



Zero Waste Brantford

City of Brantford's
Vision for Solid Waste

January 2022





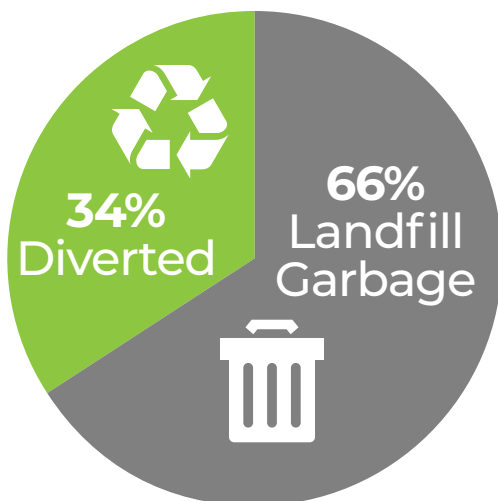
Introduction

Waste diversion is an important goal that is being prioritized by many municipalities in Ontario and around the world to help curb the impacts of climate change and promote more sustainable practices.

The City of Brantford's Vision for Solid Waste presents a long-term goal for waste diversion in the community that identifies potential short, medium, and long term actions to reduce waste in residential households. Waste diversion and Climate Change go hand in hand. The goals presented in this Vision align with the City's Declaration of a Climate Emergency as it seeks to reduce GHG emissions by diverting organic waste sent to the landfill.

Having a vision to guide the long-term goals and targets of waste diversion initiatives is key to ensuring that measures being undertaken are communicated and it is clear how actions impact the long-term goal of diverting waste. The Vision highlights actions, identifies gaps that remain, and presents next steps to creating a comprehensive Strategy to develop a strong pathway to achieve diversion rates of 70% and beyond – to ultimately achieve Zero Waste in Brantford.

Current State



Diversion is the percentage of materials **reduced, recycled or composted** and therefore diverted from landfill disposal.



City of Brantford's Vision for Solid Waste

Vision

Develop a waste management system where at least 70% of residential waste is diverted from landfill through waste avoidance, reuse, composting and recycling by 2050.

Our waste conscious City will protect our environment and climate, ensure community-well being, build strong partnerships, spark innovation, all while supporting the local economy.

Mission

To maximize resource recovery in an effective and economically feasible way to sustain a clean, healthy community and extend the operating lifespan of the Mohawk Street Landfill.



