- Yes - Co-housing Winnipeg - mini city centers based around transit hubs (wards)WPG is a city made of many towns - revitalize the historical areas as these hubs
- Yes - Mindfulness of total carbon budget. Need to build for greater durability and building lifespan.
- Yes - Walkable community makes places interesting to live and work
- Yes - culture shift, we assume we can take up as much space as we want because our country is so large, need to think smaller
- build healthier more connected communities
- Make the support a financial incentive to reside in walkable complete communities and disincentives to people living outside city boundaries, higher fuel costs, parking fees for non-residents.
- We need to build a model walkable complete community so that we can promote the concept as a real positive life choice alternative to single detached, low density, car dependant shopping centre, box store life choice.
Need to recruit residents to live in this community and be willing to do the evangelical zeal

to promote the benefits of this village within a network of urban villages connected by transit spine

- Yes - Build with the existing neighbourhoods especially DT
- Yes- in apartment design, allow spaces for large families or people who more space
- Unsure. Work with community-based programmers, universities and high schools to provide community recreation opportunities. Incorporate traditional Indigenous land-use spaces (ex medicine gardens and support programs at Thunderbird House)
- Yes - need to enable and favour infill development projects. A key barrier is when projects are able to be halted by small groups of citizens with a not-in-my-backyard attitude. Projects that meet goals or criteria (to be defined) that support the climate action plan should be given weighted consideration, with a higher level of proof put on those trying to stop infill/densification development.
- Diversity of land use in neighbourhoods. Local businesses, walkability, bikeability. Shop spall at street level, diving above it. Have a boundary where people cannot build past. Boulevards should be used for gardens etc as owners wish. More community greenhouse and gardens. Get rid of parking minimums for stores. Incentives and affordable, dense housing in core areas.
- Yes - Requirement for connection with City services and amenities

Q3: The City is considering ways to preserve and expand urban forests with the following actions:

- Implement policies and bylaws that further protect critical greenspaces
- Increase investments into the expansion of existing urban forests and canopies
- Subsidize residential and commercial land owners to plant new trees

Which should be top priorities for the city? Why? Who are the community partners that should be involved?

- Land developers; bylaws for development that incorporate greenspace, forest areas
- I agree with subsidizing owners to plant new trees, but the funds seem to be lacking to maintain the trees we already have. One idea that could improve the urban ecosystem would be to implement better planning in regards to a wider variety of trees being planted, since such a large part of the budget seems to go to fighting pests (like the emerald as) which proliferate because of mono culture. These are potentially regulations that could be easy and inexpensive to implement
- 1. Put money into maintenance
  2. Do not divert maintenance to other budget items.
- I already touched on this, but "more trees" is not necessarily the answer to reducing footprint. The top priority should be understanding what types of vegetation provide what time of forcing (+/-) and how their rates of C02 uptake vary with temperature. These factors are not as clear cut as most people think. Albedo is a huge facet of this issue

- More funds urgently to cut down diseased elms - need to get ahead of the problem now to preserve our canopy. More funds to prepare for emerald ash bora & aggressive tree removal and replanting. Trees are essential to quality of life, shade, property values, city identity. Happy to see increased funds going to this, need more, keep it up. Too many marked elms currently still standing and spreading dutch elm.
  move away from salt use on roads which damages urban trees

- Increase investments into the expansion of existing urban forests - Very important

- Trees are awesome. Large tree-lined streets make for better green space than parks that have to be travelled to

- Stop salting the roads

- As said before - I think all riverbanks should be parks/public accessible
  Urban canopiesa re very important for shade and climate

- We need further greenspaces and we need to change them from strictly aesthetic to functional (feed production)

- Need an Eco map to help envision how urban space can be reconfigured as buildings reach their life expectancy. Given disease, invasive species attacking our urban forest we should consider developing and urban food forest.
  Should establish a population limit for square acre space. Communities could have single detached home with a small lawn (largest physical footprint, low density) or that grid could distribute its population on small residential footprint via multiplex 3 storey housing blocks and then there can be larger urban green spaces for green ecosystems, urban agriculture plots, food forests
- Pocket parks should be considered. Some cities have development pocket parks in conjunction with street scaping, especially at intersection where directions are considered to reduce cut through traffic.

- Protect green spaces and encourage and incentivize residential and commercial land owners to plant new trees and encourage new green space

- Do not discourage community or residential gardens, increase available low-income housing

- Create more green corridors connecting neighbourhoods ex. West End. Help City residents to access parks and conservation areas outside of the City. Cultivate ecological thinking regarding interdependence. Provide City employees with more training in conflict resolution skills to ensure positive dynamics in green space.

