



The Corporation of the City of Guelph

Solid Waste Management Master Plan

Current State Report

October 2021



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Executive Summary

The City of Guelph (City) is updating its Solid Waste Management Master Plan (S W M M P). This Current State Report (Report) is a sub-report for the Solid Waste Management Master Plan. The Report provides information on the City's existing integrated solid waste management system, which will serve as a baseline for the development of options for the S W M M P and assessing progress. The Report provides summaries of the City's current solid waste program and services, waste diversion performance and benchmarking against Council approved comparator municipalities and current operational issues and challenges.

The City, located in Southwestern Ontario, Canada, approximately 100 kilometres west of the City of Toronto, was established in 1827. According to the 2016 Statistics Canada Census data, 131,974 people live in the City. The City's population grew by 8.3% between 2011 and 2016, or by 10,106 people. During this period, the number of occupied private dwellings increased by 3,518 (6.7%).

The Waste Resource Innovation Centre (W R I C) receives all wastes managed by the City. This integrated waste management site is located at 110 Dunlop Drive in the southeast part of Guelph, and it is approximately 29.54 hectares in size. The W R I C facility operates under a combined E C A No. A170128. Within the W R I C is the Administration building, weigh scale operations, Materials Recovery Facility (M R F), Organics Waste Processing Facility (O W P F), Public Drop-off Area (P D O), Municipal Hazardous and Special Waste (M H S W) Depot and Transfer Station. Waste materials are received at the site at designated gates from curbside collection, general public and commercial vehicles. On-site processing of blue cart, materials occurs at the M R F and green cart materials at the O W P F. All other materials are transferred either to processing facilities for other recyclable or compostable materials or the landfill for garbage.

The City offers weekly organic (green cart) and bi-weekly garbage (grey cart) and single-stream recycling (blue cart) collection to approximately 30,860 single family homes. Leaf and yard waste is collected twice per year (spring and fall), loose leaf collection once per year (conducted by City Operations) and bulky waste collection (by appointment with an additional fee) is provided year-round.

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The City services about 19,750 of the approximately 26,800 multi-residential units (74%) with garbage, recycling and organic collection services, provided they adhere to the requirements of the Waste Management By-law ((2019)-20392), which includes sorting waste into three streams and using City carts or front end bins. The City has a 54% diversion rate for residential waste, as reported by the Resource Productivity and Recovery Authority (R P R A) for 2019.

For promotion and education, the City provides various methods to promote and educate residents on waste management in Guelph through the Waste Wizard (an online search engine), collection calendar available within the Waste Wizard, waste carts user guides and the free Guelph Waste App (Re-Collect) and various other media such as print ads, radio ads, and social media.

Solid Waste Resources provides regular communications to residents that promote the 3Rs (Reduce, Reuse and Recycle) and educate on how to properly manage the different waste streams. The City requires event organizers to apply for a special events permit. The City also has the Waste Diversion Education Centre which is located in the O W P F and provides visitors with an understanding of how Guelph's organics, recyclables and garbage are collected and processed and how to minimize the amount of garbage created.

In 2016, the City completed waste audits for single family homes, multi-residential units, the downtown core and public spaces. Audits were completed seasonally in the spring, summer, fall and winter on the garbage, recyclables and organics streams. For this Current State Report, the 2016 waste audit data was used to build an as-generated waste stream characterization breakdown (i.e., Total Waste Characterization) for all the sectors assessed. The audit noted that all sectors had strong diversion practices. However, there is still potential to divert from landfill disposal, which was noted on the garbage stream audit results.

Within the Current State Report, to gauge the effectiveness of the City's waste management system performance, a select number of municipalities that are comparable to Guelph were contacted and asked to provide information on their waste management system. Five comparator municipalities were chosen and assessed for waste diversion, including programs, policies and enforcement and promotion and education.

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It was noted that all comparator municipalities have several similarities, and the City provides a number of comparable waste diversion programs.

This Current State Report will be used as a baseline to compare future initiatives and changes to the waste management program as a result of the S W M M P.

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Acronyms

A M O	Association of Municipalities Ontario
C & D	Construction and Demolition
C C M E	Canadian Council of Ministers of the Environment
E C A	Environmental Compliance Approval
E P R	Extended Producer Responsibility
G H G	Greenhouse Gas
L F G	Landfill Gas
L Y W	Leaf and Yard Waste
I C & I	Industrial, Commercial and Institutional
K P I	Key Performance Indicators
M E C P	Ministry of the Environment, Conservation and Parks
M H S W	Municipal Hazardous and Special Waste
M R F	Materials Recovery Facility
O W P F	Organics Waste Processing Facility
P & E	Promotion and Education
P D O	Public Drop-off Area
R P R A	Resource Productivity and Recovery Authority
R R C E A	Resource Recovery and Circular Economy Act
S S O	Source Separated Organics
S U P	Single-Use Plastics
S W A N A	Solid Waste Association of North America
S W M M P	Solid Waste Management Master Plan
S W R	Solid Waste Resources

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W F O A	Waste-Free Ontario Act
W D A	Waste Diversion Act
W D O	Waste Diversion Ontario
W D T A	Waste Diversion Transition Act
W R I C	Waste Resource Innovation Centre
Y W	Yard Waste



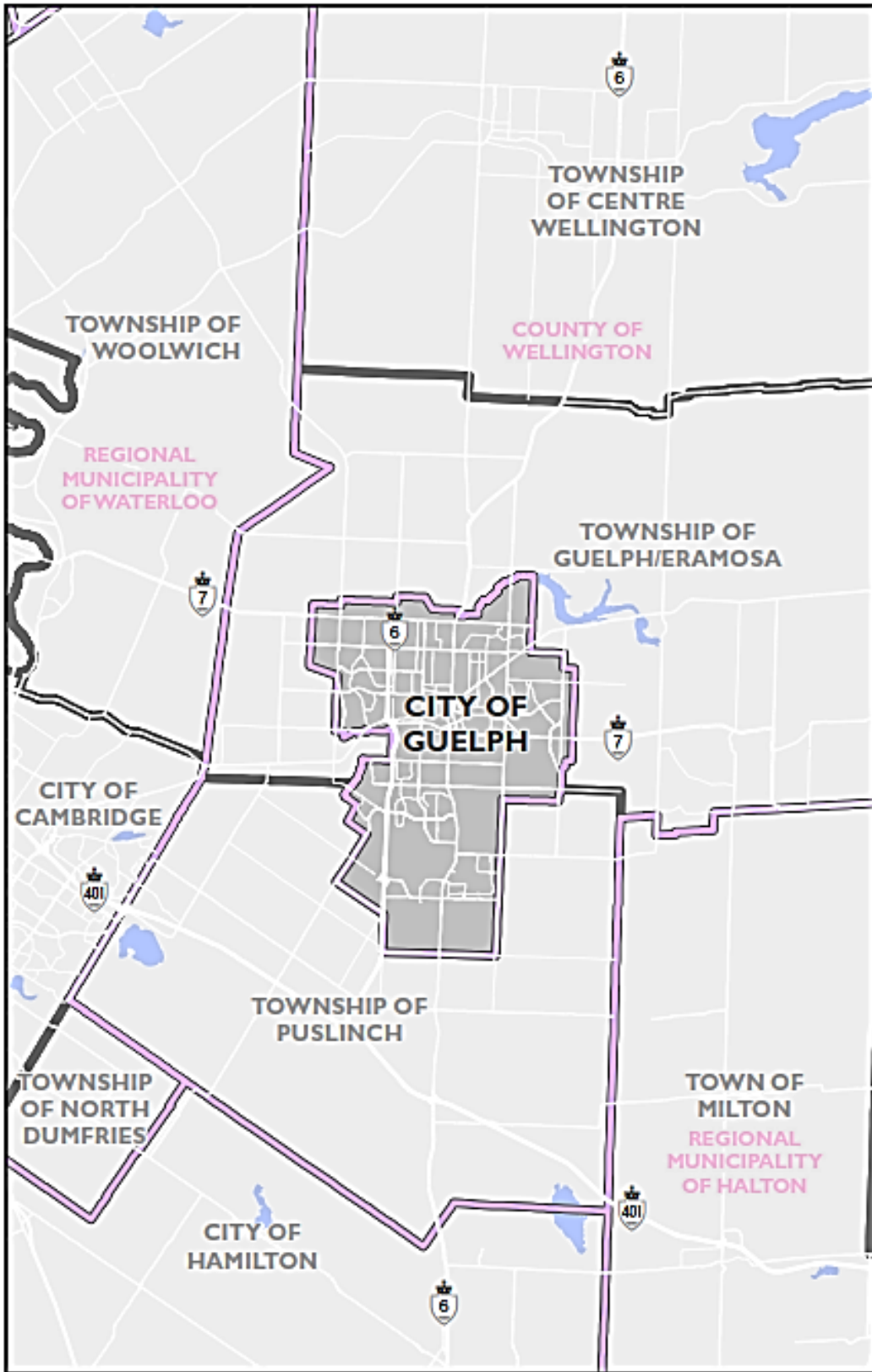
1.0 Introduction

1.1 Study Area

The City of Guelph (City) was established in 1827 and is located in Southwestern Ontario, Canada, approximately 100 kilometres west of the City of Toronto. Situated within Wellington County, the City is a single tier municipality, surrounded by agricultural country, and also features diversified economic activity from the life science, information technology, environmental enterprise, automotive and advanced high-technology industries. **Figure 1** shows the location of Guelph and adjacent municipalities.

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Figure 1: Location Map



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The City has developed a strong integrated waste management system offering a wide range of waste diversion services to the community. As a result of the community support and access to diverse waste collection services, the City had surpassed the first two residential waste diversion targets established by the 2008 Solid Waste Management Master Plan (S W M M P), 55% by 2011, and 65% by 2016¹. However, recently (prior to COVID-19) Guelph has seen an increase in the weight of garbage and a drop in the weight of recyclables collected at the curb, in addition to an increase in improperly sorted waste. These factors contribute to the recent drop in the City's diversion rate, which has slipped over the last several years and is currently at 54%. The City has well established curbside and drop-off programs, which are targeted towards single family, multi-residential, commercial and construction and demolition (C & D) waste.

1.2 Population and Housing

According to the 2016 Statistics Canada Census data, 131,974 people live in the City. The population grew by 8.3% between 2011 and 2016, or by 10,106 people. During this period, the number of occupied private dwellings increased by 3,518 (6.7%). Approximately 17% of the City's population is under the age of 14, 68% is between the ages of 15 and 64, and 15% is over 65. The population density is 1,511 persons per square kilometre, with an average of 2.5 occupants per residence².

¹ City of Guelph – Automated Collection System. (2016).

² Statistics Canada. 2020. Guelph

2.0 History of Waste Management in Guelph

2.1 Waste Disposal

From 1961 to 2003, the City operated the Eastview Road Landfill Site to manage the waste generated by the community. In 1995, the City began its wet-dry recycling collection program, which prompted the City to build a Wet-Dry Recycling Centre on Dunlop Drive. The dry stream was commissioned first, followed by the wet stream two months later.

In June 2000, Guelph's City Council decided to start seeking future solid waste disposal capacity through an agreement with a landfill owner outside the City boundaries. Since the proposed disposal site was not located close to Guelph, the City required a transfer station to consolidate waste collected by curbside collection vehicles into larger transfer-trailer vehicles. In 2003, the City constructed the Solid Waste Transfer Station adjacent to the Wet-Dry Recycling Centre. The Solid Waste Transfer Station is designed to manage up to 299 tonnes/day of waste, calculated on a weekly average (six days), including municipal, industrial, commercial, and institutional wastes (I C & I). The Transfer Station began receiving waste on October 14, 2003, at the same time that the Eastview Road Landfill Site was closed and decommissioned.

In 2009, the City initiated the development of the new Organic Waste Processing Facility (O W P F). In 2011, the O W P F was commissioned and began processing source-separated organics (S S O) into clean, nutrient-rich compost. The O W P F is designed to handle 30,000 tonnes of organic material per year to ensure efficiencies of scale and allow for future population growth. To take advantage of the excess capacity, the City benefits by receiving organic waste from the Region of Waterloo, which offsets operating and capital costs.

The City's Wet-Dry Recycling Centre later became the Waste Resource Innovation Centre (W R I C) and is located at 110 Dunlop Drive in the southeast part of Guelph. The overall site is 29.54 hectares and is designed as a composting and multi-material recovery operation for the City.

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A municipal hazardous and special waste (M H S W) depot is part of the W R I C infrastructure. In 2015, a public drop-off (P D O) was added to collect and manage wastes such as construction debris and bulky waste. The P D O also provides residents with an alternative to curbside collection. Fees are applied depending on the waste that is brought to the P D O by residents. Certain recyclable materials can be brought to the W R I C at no charge at the Recycling and Yard Waste zone.

Several waste management operations are carried out at the W R I C, which is licensed to handle up to 1,000 tonnes of residual waste transported for disposal per day. These waste management operations include:

- O W P F (active since 2011)
- Processing of recyclables through the Material Recovery Facility (M R F), active since 1996 as multi-stream M R F and converted to single-stream in 2003
- Transfer Station for grey cart material from the curbside collection and residential and commercial drop off, as well as, residues from the O W P F and M R F to disposal off-site
- A P D O (active since 2015)
- A M H S W depot (active since 1996)

All of the facilities and operations at the W R I C operate under a combined Ministry of the Environment, Conservation and Parks (M E C P) Environmental Compliance Approval (E C A No. A170128, dated February 10, 2011)³.

In terms of waste collection, a waste diversion recommendation of the 2008 S W M M P was to move to an automated cart-based program for all three waste streams, which would increase the City's waste diversion rate and create operational efficiencies in the long-term. In August 2010, City Council approved the transition from a manual bag-based collection system to an automated cart-based collection system. The cart-based collection system for organics, recyclables and garbage stream was phased in over three years from 2012 to 2014⁴.

³ File Received: 2019 W R I C. Annual Report

⁴ File Received: 2019 Annual Report

3.0 Solid Waste Management Policies and Legislation

3.1 Federal Government

The following section details some of the relevant Federal government policies and legislation that may impact how solid waste is managed in the City.

3.1.1 Federal Policies

3.1.1.1 Single-Use Plastics

On June 10, 2019, the Federal government announced its intent to pursue a ban on select single-use plastics (S U Ps), which would largely mirror the ban currently being implemented by jurisdictions in the European Union. It is important to note that supporting legislation and details on this potential ban have not yet been developed and should be considered a “statement of intent” rather than a statutory direction on single-use plastics in Canada.