Environmental &
Ecological Health



Partnerships
& Innovation

Community
Well-Being



Economic
Prosperity





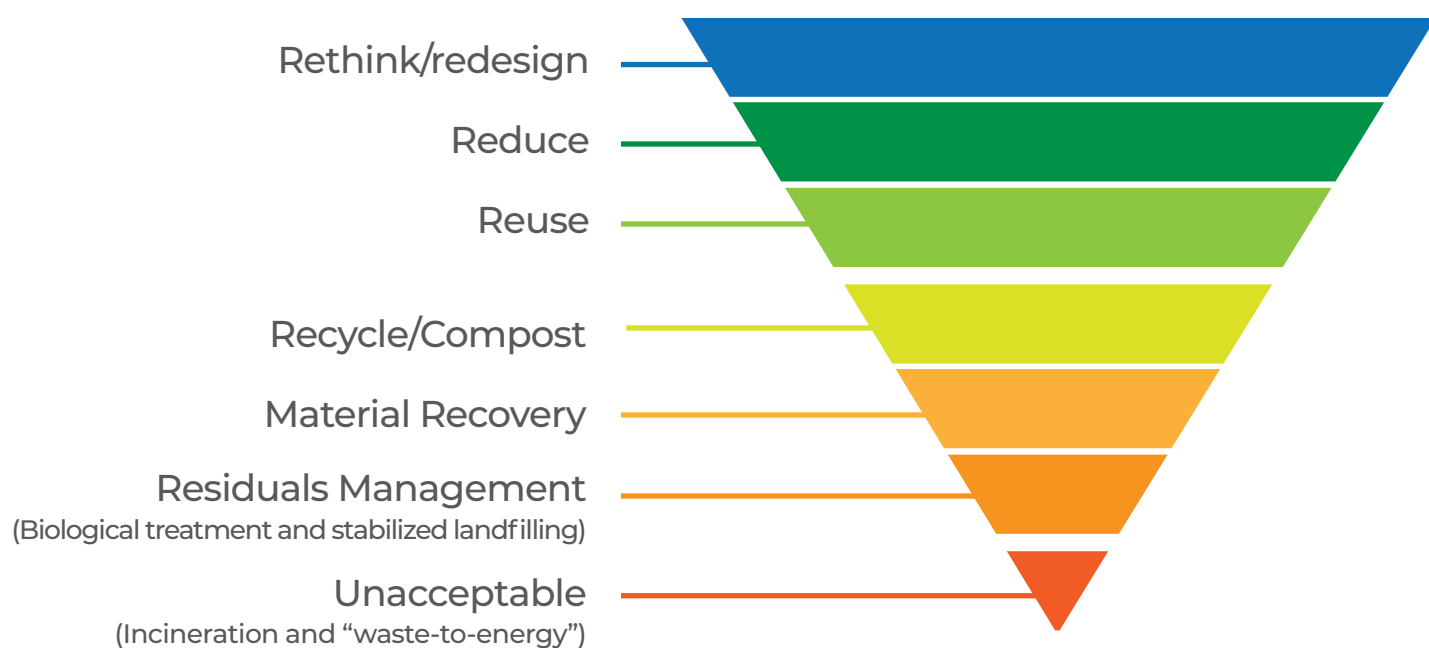
Zero Waste Hierarchy

The City of Brantford's Vision for Solid Waste aligns with the Zero Waste Hierarchy of Highest and Best Use¹, and aims to build a strong foundation to minimize our waste generation through:

- Financial incentives
- Enhanced education and outreach
- Diversion through increased composting and recycling; and
- Developing a circular economy

Achieving diversion targets beyond 70% as identified in this Vision is an ambitious endeavour that will only be possible with a shift in priorities and change in peoples' behaviour. Once these shifts in behaviour are made, it will be possible to focus on a Zero Waste Vision.

The Zero Waste Hierarchy 7.0



1. Zero Waste International Alliance (2021) Zero Waste Hierarchy of Highest and Best Use.



Integrated Connections

Climate Action

The City declared a Climate Emergency in 2019 with the goal of becoming a net-zero carbon community by 2050. The City’s Climate Change Action Plans present areas in which the Corporation and City residents can reduce their GHG emissions to curb the impacts of climate change.

Our waste reduction framework supports the Climate Change Action Plan by reducing organic waste generation and increasing diversion from landfills. GHG emissions result from the decomposition of organic material in the landfill, such as food, yard and garden, and wood waste, that release toxic gases as they decay without oxygen.

Environmental, Economic, and Social Sustainability

The three pillars of sustainability is a holistic structure used to anticipate the impacts of our zero-waste framework on our physical environment, community well-being and economic systems. The following pillars will be considered in the development of new waste reduction and diversion programs, services and policy over time.

 Economic	 Environmental	 Social
• Responsible growth and resource management • Support economic growth while reducing environmental impacts • Supporting the production of goods and services in an economically viable way with minimal wastage of resources and materials	• Encouraging environmental stewardship through sustainable consumption and reduced waste generation • Support actions that contribute to clean, healthy, resilient and biodiverse ecosystems • Reduce GHG emissions from solid waste	• Protection of human well-being and safety • Support high quality of life while continuing to grow • Meaningful community action in response to problems of unsustainable practices and unsatisfied social needs • Social inclusion and equity