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in density and infill development?

- Ensure that impact fees do not become universal, they need to be higher in lower density outer neighbourhoods and ideally nil in infill developments.

- Thoughtfully design neighbourhoods - community green space, grocery, gym, other amenities, walkable areas, cycling rates to areas of employment -> master plan/design process that allows for long-term planning

- Larger grocery store DT, like a DT superstore instead of many small convenience stores with high markups
- Complete communities, grocery stores walking distance, infill green spaces
- Offer more transit options toward the heart of the city, as opposed to the "urban sprawl" type areas
- Tolls on roads coming into the city - reduce sprawl and generate revenue
- Education about alternatives to purchasing homes ie. Co-housing, co-ops
  Reframe "density talk" to -> "better community" "more convenient"
- I believe this is mainly a cultural change, please need to be convinced that walking and biking and not having to travel long distances is useful. Less of a difference in costs between the city and outlying areas, less sprawl should reduce service costs. Those who live outside the city but use city services (roads, shops, work services) should have to pay (no idea how to make that work)
- Change school curriculum to include gardening/sustainable developments, change the rules so allow for growing/selling own feed, create community greenhouses, mandatory level of sounds proofing in multi-family dwellings, different apartment sizes to reflect different family sizes. ie full floors for large families, rooftop gardens, strict level shops/services with MFD's on top, prevent large corporations from taking up space; encourage local and small businesses, create a mix of shops/services and create 2-mile radius communities to encourage more walking
- Demonstrate a complete community neighbourhood. Show how family finances can change with no energy costs for passivhaus multiplex, no car payments and no auto pac bills, pooling/sharing resources. Now money can be redirected to other interests, needs, wants. Could even reduce the amount of paid employment needed.
- We need to promote an alternative to low density, single detached homes which shows that it is not the best way to use urban land
- Create disincentives to sprawl
- Allow home sharing (especially for students and seniors) not rooming house but actual shared living. Allow home expansions - add-ons to make existing homes larger. Be more flexible in zoning and distance from the road so people don't have to move to accommodate their growing families

Transportation

Q1: There are many possible features that could increase transit use in the City:

- More frequent transit schedule (less than 10-minute wait)
- Rapid transit routes
- Bike racks on all buses
- Additional routes (to/from___)
- Increased cost of parking at destination

- More park and ride opportunities
- Better technology to integrate all transportation options and payments
- Better route and schedule information
- Improve active transportation and transit connectivity
- Secure bike parking
- Other:_____

Which should be top priorities for the City? Why? As you answer this question, consider what would help you take transit more often. Who are the key community partners? If you don't take transit, what might convince you to consider it?

- Increased cost of parking at destination, better technology to integrate all transportation options and payments, improve active transportation and transit connectivity
- Ease of use ie reliable schedules, reloading peggo card on demand to use immediately
- Coordinate busy steps with additional bike racks, car co-op steps, park and ride
- More car sharing and car co-ops
- Have a full review of all transit routes in the city (destinations, terminal points, connections, timing etc)
- Make sure the public knows that the rapid transit network has been studied for approx 40 years. The proposed routes and implementation are created by careful review and are being reviewed at each stage
- Rapid transit should be finished ASAP. Secondarily, more timely buses, especially at night is critical, one of my routes the wait times are around 40mins after 9pm
- A frequent transit service to allow it to be a viable alternative to a car, so people can choose to give up their cars.
- I would take it more if I could count on using it and not being late to work/ professional engagements as well as personal appointments and events. Not just at peak hours
- Increased citizen science/monitoring. Incorporate with educational curriculum. More connected green corridors. More electric vehicles and charging stations. Create solar battery stations. More community bike workshops. Provide bikes to newcomers.
- Studies say frequency
  Frequent transit - make transfers easier, makes spontaneous trips possible, makes transit competitive - Studies say frequency
- Frequent service, sky train, more reliable, filler bus-shuttle bus
  We need to be able to give feed back to make changes to the transit system

- Increased cost of parking!, Extended hours, also active transportation connectively. Transit not taking as long. However, I intend to ride my bike more at my current work location

- More frequent transit schedule - convenience
  Bike racks on all buses- I often cycle, but some distances are too far, but still want my bike at the end
  Improve active transportation and transit - important for human health and safety as well as convenience when travelling longer distances
  Secure bike parking - had my bike stolen last year

- We make electric busses here; why don't we have them here? Can we use abandoned mail lines?
  More efficient service, better busses

- Reduce the price of transit

- Better sidewalks and walk to bus, consistent schedule. I really dislike seeing all the buses 'out of service.' Why not allow riders until they get to the garage - switch drivers and keep going?