It is also worth noting that these potential plastic bans align with the efforts of the Canadian Council of Ministers of the Environment’s (C C M E) Strategy on Zero Plastic Waste and the National Zero Waste Council’s focus on Product Design and Packaging. Both leading national organizations are also committed to supporting a Canada-wide shift from a “take-make-dispose” economy to a circular economy. Despite these commitments and the valuable work done by both organizations, the specifics on “how” and “when” remain largely unknown at this time.

At the time of this report, the world is experiencing the global pandemic caused by COVID-19, which has caused a pause to progressive movements towards reducing/eliminating S U Ps and, instead, has been increased significantly due to health and safety concerns. The S W M M P report on S U Ps (Task 3) will be updated to capture the latest trends related to the generation and management of S U Ps.

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3.1.2 Federal Legislation

The following are some of the federal legislation that may impact how waste is managed in Guelph:

- The Canadian Environmental Protection Act
- Migratory Birds Convention Act, 1994
- Weights and Measures Act
- National Pollutant Release Inventory
- Federal Climate Change Policy
- Canadian Food Inspection Agency Act

3.2 Canadian Council of Ministers of the Environment (C C M E)

C C M E is the primary minister-led intergovernmental forum for collective action on environmental issues of national and international concern. C C M E, composed of the environment ministers from the federal, provincial and territorial governments, discuss national environmental priorities and determine work to be carried out under the C C M E .The C C M E seeks to achieve positive environmental results, focusing on issues that are Canada-wide in scope and that require collective attention by a number of governments. Ministers set the strategic direction for the Council, setting out the broad outcomes they seek to achieve. There are seven current working groups, including the Climate Change Committee and the Waste Reduction and Recovery Committee. C C M E is supported financially and in-kind by the environment departments of the governments.⁵

The C C M E's vision for waste is for Canada to be a world leader in waste management. As such, the ministers endorsed the Aspirational Canada-Wide Waste Reduction Goal in 2018 that is intended to encourage and highlight waste reduction progress in Canada. This Canadian-wide goal will be measured through Statistics Canada's Waste Management Industry Survey that measures the per capita waste statistics of 30% reduction of per capita waste disposed by 2030 (based on the 2014 rate of 706 kg/capita) and a 50% reduction (or 350 kg/capita) by 2040.

⁵ <https://www.ccme.ca/en/about/index.html>. Accessed August 2020.

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The C C M E approved in principle the Canada-wide Strategy on Zero Plastic Waste in 2018 and in 2019, approved the Phase 1 Action Plan to begin implementation of the Strategy. The Strategy was developed through collaboration with federal, provincial and territorial governments and from public and stakeholder consultation and identifies action areas that are consistent with the [Ocean Plastics Charter](#) that was launched by Canada at the 2018 G7 meeting.

The C C M E is still continuing with its implementation of initiatives such as the Canada-wide Action Plan on Extended Producer Responsibility (C C M E, 2009).

3.3 Provincial Government

The following section details some of the relevant Provincial government policies and legislation that can impact how solid waste is managed.

3.4 Provincial Policies

3.4.1 Food and Organic Waste Policy Statement

Ontario's Food and Organic Waste Policy Statement, approved by the Ontario Cabinet in 2018, sets a policy direction for the Province for food and organic waste. It is a legal document providing direction to public and private parties on "waste reduction and resource recovery through preventing and reducing food waste, effectively and efficiently collecting and processing food and organic waste, and reintegrating recovered resources back into the economy." It states that certain sectors must ensure that they act in a manner that is consistent with the policy statement when engaging in actions related to resource recovery and waste reduction. The Policy must be cross-referenced and considered alongside other existing policies, e.g., Environmental Protection Act; Planning Act; Environmental Assessment Act; Water Resources Act; etc.

The Statement references the Ontario Food Recovery Hierarchy, which provides the following priorities in order of importance:

- i. **Reduce:** prevent or reduce food and organic waste at the source.
- ii. **Feed People:** safely rescue and redirect surplus food before it becomes waste.

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- iii. **Recover Resources:** recover food and organic waste to develop end products for beneficial reuse.

Resource recovery means the extraction of useful materials or other resources from things that might otherwise be waste, including reuse, recycling, reintegration, regeneration or other activities. This includes the collection, handling, and processing of food and organic waste for beneficial uses. **Beneficial use** means the use of recovered food and organic waste to recover nutrients, organic matter, or moisture to improve soil fertility, soil structure, or to help build soils where they do not exist.

Part II: How to read the Policy Statement states: "Section 14 of **the Resource Recovery and Circular Economy Act, 2016** requires amendments to official plans, zoning by-laws, other by-laws and prescribed instruments related to **waste reduction** and **resource recovery** where necessary to ensure consistency with policy statements."

The recent amendments to the City’s Waste Management By-law (2019) - 20392 include specific references to the Provincial Food and Organic Waste Policy Statement in:

- SCHEDULE F - Waste Collection Guidelines for Multi-residential Developments in the City of Guelph
- SCHEDULE G - Waste Management Plan and Source Separation Commitment for Multi-residential Developments
- SCHEDULE H - Waste Management Plan and Source Separation Commitment for Existing Properties

Overall, the City’s Waste Management By-law requires source separation, including separation of food waste as a condition for receiving City collection service.

Policy Statement Section 4 – Targets and Recover Resources from Food and Organic Waste

Section 4 has policy directions and targets for each of the residential, multi-residential, industrial, commercial and the institutional sectors. The following summarizes the policy’s diversion percentage targets and timelines of food and organics by each sector’s generator of relevance to the City:

- 4.1 – Municipalities that provide source separated food and organic waste collection shall maintain or expand these services to ensure

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residents have access to convenient and accessible collection services. Other collection methods, such as directing disposal streams to mixed waste processing, may be used to support the collection of additional materials.

Target: 70% waste reduction and resource recovery of food and organic waste generated in urban settlement areas by 2023.

- 4.10 to 4.13 – Multi-unit residential buildings shall provide collection of food and organic waste to their residents. Source separation is preferred, but like 4.1, alternatives to collecting this stream may be used if it demonstrates that Provincial targets can be met. Best practices need to be implemented, and buildings need to promote and educate residents to increase participation. **Target: 50% waste reduction and resource recovery generated at the building by 2025.**
- 4.14 to 4.17 – The Statement provides direction to certain groups under the industrial and commercial sectors (e.g., retail, office, restaurants, hotels, motels, large manufacturing) based on the quantity of food and organic waste generated each week. **Target: ranges from 50% to 75% waste reduction and resource recovery, depending on the quantity of food and organic waste generated in the facility by 2025.**
- 4.18 – Educational institutions and hospitals, subject to O.Reg. 103/94, that generate more than 150 kg of food and organic waste per week shall source separate that stream. **Target: 70% waste reduction and resource recovery generated in the facility by 2025.**

3.4.2 Made-in-Ontario Environment Plan

On November 29, 2018, the Provincial government's Minister of the Environment, Conservation and Parks presented his government's "[Made-in-Ontario Environment Plan](#)". This plan essentially "supersedes" the Waste-Free Ontario Strategy, although the Waste Free Ontario Act (W F O A) and the two schedules remain in effect. This new plan retains a circular economy perspective and outlines four main areas of environmental action:

1. Help protect our air land and water
2. Address litter and reduce waste

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3. Support Ontarians to do their share in reducing Greenhouse Gas (G H Gs)
4. Help communities and families prepare for climate change

In the area of reducing waste (and addressing litter), two specific actions were identified:

1. Reduce plastic waste by: working with other provinces/territories and the federal government to develop a waste strategy to reduce plastics waste including microplastics to lakes and rivers (e.g., include the Great Lakes national/international agreements) and improve national standards that address recyclability and labelling for plastic products and packaging to reduce the cost of recycling.
2. Make producers responsible for the waste generated from their products and packaging by moving Ontario's existing waste diversion programs to the producer responsibility model. This will provide relief for taxpayers and make producers of packaging and products more efficient by better connecting them with markets that recycle what they produce.

3.5 Provincial Legislation

The following is the key provincial legislation applicable to how waste is managed in Guelph:

- Ontario Environmental Assessment Act which applies to the following:
 - Major projects with significant potential for environmental effects, which require terms of reference and an individual environmental assessment (e.g., new landfill)
 - Projects with predictable environmental effects that can be readily mitigated, which require an environmental screening process (e.g., a thermal treatment facility, transfer station)
 - Projects which are exempt from approval under the Ontario Environmental Assessment Act (e.g., certain changes to landfills or waste disposal sites)
- Ontario Environmental Protection Act – the following are a few key regulations that most strongly influence solid waste management:
 - 225/11: Applications for Environmental Compliance Approvals
 - 452/09: Greenhouse Gas Emissions Reporting

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- 232/98: Landfilling Sites
- 101/94: Recycling and Composting of Municipal Waste
- 102/94: Waste Audits and Waste Reduction Work Plans
- 103/94: Industrial, Commercial and Institutional Source Separation Programs
- 104/94: Packaging Audits and Packaging Reduction Work Plans
- 342/90: Designation of Waste
- 558/00: General – Waste Management
- 153/04: Records of Site Condition
- Ontario Municipal Act, 2001
- Ontario Building Code Act
- Places to Grow Growth Act and Plan
- Ontario Green Energy Act and the Feed in Tariff Program

3.5.1 Waste-Free Ontario Act (W F O A)

On June 1, 2016, the Ontario Legislature passed Bill 151, the W F O A, 2016⁶. W F O A replaced the **Waste Diversion Act, 2002 (W D A)** with a new producer responsibility framework that makes producers individually responsible and accountable for their products and packaging at end-of-life. Under this regime, producers become directly accountable for recovering resources and reducing waste as required by regulation. W F O A set a new course for waste diversion in Ontario, and this new course is resulting in changes in the way local and regional municipalities in Ontario will deliver some waste management services in the future.

There are two Schedules to the W F O A:

- Schedule 1 – The **Resource Recovery and Circular Economy Act, 2016 (R R C E A)** that sets out the new producer responsibility framework
- Schedule 2 – The **Waste Diversion Transition Act, 2016 (W D T A)** that sets out the operation of existing waste diversion programs (including their wind up)

⁶ <https://www.ontario.ca/laws/statute/s16012> (accessed November 2019)

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In late 2016, sections of the W F O A were proclaimed including the continuation of the former Waste Diversion Ontario (W D O), established under the W D T A as the R P R A. R P R A is the not for profit, a non-Crown organization that is responsible for registration, oversight, compliance and, perhaps most importantly, enforcement under the new producer responsibility regime. Its enforcement powers extend beyond what was the case with W D O. Its staff is also much larger, with a broad, electronically based data registry to build and manage, and dedicated enforcement officers.

The introduction of “circular economy” thinking in the W F O A is a key distinguishing feature of this legislation for Canada. One of the important components of the new **Act** is the declaration of 17 specific “provincial interests” (Part 1 of the **Act**) that serve as the framework for policies to be developed by the M E C P. These “interests” are very consistent with circular economy and zero waste thinking including:

- “Minimize greenhouse gas emissions
- Increase the durability, reusability and recyclability of products and packaging
- Minimize the need for waste disposal
- Increase the reuse and recycling of waste across all sectors of the economy
- Hold persons who are most responsible for the design of products and packaging responsible for the products and packaging at the end of life”

Under R R C E A, the Minister was also responsible for developing a “Strategy for a Waste-Free Ontario” intended to build a system that puts valuable materials destined for landfill back into the economy. On February 28, 2017, the Minister released the final “Strategy for a Waste-Free Ontario” (Strategy), after several months of active consultation. The government’s two primary goals in the Strategy were: 1) to achieve zero waste, and 2) to achieve zero G H G emissions from the waste sector. The Strategy was a roadmap to shift Ontario towards a circular economy and zero waste in the future.

The central importance of circular economy thinking to the new waste management legislation in Ontario was equally evident in the Strategy

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document. A circular economy aims to eliminate waste, not just from recycling processes, but also throughout the lifecycles of products and packaging. A circular economy aims to maximize value and eliminate waste by improving the design of materials, products and business models.

A circular economy was described in the Strategy as an economy in which participants strive to:

1. Minimize the use of raw materials
2. Maximize the useful life of materials and other resources through resource recovery
3. Minimize waste generated at the end-of-life of products and packaging

3.6 City Policies, By-laws and Strategies

In addition to policy and legislation at the Federal and Provincial levels, the City has also developed policy frameworks and plans to support and guide the provision of waste management services including the following:

- The 2014 Solid Waste Master Plan to further enhance the City's efforts to achieve its waste diversion goals, and Zero Waste philosophy is outlined in **Section 3.6.1**.
- Guelph's Official Plan which sets out the goals and policies used to manage land use within the City.
- Waste Management By-law:
 - By-law (2019)-20392 – A By-law to provide for the management of waste within the City of Guelph
- Guelph's Community Energy Initiative to become a net zero community by 2050 and Council has set a further goal that City corporate operations will be powered by 100% renewable energy by 2050.
- The City's Strategic Plan serves as a living, breathing plan for Guelph's future. It builds on Guelph's community vision, looking at how the City can achieve aspects of the Community Plan that fall within our areas of responsibility.
- The Sustainable Waste Management Policy (October 2019) ensures that sustainable waste management practices (e.g., avoidance of single-use items) and programs are standardized and applies to

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operations in all City owned and operated facilities, City-run events and all employees.

- Solid Waste Resources Business Service Review, an operational review of programs and services completed in 2018 that resulted in 11 recommendations, including moving forward with an update of the S W M M P, as outlined in **Section 3.6.2**.
- Smart Cities - Our Future Food joint project with the County of Wellington to become the country's first circular economy for food, as outlined in **Section 3.6.3**.

3.6.1 The 2014 S W M M P

The purpose of the 2014 S W M M P was to review and update the 2008 25-year strategy to set a path to achieve new waste minimization, diversion and disposal targets, along with short and long term programs to help achieve the targets. The review showed that Guelph had made significant progress with the recommendations for the 2008 S W M M P. Since 2008 the City's residential diversion rate had increased 30% to 68% in 2012, exceeding the first two targets in the 2008 S W M M P. The City also diverted a high percentage of residential organic waste at 32%. The 2014 strategy reaffirmed the established waste diversion target of 70% by 2021.