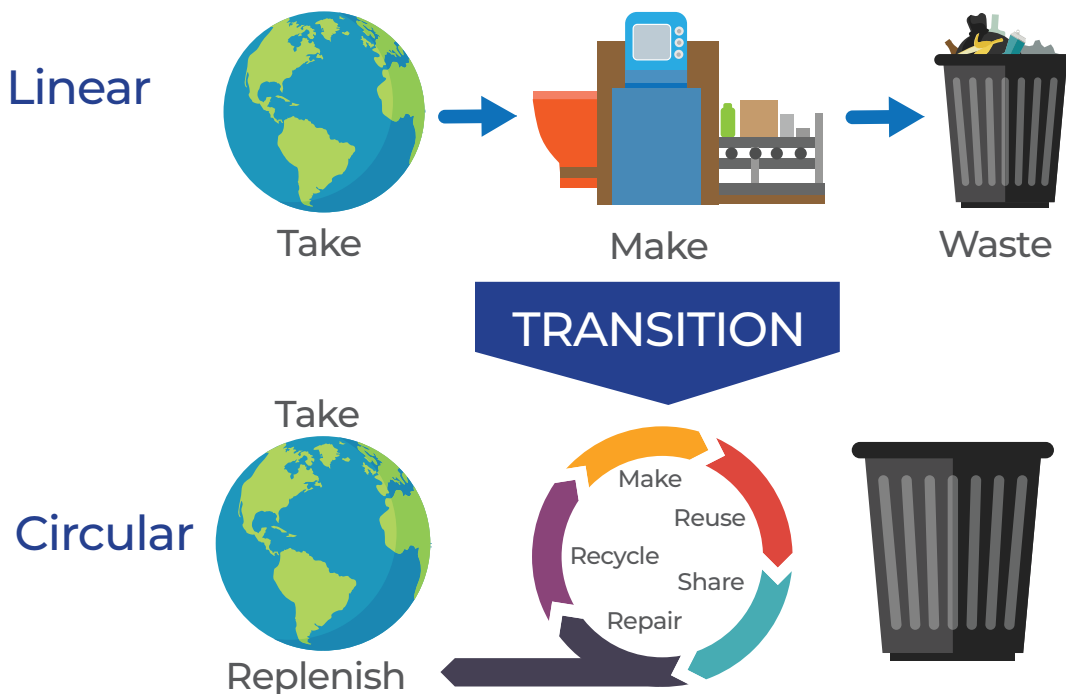
Time for Action

Why Reduce Waste?

As a city with a commitment to long term sustainability, climate action, and community well-being, we aim to foster growth and development while ensuring our present actions provide future generations with a great or improved well-being.

The current take-make-dispose behaviour of linear consumption and single-use items is unsustainable, and has negative impacts on our environment, economy, community, and climate. By designing waste out of our system, exercising reuse, composting, recycling, and reintegration of materials back into the economy, we will:

- Preserve existing landfill space
- Conserve our natural resources
- Reduce our carbon footprint