- 24hr 15min schedule - reliable/consistent/safe. Make routes available all day not just during rush hour, use smaller buses if needed. No 'out of service' buses unless they are broken. Allow riders whenever they are on the road.

- Better routes. Must be able to look system-wide when assessing costs, benefits, and financing options, rather than siloed departments. Don't take because of accessibility, ease, and time. From where I live, it is a long walk to the route I need, or a long commute with changes to get where I need to go. It is not convenient, nor appealing.

- More frequent service in the evenings, weekends, reliability. Integrated, seamless mobility. Use TDM measures and transportation hierarchy. Quit fiddling around he edges, focus on neighbourhoods most likely to use them. Time to think about overhauling our approach to transit. Have to make transit more convenient, comfortable, safe and more appealing.

- Multi-modal. Car/share - Uber would reduce demand for personal vehicles. This in turn might free up parking need for these vehicles. Is diesel transport a reasonable option?

- Rapid transit routes, more diesel buses, electrify transit, make it easier. Light rail routes.

- Additional routes to/from downtown. Cheaper fares. Emission standards. Subsidize electric car purchases. More electric buses. When it's cheaper than driving to work, when bus stops are closer, when buses are not so crowded, need more heated bus shacks, better deals on fares for downtown jobs.

- Improve active transportation and transit connectivity. More walking, biking, or riding transit. Make transit more convenient, more comfortable than driving. Make it more frequent, make stops more comfortable. Make transit routes direct.

- Want to find out if comments about transit are heard by City and what action is taken, if any. Need small bus to "fill in." Buses are not on time. Not enough transit. Car insurance too high

- Implementing a system in which different types of transportation are coordinated and easy to use. Park and ride options. Increasing the ease of taking and using transit. At this point in time, it's simply more convenient easy to take my car. Making transit safer to use. Purchase more electric buses.

- Current policy of extending transit service to new neighbourhoods pulls from existing services of decreasing frequencies.

Q2: What is your greatest motivation for using active transportation (walking, cycling) to get around the city? Check all that apply.

- Convenience
- Exercise/health
- Affordability
- Reducing GHG emissions
- Other_____

Provide rationale for some of your choices below.

- Parking is hard/expensive to find downtown so I walk to work instead

- Walking is often faster than driving and parking around Osborne, downtown

- Convenience- it's easy to know approximately how long it will take to get to destinations. Exercise/health for my own mental health and well being.

- Convenience, exercise/health - In summer the routes are easy and clear. I will never cycle in the winter, cannot get warm enough for me

- I never use such transport, as for me the commute would take too long. My daily commute is already around 1 1/2 hours via transit (each way) Bike trails/lanes (actual lanes) would help

- Living and working in the core area it is much more convenient to walk or bike - being shackled to a car and the hassle of parking sucks.

- Reducing our carbon footprint is important, reducing our reliance on cars encourages more compact walkable cities (less sprawl) which is essential for climate change and mitigation and adaptation

- Convenience - I live in a relatively high-density neighbourhood, I can access most of my needs within a five-minute bike ride

- Public bike share, Integrated bike paths, protected bike lanes

- Exercise/health

- All of the above - I often can get home from work quicker by bike then car (when bike lanes are present) - my bike is far more affordable than a car and associated costs - I try to be very conscious of my GHG contributions and so choose to bike/walk/bud/carpool before driving by myself

- Protected bike lanes, need more respect for cyclist, don't build a road without active transportation built in
- Clear the snow on bike paths, more bike paths
- All of the above - but as a senior with a hip replacement, I don't feel safe biking in traffic on bumpy streets. Fear of falling.
- Make transit something everyone wants to use instead of something some have to use! Make it a great experience: friendly, clean, easy, timely. Need more bike lanes and better connectivity. Bike education. Partners: community bike hubs, The Wrench, Active to Safer Routes to school, Green Action City, University Student Association
- Pleasure.
- If it is walkable, as when I lived downtown. I walked everywhere. From the suburbs it is difficult. Consider focusing more service in dense neighbourhoods more likely to utilize and offer less service to car-friendly suburbs.
- Would be interested in cycling through winter but only on protected bike lanes or pathways that are quickly and predictably cleared of snow.
- Exercise/health and reducing GHG emissions.
- For me, incorporating walking and biking into my life is for physical health benefits, but I also gain by not paying for a car or bus service.
- Affordability. Cap on number of cars back home. If extra cars, extra charge per car. Railway line utilization. Get private sector investment in public transportation.
- Additional routes to connect shopping locations better. Crosstown routes are terrible

Q3: Electric vehicles offer an opportunity to drastically reduce GHG emissions from vehicle use – a priority area also identified in the provincial and federal climate action plans.