The guiding goals and principles of the 2014 strategy were the same as the 2008 strategy, which was to (1) minimize solid waste disposal requirements, (2) minimize the environmental, economic and social impacts of solid waste diversion and disposal, and (3) to ensure fiscal responsibility. This strategy focussed on the following initiatives:

- Maintain the Zero Waste philosophy, take a leadership approach in promoting waste diversion within the community
- Explore alternative methods for recovery of designated materials
- Promote "waste less" principles and policies, share and reuse initiatives
- Transfer responsibility for public space waste collection throughout the City to Solid Waste Resources
- Explore alternatives to landfill
- Establish a Food Waste Reduction Campaign
- Reinstate the twice per year curbside yard waste collection service

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- Implement a Grasscycling Program
- Outreach for residential waste minimization and diversion programs
- Outreach for multi-residential waste minimization and diversion programs
- Explore expanding the development approval process to promote waste diversion in multi-residential properties
- Expand the type of collection services provided to multi-residential properties
- Provide assistance to I C & I establishments
- Develop a C & D waste diversion strategy

Overall, the 2014 S W M M P considered 29 recommendations, which some have been completed, deferred or are still ongoing. These recommendations and their current status are included in **Appendix A**.

3.6.2 Solid Waste Resources Business Service Review

In 2017, the City undertook a business review of the Solid Waste Resources (S W R) program. One portion of the business service review was to develop a thorough understanding of the existing services provided by the City and then compare those services to other similar municipalities in order to determine if the City services exceed, are in-line or below the benchmark, as defined by the comparator municipalities. The results of that exercise are provided in **Section 4.1** of this report. In 2018, Council approved the 11 recommendations coming out of the review. Several of the recommendations have been implemented with others currently in process.

The business service review recommendations and status are shown in **Table 1**.

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Table 1: Business Service Review Recommendations and Status

Recommendation	Status
<p>1. Increase service level for curbside yard waste collection to bi-weekly collection during growing season.</p>	<p>Pending. Bi-weekly yard waste collection was introduced in 2020 in response to COVID-19 and the shutting down of the yard waste depot at the W R I C. The curbside program ended in June 2020 and the depot at the P D O reopened in July 2020.</p>
<p>2. Extend the lifecycle of the waste collection (packer) trucks from seven to ten years to achieve optimal economic life.</p>	<p>Complete. Waste collection packers lifecycle have been moved to 10 years. Maintenance impacts are being monitored.</p>
<p>3. Phase in the approved service level increase for waste collection service to multi-residential properties.</p>	<p>Complete. Waste collection service has been expanded to include front end collection service at Multi residential properties. In 2019, 15 properties (825 units) were on boarded. The program will continue to phase in properties as collection contracts end and properties show interest.</p>
<p>4. Consider alternative levels of service for the P D O hours of operation to optimize resource usage and gain efficiencies.</p>	<p>Complete. Service hours have been adjusted to reflect customer service seasonal volumes. The household hazardous waste depot hours were extended to include Mondays and Saturday hours were extended to 4PM, and services at Gate 2 and Gate 3 were moved to Gate 1 during off peak times.</p>

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Recommendation	Status
<p>5. Move forward with the Solid Waste Management Master Plan update in 2018/2019. Ensure the scope of activity includes: a) Identify, enhance and/or implement programs to improve diversion, optimize customer service and seek cost efficiencies. B) Develop a long-term growth forecasting model, in line with the existing Development Charges and Development Priority Planning processes, internal Finance processes and Asset Management policy, to proactively identify growth impacts across all waste service elements.</p>	<p>In Progress. The S W M M P Review is now underway. The scope of work includes increasing diversion, optimizing customer service and seeking cost efficiencies, as well as, developing long-term growth forecasting models.</p>
<p>6. Continue to optimize processes to enhance waste diversion performance and employee engagement. Formalize the Blitz team continuous improvement activity and extend the practice across all service elements.</p>	<p>Complete. Task forces for the M R F and P D O are ongoing and have replaced the initial blitz team and formalized the continuous improvement process.</p>
<p>7. Add process engineering and project management capacity to the S W R division to support the recommendations made in this report and lead continuous improvement initiatives, performance measurement development and overall tracking and reporting.</p>	<p>Complete. Technical Specialist / Project Manager position was approved by Council and is undertaking engineering and project management support.</p>

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Recommendation	Status
<p>8. Ensure financial analysis resources and/or skill sets are added to the S W R division, to provide greater accuracy and control in performance measurement and financial management and support improvements as identified in the Deloitte Variance Task Force review.</p>	<p>Complete. Financial Advisor position was approved by Council and the position successfully filled in April 2019.</p>
<p>a. Conduct a long-term cost recovery study to effectively assess the impact of future revenue changes and analyze potential adjustment scenarios.</p>	<p>In Progress. Cost Recovery Study is included in the scope of work for the S W M M P Review which is now underway.</p>
<p>9. Create a solid waste financial reserve to help offset the volatility of the commodity market and reduce annual variance impacts.</p>	<p>Complete. The Environment and Utility Contingency Reserve #198 was expanded to include mitigating the Environmental Services’ commodity pricing volatility risk.</p>
<p>10. Implement the Simcoe transition strategy to achieve cost savings and efficiency of operations by aligning M R F operations with Guelph tonnage and processing requirements.</p>	<p>Complete. Contract has concluded and processing operations in the M R F have been aligned for Guelph tonnages.</p>

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Recommendation	Status
<p>11. Continue to monitor and update Council on the Blue Box program transition timeline and implications of proposed changes.</p>	<p>In Progress. Staff are continuing to advocate Guelph’s needs to the M E C P and will continue to keep Council informed as new information becomes available. Staff have informed Association of Municipalities Ontario (A M O) of their preferred transition year to be 2023 for the new full Extended Producer Responsibility (E P R) Blue Box program.</p>

3.6.3 Smart Cities – Our Food Future Project

In 2019, the City and the County of Wellington received a \$10 million Smart Cities grant from Infrastructure Canada for the joint submission to become the country’s first circular economy for food.

This work requires identification and engagement with key stakeholders as well as data collection and processing to create an understanding of food flows, mapping their paths, and identifying opportunities for waste reduction, increasing access to nutritious food, creating new circular business, and increasing business revenues.

The key deliverables of this project involve:

- Landscape analysis
- Material flow analysis
- Key performance indicators
- Three business case studies

The first two deliverables noted above are being completed as part of the S W M M P. The last two deliverables will be completed should additional funding be secured.

4.0 Solid Waste System - Programs and Facilities

Information summarized in this section was derived from files received from City Solid Waste Resources staff, information obtained through site visits and/or meetings and from the City's website.

4.1 Overview of City Services

Table 2 provides a summary of all the City's services in terms of the waste stream, method of collecting materials, location of facilities and who owns and operates the facilities/services.

Table 2: City Waste Management Services

Waste Stream	Service	Processing/ Drop-Off Location	Owner	Operator
Recyclables	<ul style="list-style-type: none"> • Curbside collected by the City • Accepted at the P D O 	M R F	City	City
Organics	<ul style="list-style-type: none"> • Curbside collected by the City 	O W P F	City	Third Party Contractor
Garbage	<ul style="list-style-type: none"> • Curbside collected by the City • Accepted at the P D O and Transfer Station 	Transfer Station	City	City
Garbage	<ul style="list-style-type: none"> • Hauling to and disposal at private landfill 	Transfer Station to private landfill	Third party contractor	Third party contractor

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Waste Stream	Service	Processing/ Drop-Off Location	Owner	Operator
Leaf and Yard Waste (L Y W)	<ul style="list-style-type: none"> • Bagged L Y W collected by a private sector contractor • Loose leaf collection provided by City Operations division • Accepted at the P D O 	<p>Brush is sent to O W P F</p> <p>Bagged and loose leaves are sent to private sector facilities.</p>	<p>City (O W P F)</p> <p>Third party contractors (bagged and loose leaves)</p>	Third party contractors
C & D Waste	<ul style="list-style-type: none"> • Accepted at the P D O 	P D O	City	City
M H S W	<ul style="list-style-type: none"> • Accepted at the M H S W Depot 	M H S W Depot	City	City
Other (i.e. , scrap metal, Waste Electrical and Electronic Equipment)	<ul style="list-style-type: none"> • Accepted at the P D O 	P D O	City	City

4.2 Collection Programs

4.2.1 Single Family Households

The City offers weekly organic and bi-weekly garbage and single-stream recycling curbside collection to approximately 30,860 single family homes.

The collection frequency and services provided are summarized as follows:

- Bi-weekly grey cart garbage
- Bi-weekly blue cart single stream recycling
- Weekly green cart organics
- Leaf and yard waste curbside collection twice per year (spring and fall)
- Loose leaf collection once per year (conducted by City Operations)
- Year round bulky waste collection (by appointment with an additional fee)



4.2.1.1 Garbage

The City offers bi-weekly curbside collection of the grey carts, which are used for the garbage stream. For the automated collection transition, the City provided each single family household with a grey cart. There are three cart sizes available to residents: medium (120 L, equivalent to two standard garbage bags), large 240 L (240 L, equivalent to four bags) and extra-large (360 L, equivalent to six bags), with service designated at the large size level (i.e. the by-law provides a maximum service levels at 240 L); therefore additional fees are applied to cart sizes greater than 240 L. Households are provided with carts by the City, and additional carts are available for a fee.

For curbside collection, residents are to place their carts at the curb no later than 6:30 am on their collection day.

Residents are to follow set back and placement requirements, which include 30 cm from a curb, place along the outside edge of a gravel shoulder and place the carts as close as possible to the edge of a public lane. Each of the lid arrows are to point towards the street. At a minimum, residents are also

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required to allow a one-metre clearance on all sides of each cart. All carts are required to be removed from the curb by 7:00 pm on collection day and returned to the storage area. Grey carts are collected every other week and alternate weeks with the blue cart.

In 2019, the City collected 13,000 tonnes of residential curbside garbage.

4.2.1.2 Recycling

The City provides bi-weekly curbside collection of single stream recyclables in blue carts for single family residents. Similar to the grey carts, residents may choose from the same three sizes of carts (i.e., medium, large, extra-large), with service designated at the extra-large size level. Additional blue carts are available at a cost to the customer. Materials such as paper, glass, metals, and plastics are accepted in the blue cart program. Large cardboard boxes can be flattened and placed inside the blue cart and should fit entirely inside the cart to allow the lid to close. Residents are also given the option to bring large cardboard boxes and additional recycling to the W R I C at no extra cost. All contents must be loose and not bagged or bundled. The only exception is shredded paper, and it must be placed in a transparent plastic bag inside the blue cart. Set-out requirements are the same as the garbage stream, which is discussed in **Section 4.2.1.1**.

The automated collection trucks are equipped with a camera to view the material emptied into the appropriate carts. This camera can identify improperly sorted items, and Solid Waste Resources staff will follow up with homeowners or tenants to address any contamination or sorting concerns⁷.

In 2019, the City collected 10,100 tonnes of residential curbside recyclables.

4.2.1.3 Organics

The City offers weekly curbside collection of organic waste through the green cart program. All food waste, including meat, fish, dairy products, grain products, vegetables, food scraps, soiled paper products and pet waste, are accepted through the green cart program. Diapers and hygiene products are not accepted in the program.

One size of green cart is available to residents, which is 80 L, or equivalent to one standard garbage bag. Materials can be placed loose in the green cart

⁷ City of Guelph Waste Cart User Guide. 2016.

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or in an acceptable liner, which includes certified compostable bags, paper bags or paper liners such as newspaper, flour/sugar bags or a cereal box. Regular plastic bags are not accepted as liners. Set-out requirements are the same as the garbage stream, which is discussed in **Section 4.2.1.1**. The only difference is that the green cart has a latch, which needs to be opened by the resident once the carts are set out for collection.

In 2019, the City collected 10,300 tonnes of residential curbside organics.

4.2.1.4 Yard Waste

Previously, the City provided two-yard waste (Y W) collection periods per year (spring and fall) and one loose leaf collection day where residents can rake loose leaves to the curbside for collection. In 2020, the City began a bi-weekly curbside collection program for Y W in response to COVID-19. The curbside program ended in June 2020, and the public Y W drop-off depot reopened to the public in early July 2020.

Y W includes leaves, shrubs, hedge trimmings, woody plants, brush, branches and tree limbs with a diameter less than 5 cm (2 inches). Grass clippings were previously permitted in the program; however, since spring 2020, they are no longer accepted in the Y W collection program.

Y W must be placed in paper bags or in a clearly labelled container (less than 100 litres). Branches and tree limbs must be tied with string in bundles no larger than 1 metre (3 feet) long by 0.6 metres (2 feet) wide.

Metal and plastic ties are not acceptable for bundling branches and tree limbs, and each bundle, bag or container of yard waste cannot weigh more than 20 kilograms (44 pounds).

Bagged yard waste must be within 30 centimetres (1 foot) of the curb and 1 metre (3 feet) away from green, blue and/or grey carts. Y W in plastic bags are not be collected. Additionally, residents can top up their green carts with Y W⁸.

Bagged Y W waste collection is contracted out by Solid Waste Resources to a private contractor, and loose-leaf collection is managed by the City's Operations department.

⁸ City of Guelph Waste Cart User Guide. 2016.

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4.2.1.5 Large Items

For large items, residents can call the City for an appointment, and the items will be collected on their regular grey cart garbage collection day. The Large (Bulky) Item Collection program offers to pick up of large household items at the curb, year-round, for a fee.

Large items such as appliances (doors and lids removed for safety reasons), metal goods (e.g. lawnmower, wheelbarrow, BBQ), furniture, and mattresses can be collected at the curb through the Large Item Collection Program.

To schedule a pick-up, residents are required to first purchase a large item ticket at one of the allocated locations or by calling the W R I C. Residents can then proceed to schedule a pick-up date by calling the W R I C, and set the large items at the curb by 6:30 am during the specified grey cart garbage collection day.

4.2.2 Multi Residential Properties

Multi-residential properties within the City have access to garbage, recycling and organic collection services, provided they adhere to the requirements of the Waste Management By-law (2019)-20392, which includes sorting waste into three streams and using City carts or front-end bins. The City's Waste Management By-law (2019)-20392 requires that new multi-residential developments and redevelopments separate their organics, recyclables and garbage regardless of who collects the property's waste⁹.