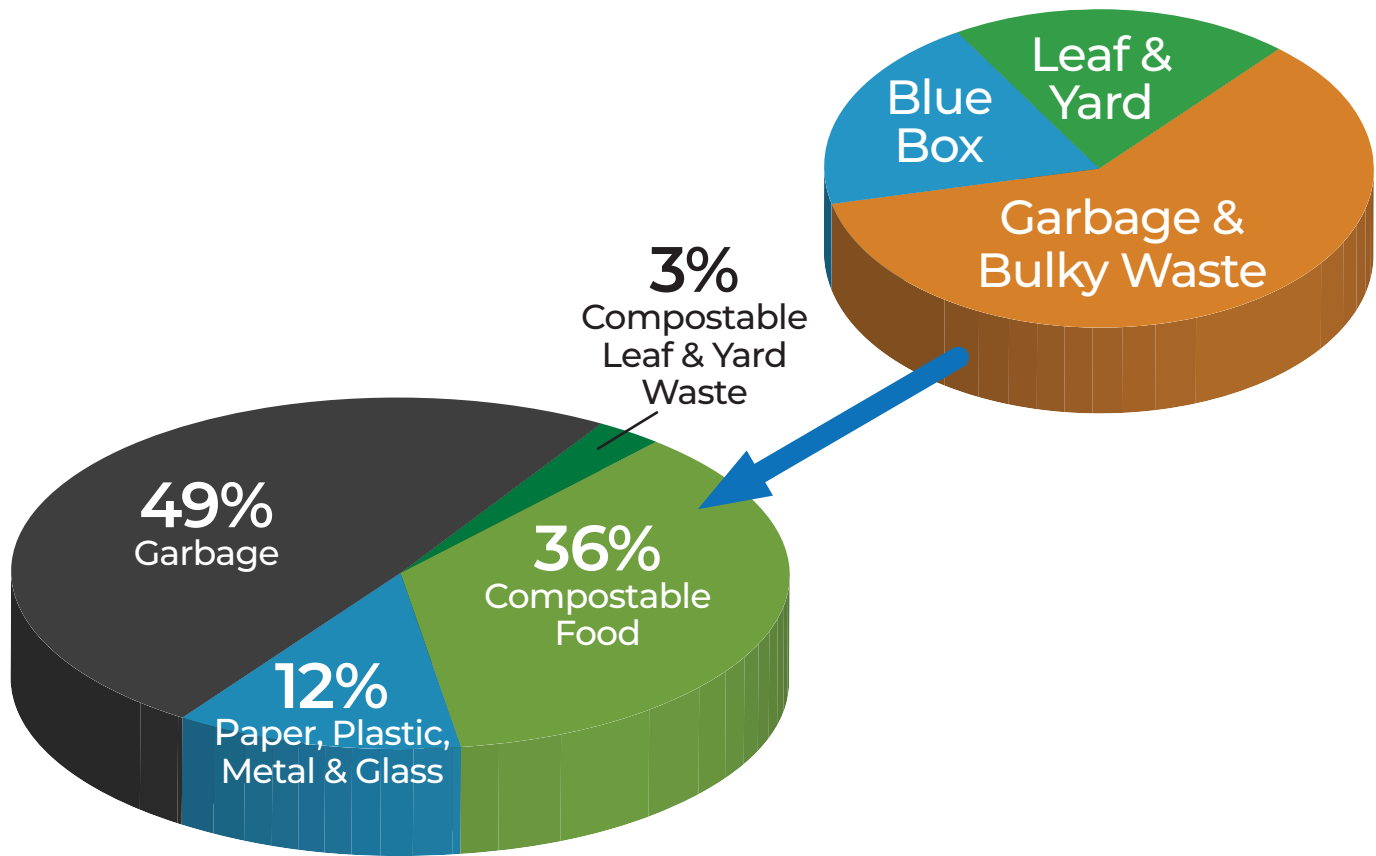


The Mohawk Street Landfill site is an irreplaceable asset to the community. As waste continues to be generated, landfill space continues to diminish, and it is estimated that at the current rate of waste production in Brantford the Landfill will reach its capacity by 2065. To extend the lifespan of this valuable resource, it is imperative that we work together as a City to achieve our waste diversion targets.



Current State

- The City’s 2020 residential waste diversion rate was estimated at 35%²
- Households typically set out 1.6 bags per week
- Curbside collection breakdown in Brantford:



Brantford’s Typical Single-Family Home Garbage³

51% of garbage setout can be diverted:

- 3% Leaf & Yard Waste
- 36% Household Food Waste
- 12% is Paper, Plastic, Metal and/or Glass

2. AET (2018) Single Family Curbside Waste Composition Study Summary Report – City of Brantford. Report.
3. The City of Brantford (2020) Landfill and Diverted Materials Summary.