Would you like to see the City support EV uptake by investing in public charging stations? Are there other actions the city could take to increase uptake?

- Public charging stations should be implemented when there is more demand/uptake for electric vehicles. What's the tipping point for this kind of investment
- The cost of EVs are relatively high compared to gas powered cars and investing in charging stations seems to benefit those who can afford to buy EVs(at this point in time)
- Yes
- More gas taxes, subsidy to install charging stations
- Yes - invest in public charging. Reserve and prioritize EV parking in central parts of the city and all major parks and city destinations. Celebrate, champion and make EVs cool. Transition transit fleet to electric - the major manufacturer is even located here.

- Not a huge fan of EVs since it simply allows/encourages commuter behaviour of solo driving. Doesn't offset issues of congestion, parking, maintenance that comes with SVs. More interested in buses/public transit and electric buses.
- Ideally, yes. However, I don’t know how viable EV vehicles are in a climate as cold as ours. Therefor I'm unsure how much would be a "wise" investment
- Support EV's but still need focus to reduce # of cars on the road and to help create liveable/walkable communities where cars are less needed.
- Sure, but a functional public transit system is a much more important priority. Busses carry so many more people - less wear on infrastructure
- EV still use lots of energy and space. We should sell to the states rather than use it on EV. Instead work on less energy intensive transportation options
- More level 3 / DC charging stations. Better marketing for EV. Have hydro have incentive for use of EV (better revenue for hydro to pay for cost overrun of building, projects up north). Barrier to ICE vehicles.
- Convert transit fleet to electric ASAP. Add a city field tax. Add a user/ride using surcharge. Dedicate school zone speeding tickets to school transportation plan improvements. Develop a community-based travel marketing plan - successful pilot. Look to Portland for results. Link this program to new infrastructure.
- Yes, I would like to see more EV points. However, I prefer to see a reduction in the number of vehicles on the road
- Yes, however we need to step away from the car culture mindset and still focus more on alternative transportation options - electric buses
- Yes, Incentives to use and disincentivize for gas powered vehicles, electric busses
- Not a priority for me but at park and ride lots it would be helpful.
- Yes - we need more level 3 charging stations. They charge faster and are more practical to use. Level 2 charging stations can take 8-10 hours to charge a Tesla from empty. Level 3 charging stations take 1 hr to charge from empty. Increase marketing and incentives for purchasing electric cars. We own a Tesla, it works well in the winter, but many people assume that electric cars won't work in our weather. These kinds of misconceptions could be clarified with good marketing and awareness campaigns.
- Yes - establish working group to develop electrification strategy

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in, or utilize sustainable transportation options?

- Financial disincentives to drive/park in key areas

- More holistic planning between provincial and municipal governments in terms of carbon tax and sustainable transit investments - framework to determine how carbon tax revenues are distributed; should municipalities receive a % if they are investing in sustainable infrastructure

- Convenience of the routes in terms of accessibility by pedestrians to pedestrian friendly, dense areas of the city. It seems easy to get to a shopping mall by bus, but not to other areas.

- Implement a municipal by law/ordinance requiring TDM or commuter reduction plans/goals/reporting for various sides of employers.

- Uber etc. A fee to invest into transit systems. Large corporations investing in public transportation for their employees. Carbon tax to invest into green tech.

- Ease of use - reduce time for trips ie. Shorter transfer times, more express busses

- Again, bike lanes, better transit. Specifically create actual lanes (not just painted bike symbols on the shoulder; those are dangerous) Also, finish rapid transit as fast as possible. As it stands it saves very little time because is has to rejoin the normal traffic regularly

- Support Go Manitoba ridesharing and Peg City Coop. Support special events and challenges in schools, for community (Bike Week, Commuter Challenge). City could support hotels that implement bike programs for guest. Tie health and environment together (benefits) and look at things like air quality monitoring and programming. Notes that Green Action Centre does air quality programs in schools.

- Tax on gas, tolls on roads coming into the city to reduce sprawl and generate revenue, make it more expensive to insure a second car - disincentivize multiple care families

- Put tolls on roads coming into the city of Winnipeg and prevent sprawl and generate revenue

- Incentives for workplaces to get a benefit for carpooling, Promoting the EcoPass, more expensive to register a 2nd or 3rd vehicle

- Bike sharing, car co-op

- Support car co-ops, free bikes available around the city, smaller community areas - keep key needs/services within 2 mile radius to encourage walking/biking, solar roadways- use sidewalks/bike lanes for easier maintenance; using battery reserves to melt snow and ice, support bike shops, advertisements "shaming drivers", planting seeds of why someone needs to drive a certain vehicle type ie trucks,. encouraging active transit

- Benefits on water bills, hydro bills, free bus passes, disincentivize for more vehicles

- If transit buses were more available and affordable

- Continue to make it more accessible and available

- More public awareness campaigns. Find creative ways to make sustainable transportation options more convenient than using vehicles.