The City services about 19,750 of the approximately 26,800 multi-residential units (74%) with garbage, recycling and organic collection services.

On December 2, 2017, City Council approved the multi-residential front-end waste collection program, including fleet and technology improvements, and the City starting preparing for this new program in 2018.

This service enhancement delivers the following benefits:

- Improve the City's capture of recyclables and organics by getting more multi-residential properties participating in three-stream collection

⁹ City of Guelph. By-law Number (2019)-20392.

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- Provide waste collection to multi-residential properties that were inaccessible by automated trucks
- Educate the multi-residential community about correct waste sorting
- Deliver on requests from multi-residential property managers or owners to provide them with City-run three-stream waste collection services
- Ensure the multi-residential community meets the current provincial regulatory requirement to recycle
- Helps this sector meet the new Provincial Food and Organic Waste Framework policy

In 2019, the City of Guelph extended collection services to additional multi-residential properties by using front end loading collection trucks equipped with a Curotto Can attachment, which allows the City to use a front-end vehicle for curbside collection when not used for multi-residential properties. In addition to providing this versatility, the attachment also reduces the cycle time for cart lifts at the curb, resulting in collection cost-efficiency. The Curotto Can can be installed for routes that service carts and removed for routes where front end bin lifting is required.



4.2.3 Downtown Core

The City provides waste collection services in the downtown core six days per week (Monday through Saturday). The City worked individually with downtown businesses and households to offer site-specific solutions to three-stream waste collection since it is recognized that residents and businesses in the downtown core have unique waste collection needs. The City offers downtown properties a number of flexible, three-stream waste collection options that best suit their needs.

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For locations that choose not to use carts, they were provided with the option to use public space containers for their sorted organics, recyclables and garbage.



The public space containers are located along the street and encourage three-stream sorting. The City currently has approximately 300 public space containers and 300 carts in the downtown collection area. These containers have a capacity of 227 L per stream and are collected by the automated arm of the collection truck¹⁰.

¹⁰ City of Guelph. 2016. Automated Collection System

4.3 Facilities

4.3.1 Waste Resource Innovation Centre (W R I C)

The W R I C is located at 110 Dunlop Drive in the southeast part of Guelph, and it is approximately 29.54 hectares in size. The W R I C facility operates under a combined Environmental Compliance Approval (E C A) No. A170128¹¹.

Within the W R I C, the services and functions accessible to the public are as follows:

- Weigh scale
- Public waste drop-off area (fees based on the type of material)
- Recycling and yard waste drop-off area (free of charge)
- M H S W depot
- Waste diversion education centre (advance booking is required)
- Administration building

The other functions and facilities at the W R I C (closed to the public) include:

- M R F
- O W P F
- Transfer Station (unless have tipping trailer and wear personal protective equipment)
- Stormwater management infrastructure

In 2019, the W R I C received a total of 104,206 tonnes of material at the various facilities. **Figure 2** provides a breakdown of the total incoming tonnages per facility at the W R I C.

¹¹ File Received: 2019 W R I C. Annual Report

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Figure 2: Tonnage of Waste Received at the W R I C Facilities (2019)

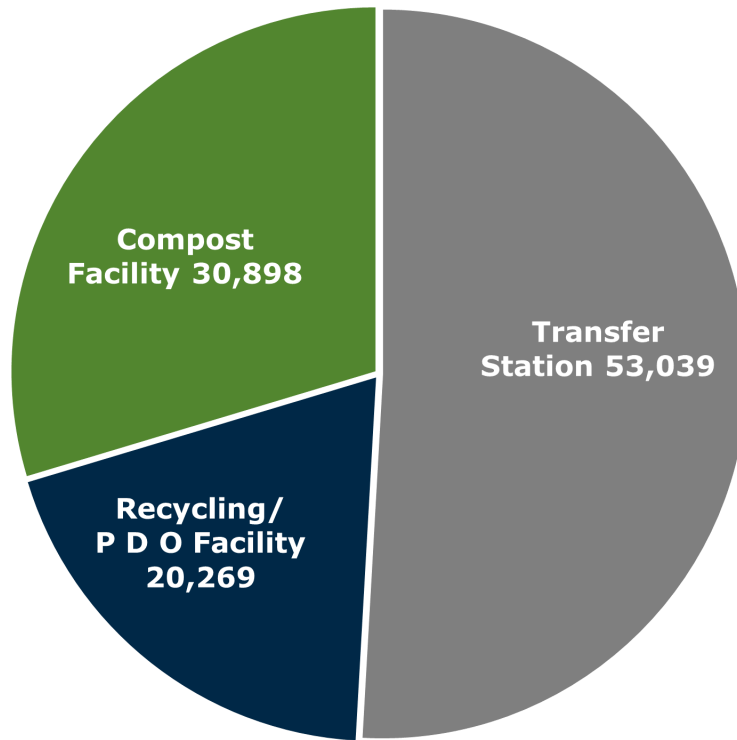


Figure 3 illustrates the locations of the different functions provided at the W R I C. For residential and commercial access, the W R I C is separated into three different access gates, which include:

- Gate 1: Public Waste Drop-Off Area
- Gate 2: Commercial Vehicle Site
- Gate 3: Recycling and Yard Waste Zone, including M H S W Depot.

The W R I C is normally opened to the public Monday to Friday from 7:00 and to 6:00 pm, Saturday 8:30 am to 4:00 pm and closed on Sundays and holidays. As of late May 2020, the public facilities at the W R I C are operating at reduced hours as a result of COVID-19.

Figure 3: Waste Resource Innovation Centre Site Layout



4.3.2 Material Recovery Facility (M R F)

The City owns and operates a single-stream M R F located at the W R I C. The M R F was constructed in the mid-1990s and began operation as a multi-stream M R F in 1996. In 2003, the M R F was converted to a single stream facility, which involved a major retrofit to the M R F. The M R F has the ability to process both single-stream recyclables, as well as source separated fibres and containers streams. The importance of strong sorting practices by the source (i.e. residential, multi residential) is reflected in the M R F process. Contaminated material is not recoverable and can lead to operational impacts, including additional labour, maintenance costs, material losses, and process delays. Most contamination is removed by manual labour at the beginning. However, it is sometimes not identified and can cause problems for equipment further down the process (i.e. sorting belt jams). As such, the importance of proper sorting requirements at the source (i.e., at households) is critical for M R F operations.

Recyclables are brought to the M R F and inspected for contamination (i.e., non-Blue Cart materials being mixed with acceptable Blue Cart materials). After the initial inspection, the suitable material is sent through a pre-sort station where oversized items that may interfere with the mechanical processes are removed. The materials are then sent to a ballistic separator that separates two and three-dimensional items. Two-dimensional items such as paper and cardboard are separated through mechanical agitation which allows the contents to stay at the top of the ballistic separator, and travel onto a conveyor for manual sorting. The three dimensional waste such as aluminum cans and plastic fall to the bottom of the ballistic separator through the mechanical agitation.

This material is then processed through magnetic separators to remove steel and iron, eddy currents to remove aluminum, glass breakers to remove glass, optical sorts to remove PET, and further plastics are sorted by hand. All the recovered materials from the three-dimensional waste stream are stored for shipping to end markets; the remainder may be passed through a secondary sorting station for a final inspection. All material passing this stage is compacted and sent to landfill¹².

¹² 2019 W R I C. Annual Report

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In 2019, the City processed approximately 10,100 tonnes of recyclables generated through the curbside collection program at the M R F.

4.3.3 Organic Waste Processing Facility (O W P F)

The O W P F is located at the City's W R I C. and operates 352 days a year. The City owns the O W P F and it is operated by a private contractor. In 2011, the City and Wellington Organix Inc. signed an operations and maintenance agreement for the operations of the O W P F. The 5-year agreement has an option for the City to extend it for up to two consecutive periods, each having a term of five years. The City extended the agreement for another five years.

The facility receives solid, non-hazardous organic waste from residential sources and processes them into compost. This waste includes food waste, soiled paper products, pet waste and some Y W¹³. Similar to other organic processing facilities within the province, the O W P F faces challenges with contamination (i.e., non-Green Cart materials being mixed with acceptable Green Cart materials). Since contaminants are non-compostable (i.e., glass, plastics), they do not break down into the organic material that the City can sell or use at the end of the process. As such, removing contaminants requires additional labour and time, which can result in additional costs for the operation. For example, glass can introduce significant challenges as small shards of glass are very difficult to remove and can degrade and devalue the quality of the batch, potentially making it unmarketable and/or unusable. The City asks residents to follow proper sorting requirements and use the appropriate compostable bags that meet the system requirements to minimize contaminants from entering the OWFP through the raw material that could affect the quality of the compost and processing time.

The O W P F includes a pre-processing stage where organic waste is stockpiled and passed through a shredder to reduce the size of the material. After the pre-processing stage, the O W P F uses a two-phase in-vessel "tunnel" composting system. During Phase 1, the organic waste mixture is loaded into a composting bunker. The bunker is sealed, and the air is continuously re-circulated through the compost mixture. After 10 to 14 days in Phase 1, the compost is transferred to the Phase 2 composting bunkers.

¹³ File Received: 2019 Annual Report

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The process is similar to Phase 1, with air and water added to provide optimal conditions for microbial activity. Phase 2 composting further reduces compost mass.

After Phase 2 is completed, pasteurized compost is transferred to the screening equipment. Metal contaminants and plastics (e.g., plastic bags) are removed prior to screening. The screened compost is then transferred to the maturation area, where it is placed in windrows. Windrows are turned regularly using a windrow turner. After the maturation phase, the compost is re-screened to ensure it is free of contaminants.

During the final stage, compost is tested by an accredited laboratory to ensure it meets the required specifications for compost quality. The compost product is taken away by vehicles approved for shipping. Marketable product is often sold as agricultural purposes for field application. In 2019, the O W P F received approximately 30,898 tonnes of material for processing¹⁴. The majority of material received at the O W P F consists of mixed organics with a small amount (less than 2%) being brush and amendment/mulch.

In addition to the production of marketable compost, the composting program at the O W P F also results in the reduction of G H G emissions. In the absence of the O W P F, the material being processed at the site would be directed to landfill. This creates an opportunity to generate G H G emission reductions from avoiding the release of methane that would be produced by the anaerobic decomposition of waste material in a landfill. Using the **Quantification Protocol for Aerobic Composting Projects** developed by Alberta Environment's Climate Change Policy Unit, the City is able to report the annual G H G emission reductions of the O W P F operations.

The quantification of the reductions creates an offset credit for the City. The City sells the credits in voluntary markets to other organizations looking to reduce their G H G impact and is a revenue stream.

¹⁴ File Received: 2019 Annual Report

4.3.4 Public Drop-off Area

In 2015, a P D O facility was added to the W R I C. which is accessed through Gate 1 at the W R I C. The City allows mixed waste, appliances, C & D waste, wood waste, L Y W (commercial) to be dropped off at the P D O. For this waste, the City charges a fee per tonne as vehicles are weighed through the scale on Gate 1. Fees vary depending on the type of waste being disposed. **Table 3** shown below lists the accepted items at the P D O and applicable fees as of January 2020.

Table 3: P D O Materials Accepted and Fees

Item	2020 Fees (Minimum fee \$10)
Mixed waste (including organics bags and garbage bags)	\$86 per metric tonne
Appliances requiring refrigerant / CFC pumpdown (e.g. air conditioner, fridge, freezer, de-humidifier, water cooler)	\$20 per item (HST included)
Clean fill including stones, sod and topsoil	\$86 per metric tonne
Concrete, brick, rubble, toilets	\$71 per metric tonne
Drywall	\$83 per metric tonne
Shingles (Asphalt)	\$86 metric tonne
Wood waste (clean wood)	\$81 metric tonne
Yard waste and brush (commercial)	\$86 per metric tonne
Ministry of Transportation of Ontario Registered Gross Weight measurement	\$20 per measurement (HST included)

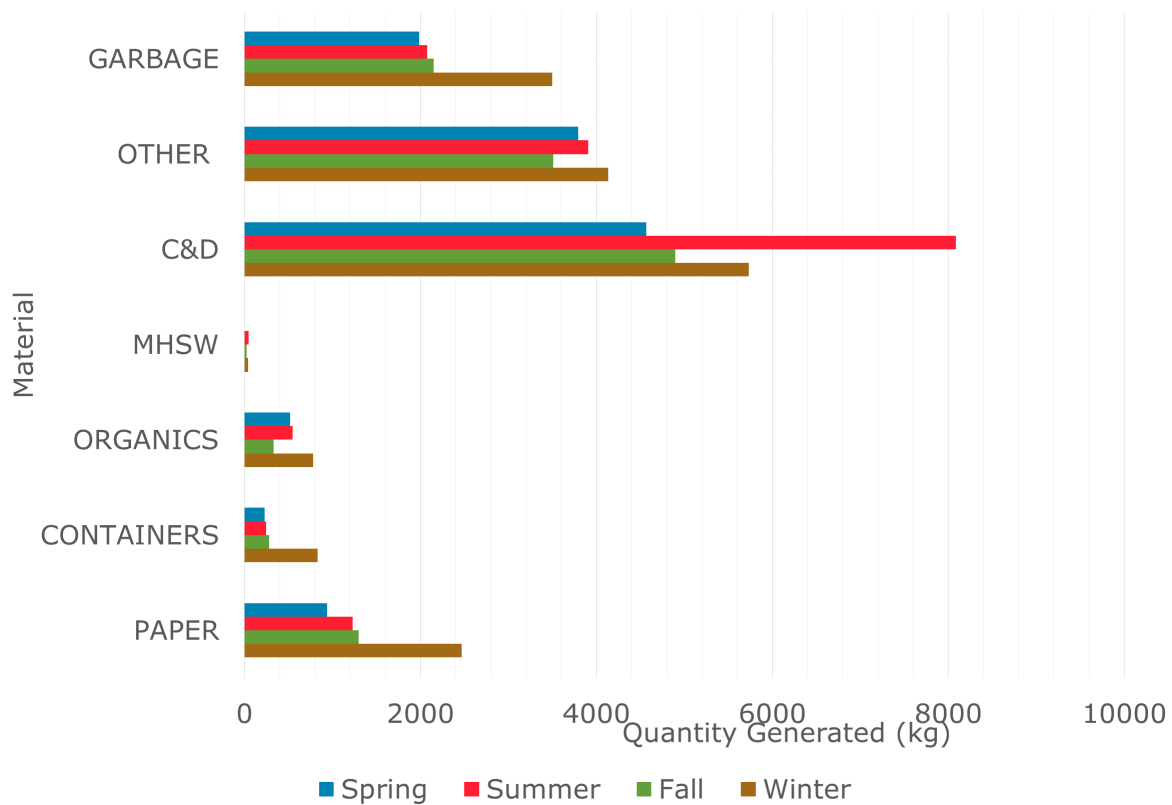
In 2019, the City received approximately 9,500 tonnes of material at the P D O with the two largest material types, by weight, being L Y W and C & D waste. Due to COVID-19, the P D O closed to the public in mid-March 2020 and reopened with reduced operating hours in late May 2020.