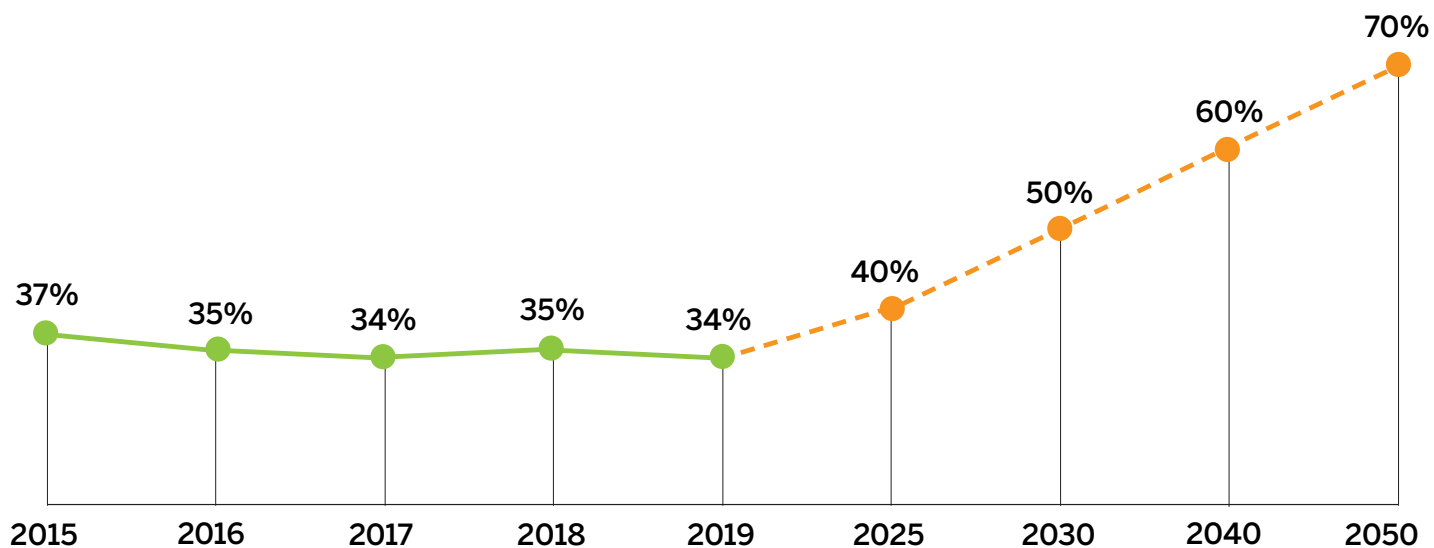
Setting Targets

Proposed actions fall under timeframes for implementation over the next 30 years to 2050. The targets presented in this strategy will consider:

- Legislation requirements;
- Available resources;
- Level of effort and ease of implementation; and
- Impact on waste reduction and diversion strategies to preserve landfill space.

Targets were developed using the City's 2020 diversion rate of 35% as a baseline and assuming a 2050 population of 160,200.

Projected values were estimated using 2018 residential single-family home waste composition data to indicate the diversion potential specific to the action.





Short, Medium, Long-Term

40% by
2025

- Green Bin program for single family homes
- Phase in garbage bag limit to max. 2 bags/week to increase organic diversion and recycling
- Blue Box EPR Transition January 2025
- Education and Awareness to reduce waste generation, increase sorting and increase program participation

50% by
2030

- Bi-weekly garbage collection
- Multi-unit residential Green Bin collection program
- Ongoing community education and outreach to increase recycling and compost participation, reduce waste generation

60% by
2040

- Landfill bans and restrictions on recyclables, organics, and/or other materials
- Partnerships in developing a Community Organics Hub
- Ongoing community education and outreach

70% by
2050

- Exploration of new, emerging and innovative technology and systems
- Variable rate pricing systems (Pay-as-You-Throw)
- Ongoing community education and outreach