- Increase costs of operating vehicles and have them pay their way (e.g. gas tax increase, parking charges in shopping centre parking lots, property tax - add vehicle value to house value). Strategy for freight vehicles needed.

Waste

Q1: One of the key focus areas for the Climate Action Plan is to reduce the amount of waste generated. The less waste generated in our homes and businesses means less waste transported and processed in Winnipeg's landfills.

How can the City and its communities help you to reduce waste? What would help you reduce waste in City facilities or commercial buildings?

- Improve composting options - community space for compost in dense (Osborne DT) neighbourhoods that have limited/no yard space
- Incentives for businesses to utilize waste-reduction organizations/non-profits - city funding for environmental organizations
- Learn about organizations that will recycle/reuse materials
- Individual incentives to help establish good habits
- Duplex and Triplex bin sharing, back lane bin sharing, share compost
- Make it more convenient to recycle a variety of products- batteries, glass, aluminum containers
- Improve technology to sort and separate various products. Make it easier to separate garbage and recycling.
- Implement bans on single use plastic items. Implement bans on materials that have nowhere to go. Encourage businesses to have recycling bins around their buildings.
- Don't have paper towels in bathrooms, put in better recycling, pick up recycling from public locators consistently.
- My household is already fairly efficient in this regard, more info on the side of bins (what can be recycled, cannot) as well as more bins would be good. Many people don't know what is "recyclable"
- The city should provide a composting service. This would greatly reduce household waste. There is lots of support for this.
- Tax products at point of purchase based on amount of packaging
- Waste costs should come from costs of the goods themselves. Ideally a tax that could capture the actual waste generated (ie. high tax on products that are wrapped in too much plastic) - could take the form of consumption tax - must be done in partnership with surrounding municipalities
- 1. Mandatory recycling to pickup at residential units(apts)
  2. Recycling education campaign - like the "Lets talk Bell"

- Focus on reducing use of new items, fun targets within workplace
- Ban single use plastics
- Offer a guide on how waste can be properly recycled so there are less contaminates - Community compost bins
- Curbside composting. Consider changing for garbage by volume as other cities have done. Could be by income to not burden lower income families. More and easier recycling options. Ban single use bottled water. Only compostable cups/plates etc in City offices or buildings.
- Curbside composting pick up. Accept more materials. Need to also address industrial and commercial waste. Ban single use plastics, organics. Public recycling that are for all materials. Ensure waste/recycling containers in public spaces are emptied frequently.
- Packaging is used for producers to ensure loss prevention. Advertising, breakage prevention and the consumer gets stuck.
- Making the manufacturers/purchasing companies responsible for the waste they create. Ban on single use plastics. City wide composting.
- Mandate recycling pick up for private landlords. Invest in capital upgrades at multi-material recycling facilities. Community compost collection - green bins. Information on how it gets used.
- Ban single use plastics. Put labels on blue bins for what can be recycled. Reduce packaging. Apartment blocks should provide recycling opportunities. Know who's doing what. Bins for recycling everything. Swap stations. Community composting. Support good behaviour for composting.
- Legislate more action from product designers to reduce wasteful packaging.

Q2: Educational and awareness programs can help communities both a) reduce overall amount of waste and b) ensure items that could be recycled don't go the landfill (i.e. cardboard, glass, plastics, electronics).

- Workshops & events
- Pop up booths at other city events
- Newspaper articles
- Youtube videos
- Social media posts
- Other_____

What types of programs should be top priorities for the City? Who are the key community partners?

- YouTube videos, Facebook, twitter. Reduce and reuse before recycling.