In 2016, the City completed a waste audit program within the waste bins at the P D O, not including recycling bins. The program involved a daily audit during one week of each season (i.e. spring, summer, fall and winter).

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The daily audit completed a review of the amount of paper, containers, organics, M H S W, C & D, material from other programs (i.e. bicycle reuse program, textiles) and garbage that is received at the P D O that went into the garbage bins. **Figure 4** demonstrates the seasonal trends for waste material received based on data from the 2016 P D O audit performed by the City.

Figure 4: P D O Seasonal Waste Quantities



4.3.5 Recycling and Yard Waste Zone

Through Gate 3 of the W R I C, the City also offers a recycling and yard waste zone for residents to promote diversion. There is no charge to residents for using this service. **Table 4** shown below lists the items that are collected in this location.

Table 4: Recycling and Yard Waste Zone Collection

Material
Blue Cart Recyclables
Cardboard
Household Hazardous Waste
Prescription eyeglasses
Reusable boots, shoes and insoles
Textiles
Scrap metal
Yard waste (residential)

4.3.6 Municipal Household and Special Waste Depot

The M H S W Depot accepts residential household hazardous waste generated from City residents ¹⁵. Materials accepted include items such as paint, batteries, motor oil, pool chemicals, and propane tanks. Residents have a maximum daily drop-off limit of:

- 10 long fluorescent light bulbs
- 80 litres or kilograms based on container size (maximum container size of 20 litres)
- 4 propane tanks (maximum container size of 20 pounds)

Residents are also required to fill out a hazardous waste ticket before dropping off any materials. In 2019, 750 residents visited and dropped off

¹⁵ City of Guelph. Household Hazardous Waste. 2019. <https://guelph.ca/living/garbage-and-recycling/waste-reduction/household-hazardous-waste/>

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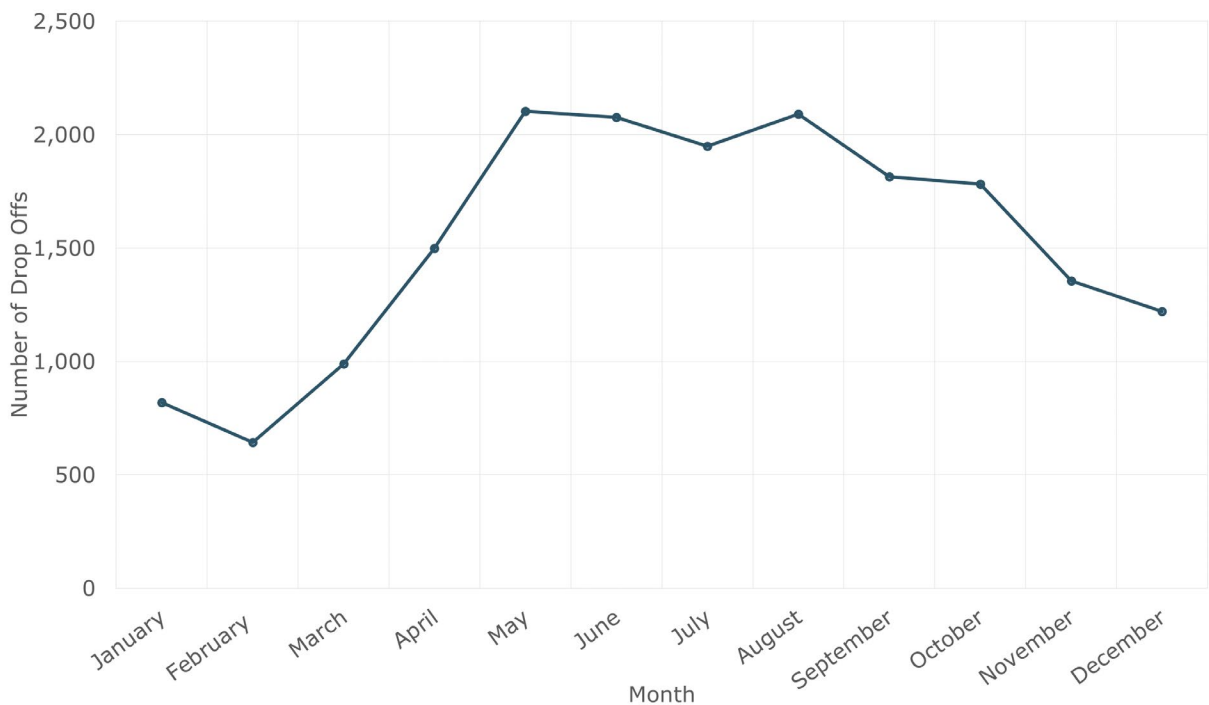
waste at the M H S W Depot. In total, approximately 206,295 L and 12,166 kg of municipal household special wastes were received in 2019.

Additionally, 1,058 20-lb propane tanks, 5,000 1-lb propane cylinders and 7,158 florescent tubes were received in 2019. All of the materials accepted at the M H S W are shipped for re-use, recycling or for disposal¹⁶.

The M H S W Depot closed in mid-March 2020 due to the global pandemic and reopened in late May 2020 under reduced operating hours.

Figure 5 provides a monthly summary of the number of drop-offs that occurred during 2019 at the M H S W Depot.

Figure 5: M H S W Depot Monthly Drop-Off (2019)



¹⁶ File Received: 2019 W R I C. Annual Report

4.3.7 Transfer Station and Disposal

The transfer station is designed to manage up to 299 tonnes/day, calculated on a weekly average (six days), including municipal and I C & I residual wastes. The transfer station was constructed on the W R I C site and began operations on October 14, 2003.

Within the transfer station, waste is dumped from incoming vehicles onto an indoor tipping floor from residential and I C & I collection vehicles. The waste is then transferred into larger trucks, and shipped from Guelph to an approved private sector disposal facility. The City collects approximately 13,000 tonnes of residual waste from the curbside collection program. Additionally, residual waste from non-residential customers, the P D O and residue from the M R F and O W P F are handled at the City's transfer station.

The City entered into an agreement with Waste Management in September 2013 to transport waste from the transfer station and dispose of residual waste at their Twin Creeks landfill. Approximately 95% of the outgoing material from the transfer station was sent to this disposal facility in 2019. The contract term is for 10 years and includes options to extend the term for up to two successive 5-year periods. The remaining 2.2% was sent to Try Recycling in London, Ontario and Waste Management Inc. received 2.3% of the material. In 2019, the Transfer Station received a total of 53,039 tonnes¹⁷.

4.3.8 Closed Landfill (Eastview)

The Eastview Road Landfill Site (Landfill) comprises a total area of approximately 81 hectares (ha), of which 45 ha have been landfilled. The Landfill is bounded by Eastview Road to the south, Watson Road to the east, and Speedvale Avenue to the north. The Landfill is bounded by residential, agricultural, and industrial lands. Local major water bodies include Guelph Lake, located approximately 1.5 kilometres (km) to the north, the Eramosa River, located approximately 6.5 km to the south, and the Speed River, located approximately 3.0 km to the west. A mixture of deciduous and coniferous trees surrounds the Site¹⁸.

¹⁷ File Received: 2019 W R I C. Annual Report

¹⁸ File Received: 2019 W R I C. Annual Report

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The Landfill closed in October 2003 with a total of approximately 3.5 million cubic metres (4,329,000 tonnes) of in-place waste.

The City has owned and operated the Landfill since its opening in 1961, using full-time City staff at the Landfill during filling operations to conduct the daily activities, including site preparation, waste placement, and site maintenance.

The City continues to maintain the environmental systems in the post-closure phase. The Eastview Road L F G Capture and Combustion G H G Emissions Reductions Project is located on the northeastern boundary of the City.

Each year the City prepares an emissions reductions summary for the landfill gas (L F G) capture and combustion project activity at the closed Eastview Landfill Site. G H G emissions reductions are achieved through the collection of L F G that is generated as a result of the anaerobic degradation of municipal solid waste that had been placed at the Site. This creates an opportunity to quantify G H G emission reductions from avoiding the release of methane. The quantification of the reductions creates an offset credit for the City, which sells the credits in voluntary markets to other organizations looking to reduce their G H G impact and is a revenue stream.

The Landfill is now home to the Eastview Community Park with City Council approving a final master plan in 2008 and in 2009, approving a phased funding approach to the park which included an active recreation park and a Pollinator Park. The recreation portion includes football and soccer fields, beach volleyball courts, washroom and change rooms, trails, parking and a playground. Future plans include mini soccer fields, bicycle skills facility and a splash pad¹⁹.

4.4 Promotion, Education and Outreach

4.4.1 Promotion and Education (P & E)

Solid Waste Resources provides regular communications to residents that promote the 3Rs (Reduce, Reuse and Recycle) and educate on how to

¹⁹ City of Guelph. Eastview Community Park Master Plan. 2019. <https://guelph.ca/plans-and-strategies/parks-trails-planning/eastview-community-and-pollinators-park/>

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manage the different waste streams properly. Some of the examples of how public outreach is conducted includes:

- The annual online curbside waste collection calendar (hard copies available as well) which includes the collection schedule, waste program information and waste tips. Online users can enter in Users
- Brochures which provide information about existing diversion programs
- Display boards used at special events and exhibits
- “Oops stickers” and door knockers used by waste collection staff and by-law officers at the curb to indicate and help residents correct improper sorting and waste set out
- The City’s garbage and recycling web pages provide various resources including the Waste Wizard (discussed further below), information on waste reduction programs (e.g., bike reuse program, food waste reduction), a video on how to set out and sort waste for collection properly, responses to frequently asked questions, information on the W R I C facilities and reports and resources for residents (e.g., the S W M M P, waste management by-law)

4.4.1.1 Waste Wizard

The Waste Wizard is an online search engine on the City’s website (<https://guelph.ca/living/garbage-and-recycling/>) whereby residents can enter in a material and find out the options for reuse, recycling and/or disposal. For example, if ‘furniture’ is entered into the Waste Wizard, the following options come up: Large Item Collection Program, drop-off at the W R I C, information on Goods Exchange weekends and a map and links to locations that will accept gently used furniture for reuse purposes. Additionally, the City has a collection calendar available within the Waste Wizard and also has a waste carts user guide that is available to residents.

The City’s website also provides an online collection calendar where one can enter in their address (paper copies are available as well), a video on how to properly sort waste for collection and several responses to frequently asked questions.

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4.4.1.2 Mobile App

The City provides the free Guelph Waste mobile device App (ReCollect) that provides residents with weekly reminders about their waste collection days, real time updates on any delays and the Waste Wizard sorting lookup tool.

4.4.1.3 Give Waste a New Life

The City has taken several initiatives to divert waste from landfill disposal, including the construction of the O W P F and the introduction of the fully automated waste collection system to increase the efficiency of the collection process. To communicate these two service changes, the City implemented a public awareness campaign with Pier 8 Group beginning in 2011²⁰.



The brand solution revolved around the slogan Give Waste a New Life, with the logo of a butterfly showing the recyclable and organic waste streams that are reprocessed. For these campaigns, P & E tools included:

- Maps, brochures, user guides and collection calendars
- Posters and displays
- Local newspaper ads
- Radio commercials and transit ads
- Script and storyboard for an educational video

These campaigns, to educate residents on new waste sorting rules, resulted in an increase in sorting compliance and waste diversion, while the awareness campaign promoting automated collection resulted in 99% of households using their carts on their regular scheduled collection date. These campaigns have received a number of communication awards, including:

²⁰ Pier 8 Group.2020. <https://www.pier8group.com/project/give-waste-a-new-life/>

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- Gold Excellence Award for from the Solid Waste Association of North America (S W A N A)
- Gold Award from the Recycling Council of Ontario
- Silver Promotion and Education Award from the Municipal Waste Association
- Pinnacle Award from Canadian Public Relations Society Hamilton

4.4.2 Special Events

The City requires event organizers to apply for a special events permit and are subject to the permit requirements if the event will be on City-owned property. As part of the application, event organizers are required to complete a Waste Management Plan six (6) weeks before the event takes place. This is in accordance with the City's Waste Management By-law Number (2019) -20392 – Section 20. Additionally, the City has a Special Event Diversion Handbook available online, as well as a step-by-step guideline posted on their website.

The Waste Management Plan for Special Events requires the following information:

- Event organizer information
- Event information
 - Number of attendees expected
 - Number of food vendors
 - Number of portable washrooms
- Name of waste hauler
- Where material will be sent
- Estimated number of bins or carts required
- Waste sorting station information
- Outline of waste diversion at event

City of Guelph carts will be provided, free of charge, on request and subject to certain conditions. If carts get damaged, the City charges \$52 per cart. Tipping fees for garbage are priced at \$86 per tonne or \$15 per cart. If recycling or organics carts are rejected due to high rates of contamination (greater than 5% by visual inspection), they will be sent to landfill, and the

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Event Organizers will be responsible for paying the garbage tip fee of \$15 per cart.

4.4.3 Customer Service

The City's Solid Waste Resources division responds to calls from residents through a dedicated telephone number, handling approximately 20,000 customers per year (approximately 76 calls per collection day)²¹. Typical reasons why residents call include:

- Waste was not collected at the curb during scheduled collection day
- Seeking information regarding the W R I C
- Inquiring and coordinating bulky waste collection
- Scheduling a tour at the W R I C
- Purchasing additional carts
- Asking for information on how to sort waste properly

4.4.4 Waste Diversion Education Centre

The Waste Diversion Education Centre (Education Centre) is located in the O W P F located at the W R I C (Gate 3). The Education Centre provides visitors with an understanding of how Guelph's organics, recyclables and garbage are collected and processed and how to minimize the amount of garbage created and sent for landfilling.