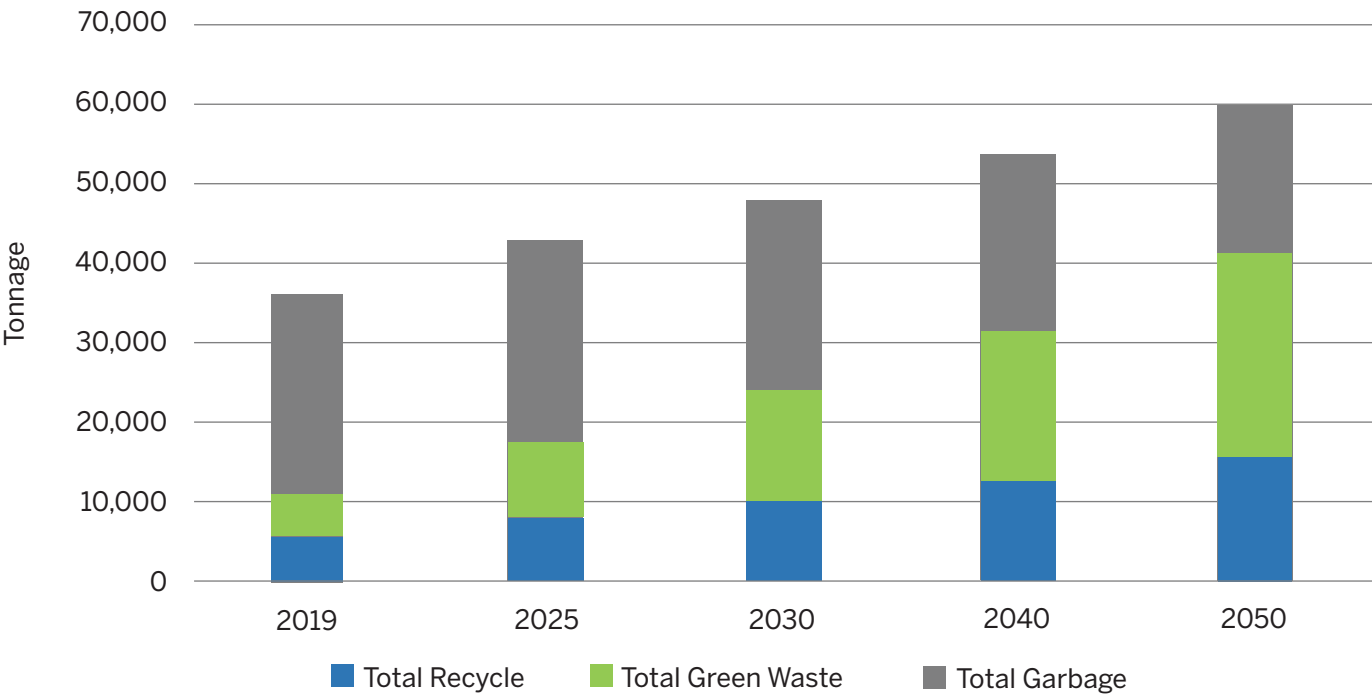
70% Waste Diversion Target

With the successful implementation of the proposed action items, over time, the City’s program could divert up to 70% of residential solid waste by 2050.

As shown in Figure 1, with the action items proposed in this vision/framework, the City could increase waste reduction and diversion from 34% (11,240 tonnes) in 2019 to 70% (41,100 tonnes) by 2050.

This will be achieved by increasing the total leaf and yard and food waste composted (green), recycled (blue), and decreasing the total waste to landfill (grey).

City of Brantford Waste Reduction & Diversion Tactics





Implementation Roadmap – Key Dates

Present

Draft Visioning Plan and Development Report to Council January 2022

2022 - 2023

Preparation of Visioning Planning Document & Public Consultation and Community Engagement Roadmap development to:

- Reduce garbage
- Increase Blue Box and yard waste diversion
- Divert household Organics
- Undertake research on additional actions (e.g. climate action, organics hub, path towards Zero Waste, etc.)