- Community partner - artsjunktion, waste reduction through reclaiming, creative reuse, provide workshops promoting zero waste reductions and reuse
- There are all white ppl here - we need to include more ppl in the conversation
- CIER released a report on an Indigenous engagement report on climate change - considers a broader perspective on the issue
- Workshops in schools.
- Recycling is inherently complex, and training needs to fit with a very diverse multi-cultural nature of the community. Emphasize reduce.
- List of neighbours who compost- share - subsidize family with bigger family. Need to be aware of costs for programs as ability to pay. Have commuters need to contact city by phone, education, need to have information in newspapers
- Commercials (radio and television). Swap facility where people can bring things that are still in good condition that they don't use or need. Further advertising for recycling facilities. Work with agencies who work with immigrants to teach them about how to recycle.
- None of the above, they create waste - put resources into improving waste sorting
- YouTube ads. YouTube traffic is responsible for over 50% of all internet traffic, would catch a lot of eyeballs. Make the ads short, sweet and funny will make people take note. Additionally, in general electronic and "other" types of recycling (pacific 4R depot) are not well advertised or understood by many. they should be pushed harder; I see a ton of electronic waste all the time
- Target kids - Info campaign with very specific and very clear info/lists of what can and can't be recycled - videos, website banner ads, on bins themselves, printable page for home fridge or office
  Make the message clear that over-recycling (throwing everything in hoping for the best) contaminates recycling
- Have proper recycling on street, not just drink containers that are profitable
  Better recycling for multifamily with private waste pickup
- How do we get amore diverse group of participants in this type of workshop?
  Increased community outreach, resident meetings, pop-ups, find where the people are and go to them
- Start with elementary schools
- Materials on recycling bins. Online ads that are information based telling us what/how to recycle, less focus on inspiring/motivating. Education!
- Workshops and door-to-door pop ups, commercials, contests, rewarding the behaviour you want. Partner with second hand shops and local non-profits who will sell to generate revenue for their operations. Also Mother Earth on recycling and waste minimalization. Also with producer responsibility, organizations for education for residents and business to know why recycling their products is important and how to do it.

- Social media posts, workshops and events, pop-up booths
- Social innovation challenges - crowd source and engage. If videos will be used, they must be clever, innovative, catchy and fun.
- Focus on reduce first. Add swapshop to 4R depots. Produce promotional materials in different languages. Partner with immigrant centres.
- The reduce aspect of consumerism. 4R depot better marketing. Better education for recycling and composting. Better sorting of recycling.

Q3: A number of programs can help the City focus efforts to increase waste diversion, and reduce consumption in residential, commercial, and industrial buildings:

- Educational and awareness programming
- Implement a construction and demolition program focussed on building construction waste
- Implement a bylaw to ban materials that could be recycled or composted (i.e. electronics, used oils, cardboard, organics, etc.)
- Increase support for backyard composting
- Implement a city-wide curbside compost program
- Improved waste management of products containing ozone-depleting substances
- Other

Why types of programs should be top priorities for the City? Why? Who are the key community partners?

- Ban plastic bags but consider public health scenarios that may require the use of plastic
- Strong communication strategy to move composting as easily accessible as possible
- Ban materials from landfill that can be readily recycled
- Compost drop off/pick up options, centres and community options
- More deposit programs like the one for car batteries, ban plastic bags, bylaws for "bad" products
- Expand landfill diversion to include waste from commercial services (especially construction garbage)
- Ban on single use plastics
- Implement more strict regulations on junkmail and flyers
- Neighbourhood composting, city pick up recycling from on street bins

- Keeping an eye on and encouraging businesses to dispose of waste correctly is nice. Additionally, trying to clamp down on the pollution entering the Red, which flows into the severely polluted lake Winnipeg, would be good. I realize this is more a provincial and federal issue, but it would be nice if the city would assist.
- City wide curbside composting
- Increase support for agencies that reuse and recycle - thrift stores, Hands of Hope, Arts Junktion. Make hazardous waste disposal easier - a few more centralized depots - besides batteries at libraries
- Revise building code to include composting chute that will carry compostable waste into backyard
- Residential composting
- Increase support for backyard composting and Implement a city-wide curbside program - I would like both of these
- Organics should never go to the landfill, building constructions waste - no incentive to plan properly on how to minimize waste, Bylaw for recyclables/compostable -not only are these materials taking up excessive landfill space but dues to the nature of landfills they'll likely never break down, Stripping materials from natural resources without returning them (taking away from future needs)
- Brochure guidelines for residents how to properly recycle used goods
- City can implement a single use plastic ban for grocery bags, plastic straws, Styrofoam containers. Recycling is no longer enough - we need to reduce (and a ban is the quickest way to get results). City should be rewarding recycling and composting, not charging for it and charging for waste pickup. Partners: CBCRA, Province, Green Action Centre
- Not sure where it fits in but making it much easier to deal with electronics, consumer products, chemicals, batteries, lightbulbs etc.
- Career Action Centre (composting education), Compost Wpg, Mother Earth Recycling - pay them to pick up mattresses from homes. Charge for trash but not recycling/composting. Make it easy and convenient.
- Rewarding for recycling or composting and charging for waste picking. Take care of used fridge/appliances. Incentive for recycling/composting companies.
- Help with people with fill bins. Partner with social enterprises like Mother of Earth, Build, Green Action Center.
- Tax. Curbside composting or communal composting. Educate, educate educate!
- Implement a ciy wide curbside composting program. Reward residents for recycling and composting and charge residents for waste. Further advertise 4R centres/recycling facilities

Q4: Other than direct financial incentives to support action by you and your fellow citizens, how might the City of Winnipeg encourage Winnipeggers to invest in waste reduction and enhance diversion from landfill?