The Education Centre also offers a guided tour within the W R I C. Tours are available April 1 to October 31 for Guelph schools only, and provide an opportunity to learn from the City's Solid Waste Resources staff. The guided tours include the following topics:

- Reducing environmental footprint
- Proper sorting methods
- Insight on how the composting facility operates
- The benefits of automated waste collection

²¹Waste Free Ontario Act – Update and Key Considerations, December 2019. https://guelph.ca/wp-content/uploads/cow_agenda_120219.pdf

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- The flow of recyclable materials at different stages of the recycling process
- Insight on the City's waste diversion programs

4.4.5 Other Diversion Efforts

The City provides a variety of city-wide incentives to divert waste from landfill disposal. These incentives are described in detail below.

4.4.5.1 Grasscycling and Lawn Care

Since the spring of 2020, the City no longer accepts grass clippings in green carts or during curbside yard waste collection. Grass clippings can be dropped off at the W R I C free of charge, however, the City encourages residents to leave grass clippings on the lawn as they reduce fertilizing needs by up to 25 percent and helps the lawn hold water which minimizes water requirements. This initiative will help reduce Y W collection and processing costs and minimize the amount of Y W volume.

4.4.5.2 Bike Reuse

The ReCycle Bike Reuse Program encourages Guelph residents to drop off unwanted, usable bikes at the W R I C. The program aims to divert bikes of all different shapes, sizes, colours and conditions from landfilling.

Residents are given the opportunity to pick-up a maximum of two bicycles per year and are required to sign a waiver. The inventory of bicycles may vary, and bicycles are available to residents year-round, free of charge.

4.4.5.3 Goods Exchange Weekend

The City encourages residents to exchange reusable household items, such as furniture and appliances that are no longer needed with other residents that may find a good use for them. The City promotes two Goods Exchanges Weekends a year – one in the spring and one in the fall. It is noted that the City cancelled the spring 2020 event due to COVID-19.

Residents can participate in the community re-use event through the following steps:

- Clearly labelling items to give away as "FREE" and place them at the curb after 5 p.m. on Friday

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- Prevent misunderstandings by ensuring items such as children's bikes, toys, and gardening tools are not accidentally left near the curb
- Over the weekend, residents can tour the neighbourhood and pick up items of interest from the curb
- At the end of the weekend, remove unwanted items that were not picked up

All leftover items must be removed from the curb by 7:00 p.m. on Monday following the Goods Exchange Weekend. Items left at the curb are subject to enforcement action under the Waste Collection By-law, which may include a fine or clean-up fee.

This initiative is a great way to encourage diversion and reuse of items that are not at the end of their lifecycle.

4.4.5.4 Curbside Battery Collection

The City offered a Curbside Battery Recycling program from 2015 to 2019 in partnership with Raw Materials Inc. and, in extension, Stewardship Ontario. The City's Curbside Battery Collection program aimed to provide an alternative, more convenient means for battery disposal to capture batteries disposed of in incorrect waste streams since they are considered hazardous waste. Other options for residents to dispose of their batteries safely is at the W R I C, City Hall and Guelph fire stations.

The program ran annually over a two week period in the fall. Residents were instructed to place their used or unwanted batteries in a sealable clear plastic bag, which were then to be placed on the ground beside the blue carts on collection days during the two-week period. City staff collected the batteries set out on the curb, which were then dropped off at the M H S W depot, removed from the plastic bags and placed in drums. Raw Materials Company Inc. collected the batteries and transported them to their recycling centre in Port Colborne where batteries were sorted and processed for recycling. Raw Materials Company Inc. can recover up to 84% of battery materials.

The City's curbside battery recycling program was discontinued after 2019 since the waste recovery program for single-use batteries operated by Stewardship Ontario ended on June 30, 2020.

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As of July 1, 2020, both single use and rechargeable batteries are to be managed under Ontario's individual producer responsibility framework. R P R A is the regulator mandated by the Ontario government to oversee the new framework.

4.4.5.5 Paint + Reuse Program

The City has a seasonal Paint + Reuse Program, which allows residents to pick up used paint and other products free of charge at the M H S W Depot at the W R I C. Residents are encouraged to bring items such as paints/stains, new motor oil, cleaning products and grout that they no longer need to the M H S W depot and/or pick up items that they need. The program is intended to keep household hazardous waste out of the regular waste stream. The seasonal Paint + Reuse Program typically runs from April to October (note that opening in 2020 was delayed as a result of the pandemic).

The total amount of M H S W received at the Paint + Re-use Program in 2019 is summarized in **Table 5** below.

Table 5: Paint + Re-use Program Quantities (2019)

Material	Total
Paints and Coatings Non-aerosol; #145 (L)	3,876
Paints and Coatings Aerosol; #331 (kg)	563
Solvents #213 (L)	204
Antifreeze (L)	62
Propane Cylinders (kg)	37
Cleaners/Detergents #148 (L)	239
Car Products #213 (L)	244
Non-Paint Aerosols #331 (kg)	66
Motor Oil (L)	103
Plaster/Cement/Grout (kg)	33

5.0 Waste Characterization, Quantities and Diversion

5.1 Characterization of Waste

The City completed waste audits for single family, multi-residential properties, the downtown core and public spaces in 2016. Audits were completed seasonally in the spring, summer, fall and winter on the garbage, recyclables and organics streams. The 2016 waste audit data was used to build an as-generated waste stream characterization breakdown (i.e., Total Waste Characterization) for all the sectors assessed, including single family, multi-residential, public spaces throughout the City and the downtown core. Each of these sectors was audited in the spring, summer, fall and winter.

During the Waste Audit Program completed by the City, the waste characterization assessment was separated into eight different material categories, which include:

- Paper and Cardboard
- Containers (Food and Beverage)
- Organics
- Yard Waste
- C & D
- Other Programs (e.g., bicycle reuse, textiles)
- Garbage

To compile an overall waste characterization per sector and per waste stream, it is noted that all of the seasonal data were averaged.

5.1.1 Single Family Households

This section presents waste stream characterization for the single family sector within the City for garbage, recyclables and organics. **Figure 6** displays the total waste generated characterization for single family households, which demonstrates the overall total composition of the recycling, garbage and organics stream combined, indicating an as generated composition projection for single family households.

Figure 6: Single Family Total Waste Characterization

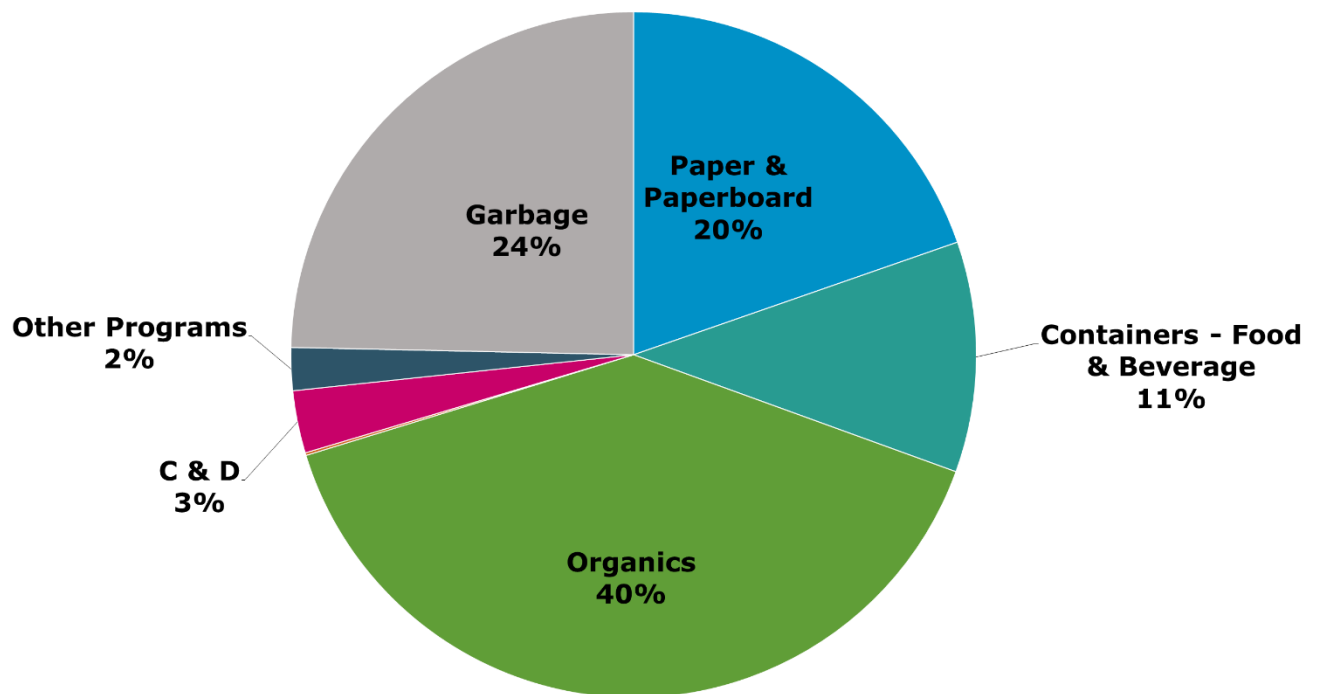


Figure 7 displays the characterization of items found in the 2016 audit of single family garbage waste streams (grey carts). Residuals comprise of the majority of the waste stream at about 62%. The remainder is comprised of 11% blue cart recyclables, 15% organics and 12% other material, including C & D waste and M H S W In summary, approximately 38% of the waste found in the grey cart could have been diverted through curbside collection programs.

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Figure 7: Single Family Residential Grey Cart Characterization

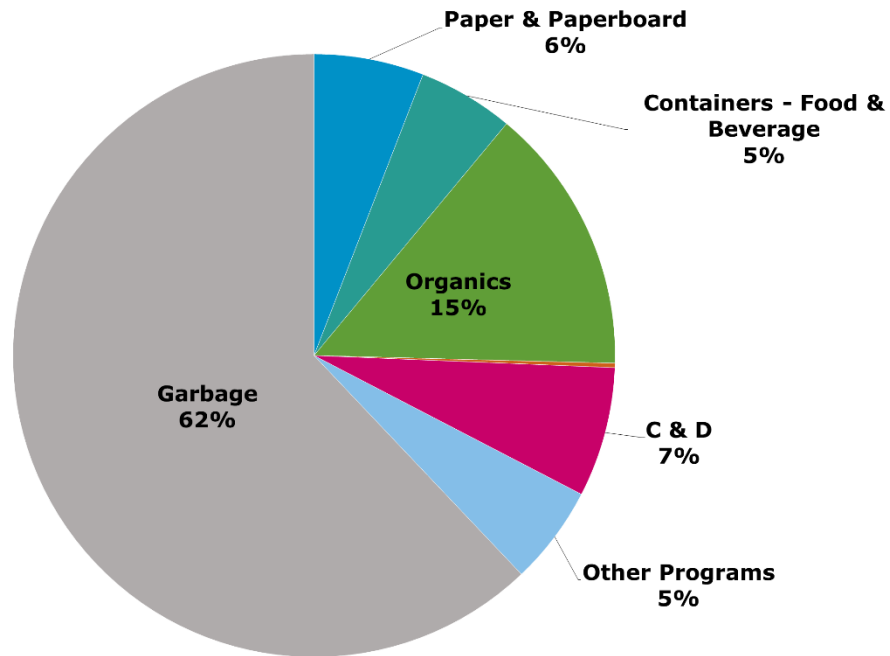
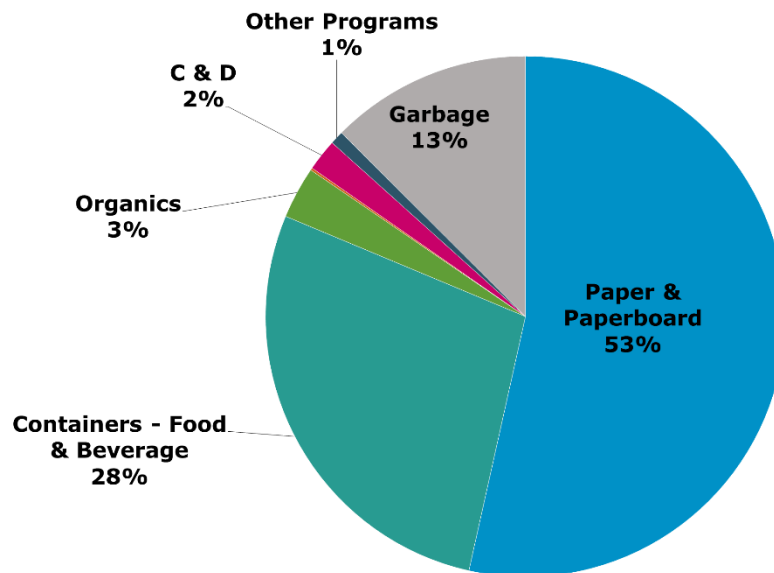


Figure 8 displays the characterization of materials found in the blue cart. About 81% of the contents found in the blue cart were in fact recyclable materials. The common contaminants found in the blue cart consisted of C & D, organics and garbage, with an estimated contamination rate is 19%.

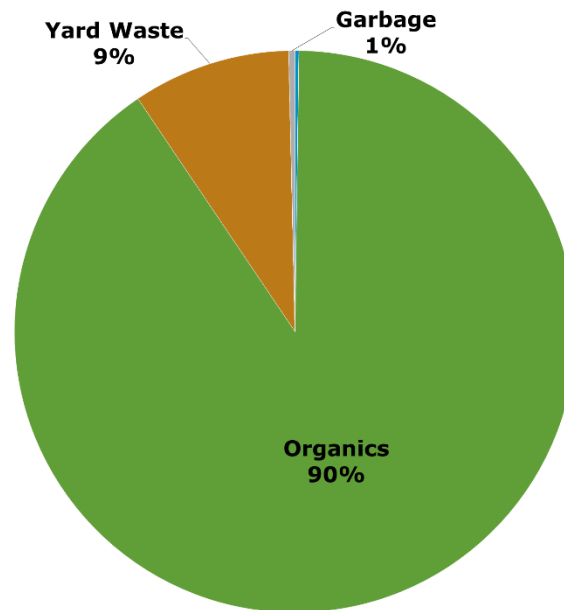
Figure 8: Single Family Blue Cart Characterization



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Figure 9 displays the green cart organics waste characterization. This stream has a very low contamination rate of approximately 0.6% indicating that residents are well educated on how to properly participate in the green cart program.