2024

Presentation of Recommendation and Implementation Report to Council on Results of Visioning Process and Consultation

2025 and Beyond

- Visioning Plan Implementation
- Public education
- Monitoring plan targets and achievements
- Reporting and updating
- Reduce garbage set <2 bags/week
- Reduce to bi-weekly garbage collection

January 1st, 2025 - City Blue Program scheduled to transition to Producer Operated Responsibility (PRO)

December 31st, 2025 - Provincial policy deadline municipalities are to have an organics collection program in place for Single Family Dwellings

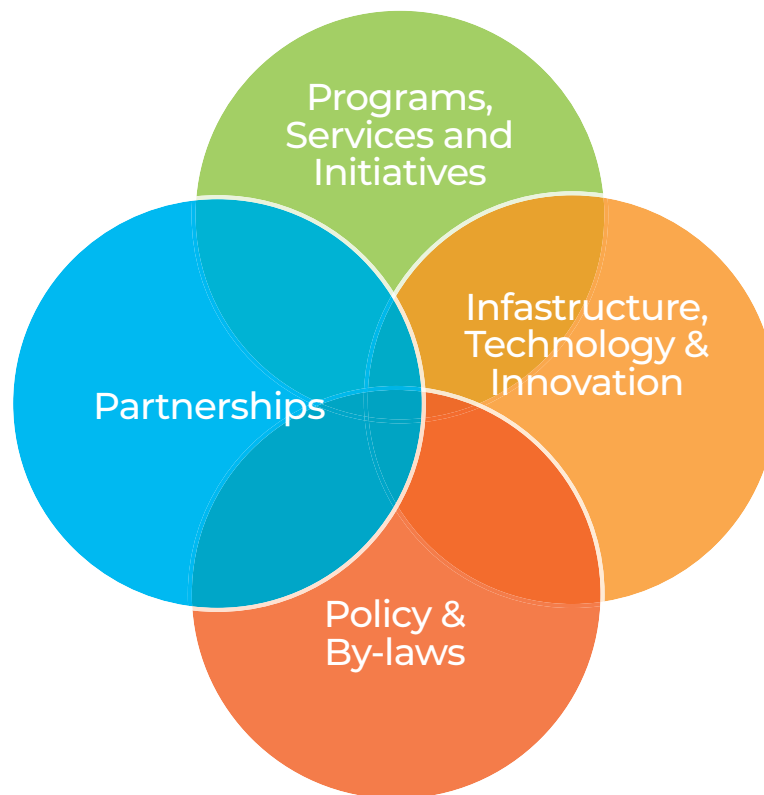


Pathway to Zero Waste

As the waste reduction and diversion plan continues to be developed, specific areas of focus will drive waste reduction and diversion actions, and circular economy approaches forward.

This may include:

- Encouraging higher levels of diversion with limits or restrictions on the amount of waste that our residents can dispose
- Enacting by-laws to ensure high volume waste materials are being diverted
- Informing residents about the impact of contamination and providing clear and specific solutions to preventing contamination
- Enhanced education and public outreach to communicate and incentivize waste reduction and increase diversion at the source



The ultimate goal of moving towards Zero Waste will provide the opportunity to maximize the operating lifespan of the current landfill; one of the City's most important and difficult to replace assets.



Areas of Opportunity

In order to identify gaps and areas of opportunity along the way of achieving 70% diversion by 2050, **a waste comprehensive review of the current solid waste system should be undertaken** to identify the materials currently being used and disposed, how much, and where they can be eliminated or better managed through enhancing existing programs and/or implementing new programs, services, initiatives, policies, bylaws, etc.

In addition to a complete systems review, the exploration of further waste reduction and diversion actions should include research into best practices, a detailed analysis of current waste composition studies to determine target areas and materials and potential partnerships with government, business, industry, academia, etc. to identify areas of collaboration and support. To supplement new actions, provincial/federal funding will be explored.