- If the city is providing composting and recycling services, increase garbage fees to disincentivize waste creation
- Clear communication on how to recycle and compost
- Provide info/resources/tips on how to reduce household waste. Ex bulk barns jar program, plastic bag alternatives
- Provide signs to folks who compost, people can leave their composting there
- Make more efficient use of social media for community outreach to educate people about waste management and better consumption practices
- Ban single use plastic in all government buildings to set the example for others to use
- Elect composting reps in each neighbourhood to monitor residential composters
- Making it easier than throwing everything away in the garbage. Further education and marketing of waste reduction services and programs.
- Develop industries in Winnipeg that use materials in new products or do the processing
- Kind of addbull, but I've seen programs in Europe and Asia where commuters can have the public transport fare subsidized or eliminated entirely. I guarantee if you give people a fare reduction or something more would take transit and recycle more.
- Ban plastic bags
- Encourage and support recycling, upcycling, reuse agencies. Find ways to keep items outside of landfills. Have bins where residents can sort items near their homes or organize community collections.
- Mandate that construction companies also reduce/reuse/recycle materials - separate a in 4R depot
  - advertisements that encourage REDUCTION! Too much focusing on recycling which is the bare minimum
  - Promotion of alternative composting technologies - vermi-composting, Home biogas system, community composting system
- Move focus on re-use as well. Target education to working with immigrant centres, welcome centres, ensure messaging is clear for them. Partners: support Compost Winnipeg by providing space for composting and promoting service.
- Expand free items dropped off on boulevards.

Current Corporate Climate Action Activities

Current Corporate Activities		
Activity	**Timeline**	**Details**
GENERAL		
Office of Sustainability	January 2018	Established out of recommendations from Climate Change Working Group.
BUILDINGS		
Green Building Policy: New City-owned Buildings and Major Additions	Adopted 2011	This Policy outlines minimum performance standards for new City-owned buildings and major additions. Specifically, they must achieve a minimum LEED® Silver, 3 Green Gloves, or equivalent certification while also meeting the standards of MB Hydro's Power Smart New Buildings Program. Associated policy requirements include lifecycle costing, integrated design, and green building expertise. Some recent green building projects include but are not limited to: • Dakota Community Centre Fieldhouse: Achieved LEED® Gold Certification. • Public Works East Yard complex: Achieved LEED® Gold Certification. • Sinclair Park Community Centre: Achieved LEED® Silver Certification. • Sturgeon Heights Community Centre: Achieved LEED® Gold Certification. • Linden Woods Community Centre – Achieved 3 Green Globes® Certification
Green Building Policy for Existing City-owned and Leased Buildings	Adopted 2011	The City partnered with Manitoba Hydro to initiate a ten-year building energy retrofit program from 2002 to 2012. As a result, the City invested over $14 million into energy efficiency projects, resulting in GHG emission reductions of 1,200 tonnes CO2e annually in addition to $900,000/year in utility savings. The City continues to seek and implement opportunities for energy efficiency and renewable energy upgrades in civic facilities. This policy directs the Public Service to benchmark energy and water use in all City-owned buildings above 33,000 square feet and to advance energy efficiency measures through the Capital budget annually. To fulfill this commitment, the City is currently working with the Province of Manitoba, MB Hydro, and Natural Resources Canada to pilot the adoption of the Portfolio Manager online building energy analysis and benchmarking tool. Energy efficiency measures for existing buildings are brought forward to the capital budget through the Energy Conservation Program.
TRANSPORTATION		
Green Fleet Plan	2010	A key component of the Corporate Climate Action Plan with significant implications for the corporate GHG emissions inventory is the Green Fleet Plan. This Plan, adopted in 2010, is a consolidation of strategies intended to reduce overall mobile fuel consumption in City-owned vehicles and equipment. The Green Fleet Plan was approved in 2010 with an emissions reduction target of 17.85% below 1998 levels by 2019. Key components include: • Right sizing of the fleet • Purchasing most fuel-efficient vehicles where operationally feasible • Replacing older diesel engines with low emitting diesel engines

Current Corporate Activities		
Activity	**Timeline**	**Details**

		• Evaluation and use of alternative fuels
		• Implementation and enforcement of a corporate anti-idling policy; installation of idle reduction technologies
		• Deployment of fuel efficient driver training
		• Evaluation of new advanced vehicles and technologies
		• Investigation of maintenance and management practices to reduce fuel use
		  ○ Inclusion of personal vehicle use, rental vehicles and outsourcing of work
		  ○ Transportation demand management
		  ○ Communication and outreach
		The Green Fleet Advisory Committee is comprised of a broad range of City departments with relevant knowledge and experience (e.g., transit, emergency services, parking).