Figure 9: Single Family Green Cart Characterization



5.1.2 Multi-Residential

Figure 10 displays the characterization for the total waste generated by multi-residential households (based on 2016 audit data), which demonstrates the overall total composition of the recycling, garbage and organics stream combined, indicating an as generated composition projection for multi-residential units.

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Figure 10: Multi-Residential Total Waste Characterization

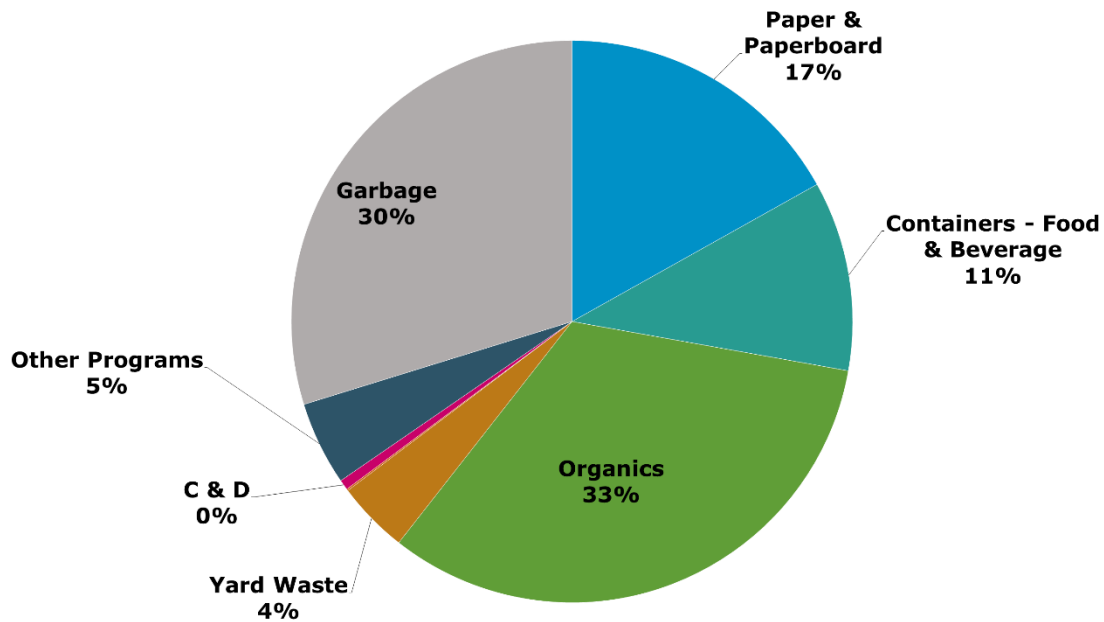


Figure 11 displays the multi-residential garbage stream data. The grey cart is comprised mostly of residual waste (54 %). However, almost 35% of the materials found in the grey cart could have been diverted, including materials that could have been diverted through the green cart (14% mixed organics and 6% L Y W) and the blue cart (15%) collection programs.

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Figure 11: Multi-Residential Grey Cart Characterization

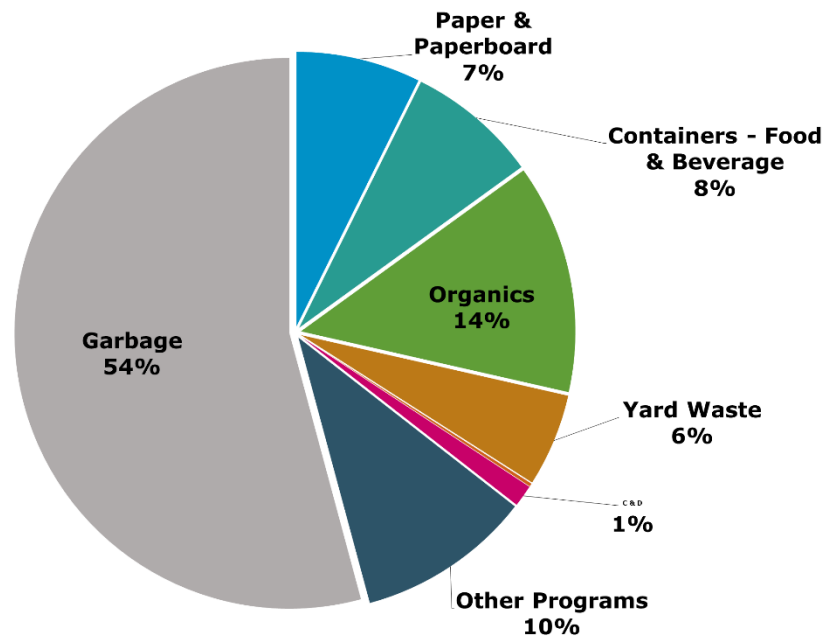


Figure 12 displays the multi-residential recyclables audit data. The waste audit data reveals that about 74% of the materials placed in the recycling stream are acceptable blue cart recyclables leaving an estimated contamination rate of approximately 26%.

Figure 12: Multi-Residential Blue Cart Characterization

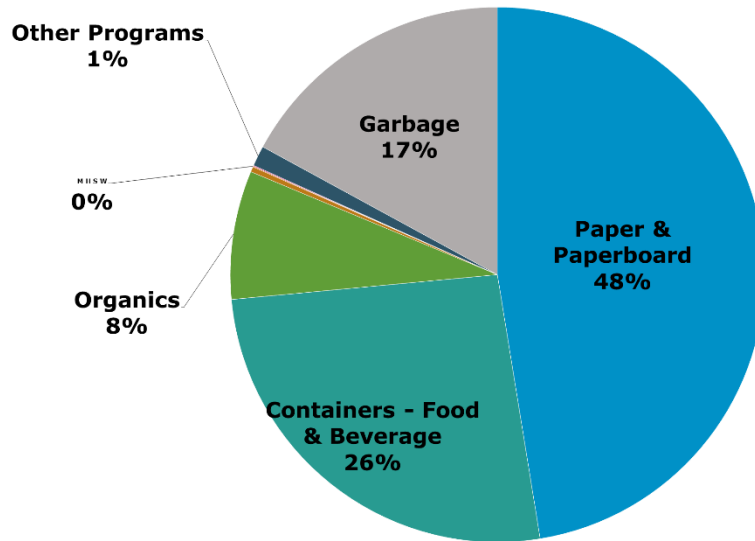
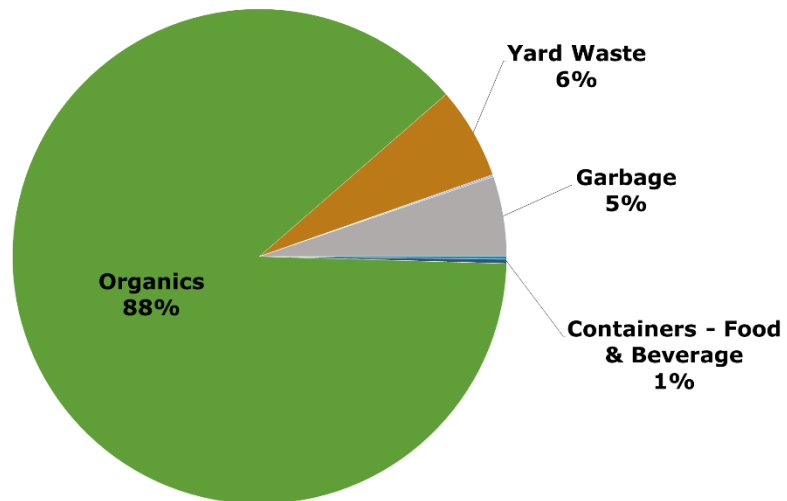


Figure 13 displays the multi-residential organics waste composition data. The majority of material placed in the green cart is acceptable materials (94%). This stream has approximately a 6% contamination rate.

Figure 13: Multi-Residential Green Cart Characterization



5.1.3 Public Spaces

Figure 14 displays the characterization for the total waste generated from public space waste containers throughout the downtown (based on 2016 audit data), which demonstrates the overall total composition of the recycling, garbage and organics stream combined, indicating an as generated composition projection for public spaces. All public space containers audited were from the downtown core, which allows residents and businesses to place their waste, recyclables and organics. Figure 15 through Figure 17 presents the waste characterization for the public space sector for the garbage, recyclables and organic waste streams.

Figure 14: Public Spaces Total Waste Characterization

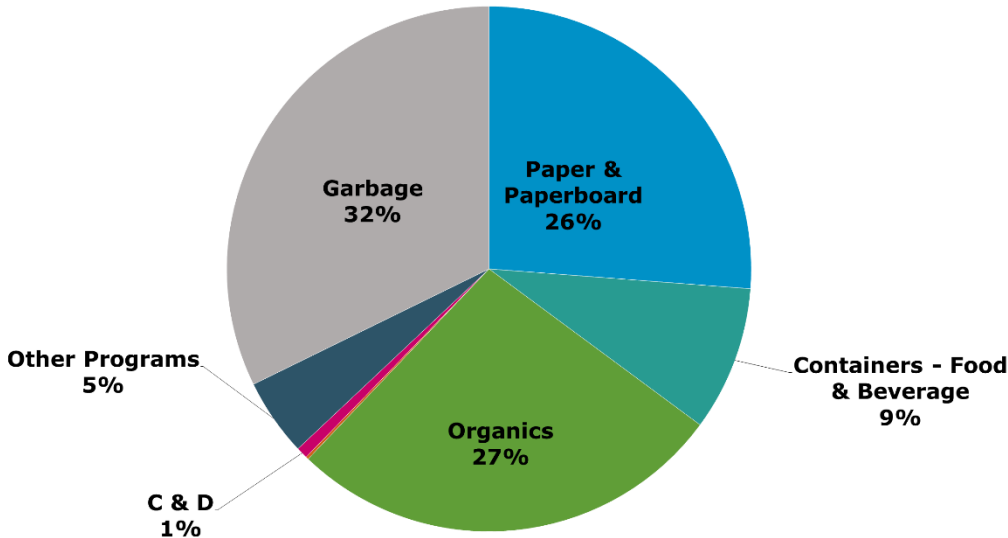


Figure 15 displays the public space garbage stream data. The grey bin is comprised mostly of residual waste (53%). It is noted that 38% of the materials found in the grey bin could have been diverted, including materials that could have been diverted through the green bin (13% mixed organics and 4% L Y W) and the blue bin (21%).

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Figure 15: Public Spaces Garbage Bin Characterization

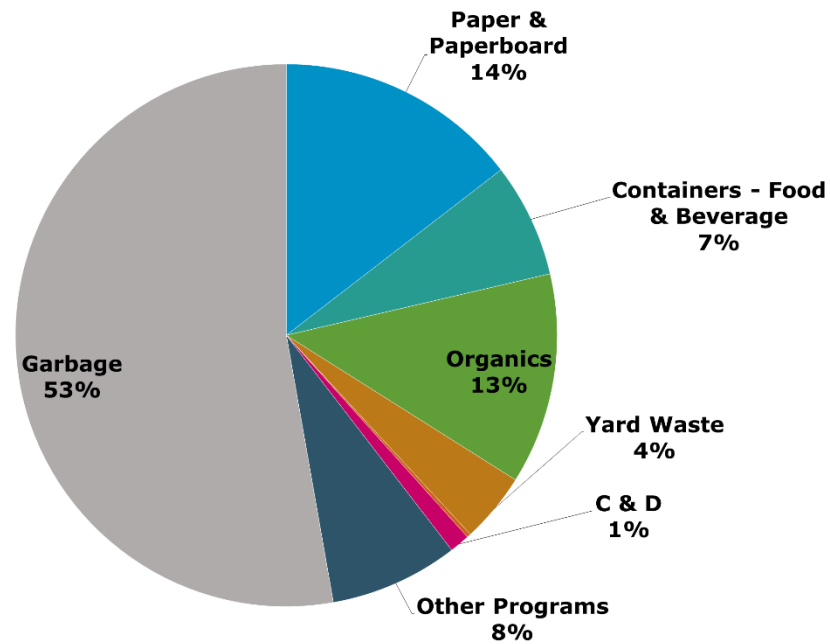


Figure 16 displays the public space recyclables audit data. The waste audit data reveals that about 83% of the materials placed in the recycling stream are acceptable blue bin recyclables leaving an estimated contamination rate of approximately 17%.

Figure 16: Public Spaces Recycling Bin Characterization

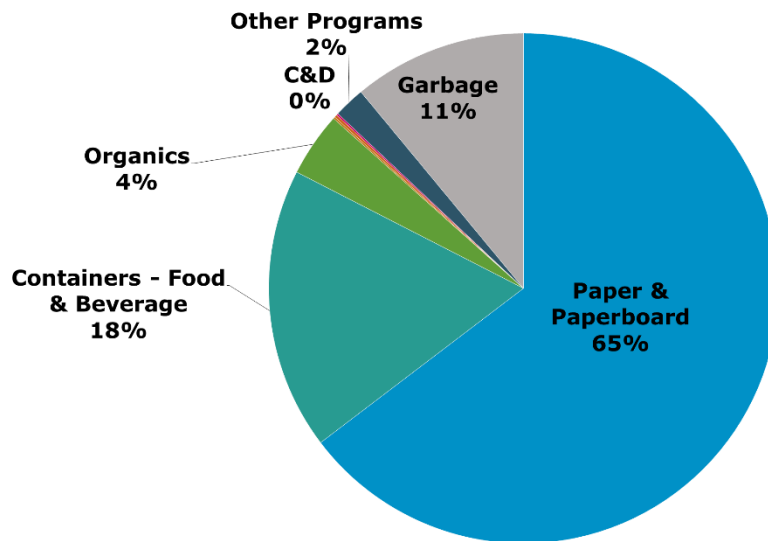
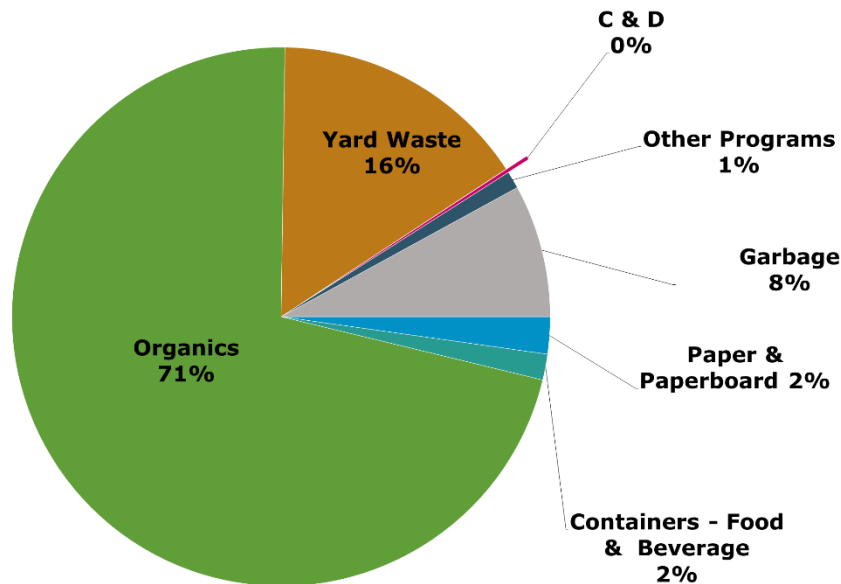


Figure 17 displays the public space organics waste composition data. The majority of materials placed in the green bin is acceptable materials (71% mixed organics and 16% L Y W), equating to 87%. This stream has approximately a 13% contamination rate, which is comprised of 8% garbage, 4% recyclables and 1% of other materials.