As a city committed to environmental sustainability, climate action, and preserving the life of our landfill beyond 2070, the objective to reach zero waste or at least 90% waste diversion beyond our 2050 goal will be adjusted and evolve over time as current conditions dictate.





Coordinated Approaches

Thinking Outside the Blue Box and Green Bin

Achieving a diversion rate beyond 70% requires action beyond just the existing curbside recycling and yard waste to explore strategic partnerships, innovative approaches and advanced technology, and provincial/federal financial support systems, such as:

- Development of organics hub with neighboring communities
- Partnerships with academia and industry in support of circular economy approaches, innovation and new technologies
- Securing provincial/federal funding to assist with development/construction of an anaerobic digester
- Promoting and supporting zero waste within local business and industry
- Ensuring responsive and continual customer feed back to address problems/concerns
- Financial incentives such as Pay-as-You-Throw systems or fines for contamination

The solid waste program will need to continually encourage and enable residents to elevate diversion levels through the development of new, accessible and convenient programs and resources, such as:

- Targeted curbside contamination notices to communicate sorting information
- Ongoing public engagement i.e. online surveys to collect user perspectives, needs and feedback
- Online tools and resources to answer questions and communicate sorting clearly and instantly
- Community based social marketing and behavioural change science to develop educational campaigns to shift behaviour and thinking to instill zero waste culture



Zero Waste Vision – Moving Forward

A set of guiding principles has been identified to lead the development of the next steps to achieve a diversion rate of over 70%. These core values reflect the priority to reduce waste generation and maximize diversion and work to establish a strong circular economy network, all while contributing to the City's Climate action goals by reducing GHG emissions from organic waste disposal.

Guiding Principles

New program development will include public engagement and consultation, incorporate feedback and perspectives, and will be designed in a way that is effective, accessible and inclusive.

Our waste diversion goals will aim for synergy alongside wider systems through collaboration with the Province, neighbouring jurisdictions, business, industry, academia, and local organizations to build a cohesive system working together in support of a common goal.

The program should lead by example. With waste reduction and diversion integrated into future planning, operations and interdepartmental plans, frameworks and strategies, it should also remain current with new and emerging research and technology to explore innovative waste reduction approaches.





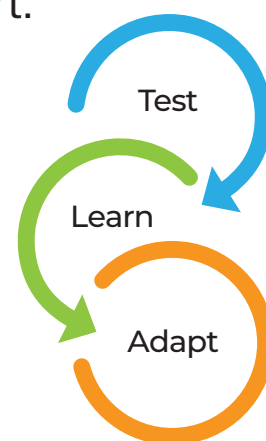
Next Steps

Achieving goals requires access to programs, services, and initiatives and the participation and commitment of Brantford residents. An inclusive public and stakeholder consultation process will be undertaken to gauge user perspectives, incorporate feedback, and gain support.

When necessary, it will be essential to test new programs, services, and initiatives on a small scale before implementing at full scale.

Pilot programs will allow us to:

- learn and improve while limiting risk
- forecast and plan for full-scale implementation
- provide valuable feedback
- inform efficacy and feasibility



Measuring Progress

It will be important to conduct a comparison of the current and desired future state to identify strengths and opportunities. Key performance indicators will be established and monitored to measure our performance as our vision progresses.

We will update our current solid waste tracking, monitoring and reporting systems to provide quantifiable guidance in our plan development. Tracking key performance indicators annually will be used to determine diversion, reduction and contamination rates. To ensure our objectives are being met, it is also important to monitor:

- the overall quantity of garbage, recycling and organics generated
- the quantity of waste generated per person
- the quantity of waste generated per household

The proposed framework is designed to be adaptive, flexible and to evolve. As it develops, consideration will be given to how waste streams might change as policy and legislation progresses, technology advances, research evolves, consumer behaviour shifts and new products are developed and consumed.

The action items within the proposed framework are anticipated to be relevant and effective within the short-medium term will need to be revisited and continually updated moving forward.