Electric Bus Demonstration	Report 2016	Winnipeg Transit has been using up to four New Flyer Xcelsior ® battery-electric transit buses in daily service as part of an electric bus demonstration project. This project has been a collaboration involving the City of Winnipeg, the Province of Manitoba, Manitoba Hydro, New Flyer Industries, Mitsubishi Heavy Industries, Red River College, and Sustainable Development Technology Canada. The use of electric propulsion buses in Winnipeg is expected to have a substantial impact on greenhouse gas emissions. The project task force confirmed a number of benefits from electric buses, including: reduced operating costs (primarily for fuel but maintenance as well), reduced GHG emissions, noise reduction, enhanced energy security and price predictability. In addition, though the capital costs are relatively high the buses would likely be a good long-term choice given declining costs for batteries, volatility of costs for diesel fuel, and the effects of the proposed carbon tax. The task force suggests a step-wise approach to transit electrification, namely: Step 1: Deployment of 12 to 20 buses (two to three percent of the fleet); Step 2: Deployment of 120 to 200 buses (20 to 30 per cent of the fleet); and then Step 3: Full system-wide deployment. In order to get successfully proceed through these steps, the report acknowledges the need to undertake transit route planning (including infrastructure requirements), assess technology on an ongoing basis (including charging), determine need for facility modifications, and provide staff training
Electric Vehicle Pilot	Approved 2017	This project has been initiated to determine the operational feasibility of electric vehicles within the City's fleet. Through its trial of two electric vehicles and supporting infrastructure (two level three charging stations) the Winnipeg Fleet Management Agency (WFMA) will determine the operational feasibility and costs/benefits of electrical vehicles. It is expected that City departments using the vehicles will realize savings from a decrease in fuel consumption as well as reduced maintenance costs.
GoManitoba		Go Manitoba has been developed for the purpose of encouraging sustainable, healthy commuting options in workplaces, including the City of Winnipeg. It is a user-friendly, convenient platform that connects employees from all departments and commuters working within and around the City. Employees are encouraged to use the platform

Current Corporate Activities		
Activity	**Timeline**	**Details**
		(via computer, smart phone or tablet) to organize carpools, search for public transit options and match up with bike and walk mentors.
WATER AND WASTE WATER		
Office Composting	2015 to present	City employees in the Planning Property and Development Department have been composting at work since May 2015. As a result of the program over 7,500 kg of organic waste was diverted from landfill. In 2016, the City introduced a compost and waste reduction pilot project at the Grace Café on the first floor of the City Hall Administration building. This pilot was made possible with the support of a $20,000 grant from the Province of Manitoba's Waste Reduction and Pollution Prevention Fund, as well as collaboration with other City departments and industry partners. Initial planning has been completed, and funding secured for expansion of composting and waste reduction strategy to include all city offices located in the Council and Susan A Thompson Buildings at City Hall beginning in 2018.

APPENDIX E

FCM Green Municipal Fund

Green Municipal Fund (Federation of Canadian Municipalities)

The following provides highlights of the Green Municipal Fund programs, projects and the required municipal contribution.

Focus Area	Example Projects	Project Type	Municipal Contribution
Sustainable neighbourhood and brownfield action plans	• Energy • Sustainable transportation • Brownfield remediation and impacts	Plans and studies	50%
Energy efficiency and recover (community and municipal buildings)	• District energy • Retrofits • New construction	Plans and studies Pilot projects Capital projects	50% 50% 20%
Transportation and fuel efficiency	• Mode shift • Fleet efficiency	Plans and studies Pilot projects Capital projects	50% 50% 20%
Water quality and conservation	• Water conservation • Water changes from climate • Wastewater systems	Plans and studies Pilot projects Capital projects	50% 50% 20%
Waste management and diversion	• Waste diversion • Waste stream solution	Plans and studies Pilot projects Capital projects	50% 50 20%
Brownfield	• Site remediation • Renewable energy production • Redevelopment	Capital projects	20%