Figure 17: Public Spaces Organics Bin Characterization



5.1.4 Downtown Core

Figure 18 displays the characterization for the total waste generated by the downtown core (based on 2016 audit data), which demonstrates the overall total composition of the recycling, garbage and organics stream combined, indicating an as generated composition projection for the downtown core. The waste audited was from carts assigned to individual business addresses in the downtown core.

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Figure 18: Downtown Core Total Waste Characterization

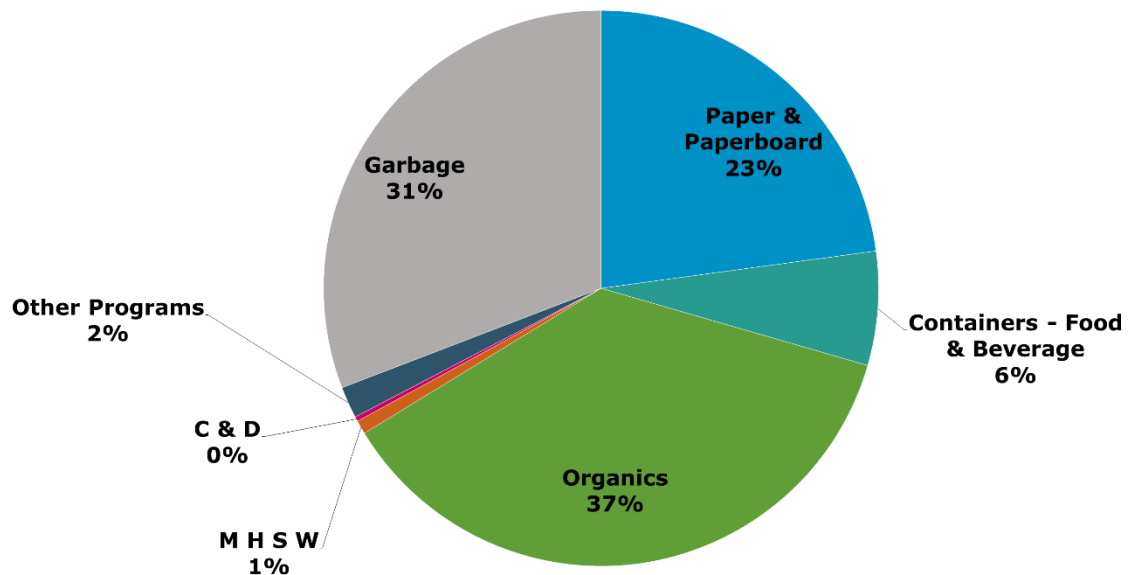


Figure 19 through **Figure 21** presents the waste characterization for the downtown core for the garbage, recyclables and organic waste streams.

Figure 19 displays the downtown garbage stream data. The garbage stream is comprised mostly of residual waste (66%). It is noted that 27% of the materials found in the grey cart could have been diverted, including materials that could have been diverted through the green cart (20% mixed organics and 1% L Y W) and the blue cart (6%) collection programs.

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Figure 19: Downtown Core Garbage Bin Characterization

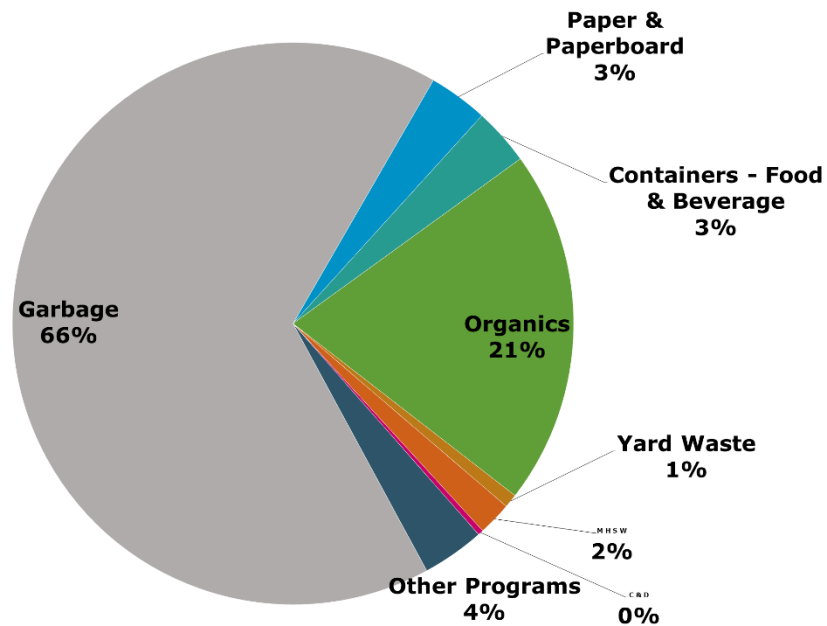


Figure 20 displays the downtown core recyclables audit data. The waste audit data reveals that about 86% of the materials placed in the recycling stream are acceptable blue cart recyclables leaving an estimated contamination rate of approximately 14%.

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Figure 20: Downtown Core Recycling Bin Characterization

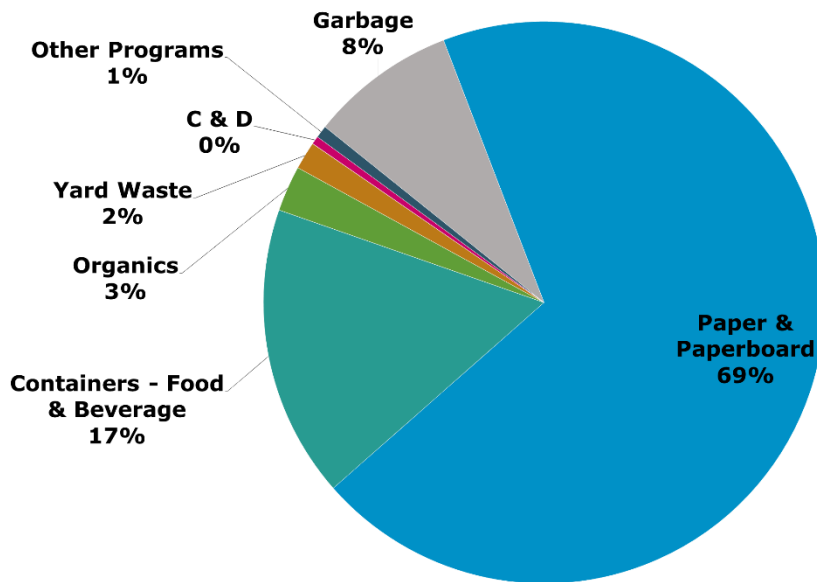
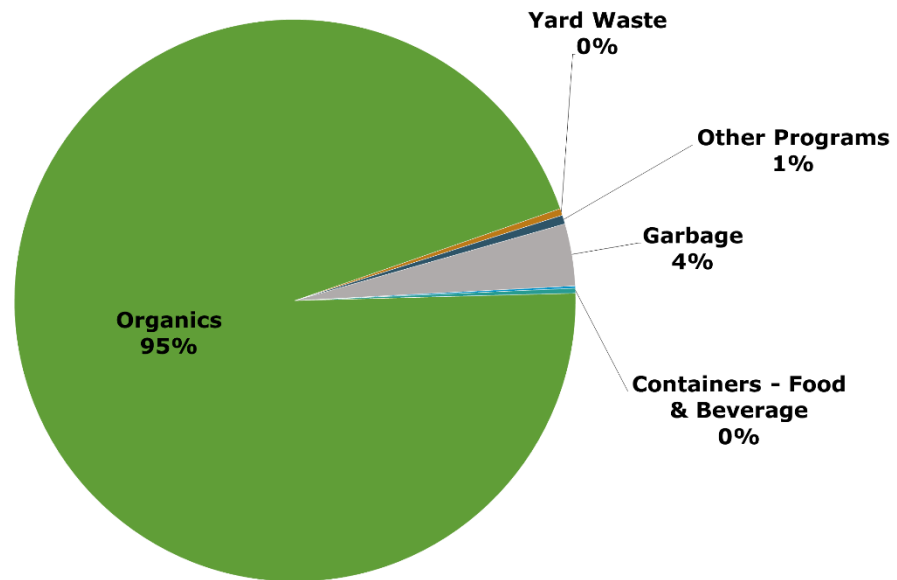


Figure 21 displays the downtown core organics waste composition data. The majority of materials placed in the green cart is acceptable materials (95% mixed organics and 4% L Y W), equating to 99%. This stream has approximately a 1% contamination rate.

Figure 21: Downtown Core Organics Bin Characterization

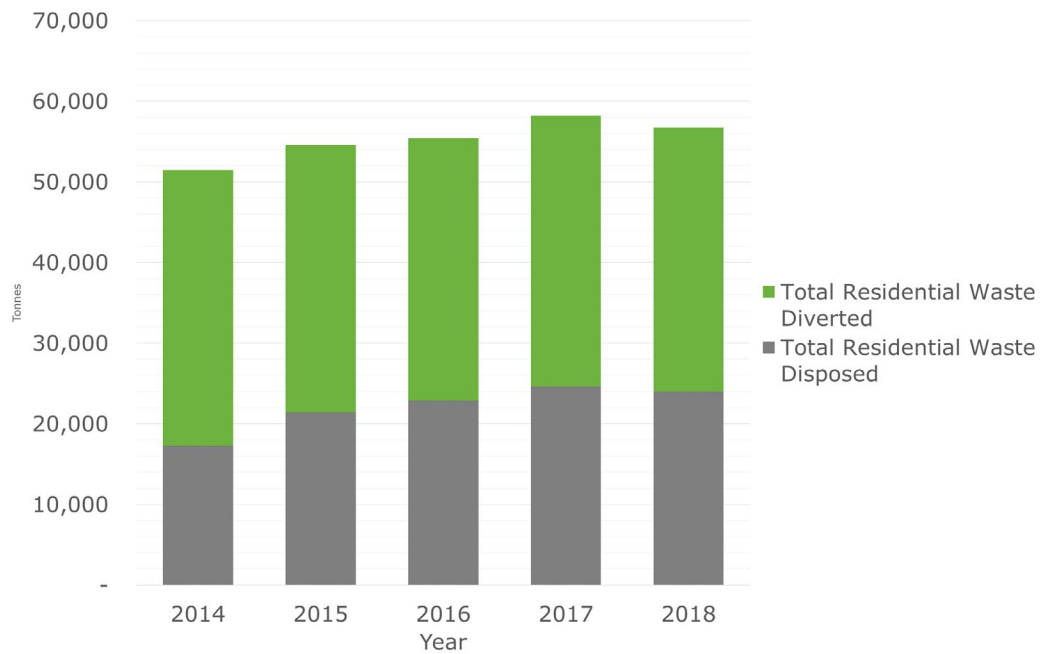


5.2 Historical Waste Quantities

The historical waste generation quantities in the City were obtained from the R P R A Datacall. On an annual basis, municipalities within the Province of Ontario are required to report their waste management program results through the R P R A Datacall. **Figure 22** presents a summary of the overall residential tonnes of waste managed by the City (diverted and disposed of), as reported in the annual Datacall Residential Waste Diversion reports from 2014 to 2018.

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Figure 22: Total Residential Waste Generated (R P R A Datacall²²)



²² R P R A Datacall - Residential Diversion Rate.
<https://rprra.ca/programs/about-the-datacall/>

5.2.1 Performance Monitoring

Diversion rate is a common metric used to compare the effectiveness of municipal waste management programs. Diversion rate is defined as the amount of waste that is reduced, reused and recycled (i.e., not sent for disposal) divided by the total amount of waste produced, including waste sent for disposal.

Ontario municipalities report their residential diversion rates to the R P R A on an annual basis through the municipal Datacall. R P R A's diversion rate includes:

- estimates for backyard composting and grasscycling as it is considered on-site waste reduction
- municipally sponsored reuse activities
- refillable containers used as part of a deposit-return system (e.g., beer bottles)
- waste diverted through recycling and composting (or digestion)

It is noted that other approaches to reduction (e.g., resident purchasing decisions) and reuse (e.g., clothing donated to reuse stores) are not effectively tracked and measurable.

In 2019 approximately 54% of the residential waste managed by the City was diverted from disposal. **Figure 23** shows the residential diversion rates calculated for the City, based on data reported to R P R A, over the past seven years, which has been fairly consistent since 2016 and has decreased since a peak of 69% in 2013.

Several factors have led to plateauing of residential diversion rates in the past six to eight years, especially the Blue Box program. Potential reasons for the decline/stagnation in diversion rates, which has been noted in other jurisdictions, could be related to how diversion is estimated based on weight and how packaging materials have decreased in weight over the years. This is referred to as the “evolving tonne”. The weight of an aluminum can or plastics water bottle is much lighter today compared to ten years ago.

In addition, the materials recycled in the Blue Box program have changed over time with changing consumer market behaviour.

The digital age has shifted from a paper-based information era (newspapers, flyers, paper bills, books) to digitally-based information (internet, social

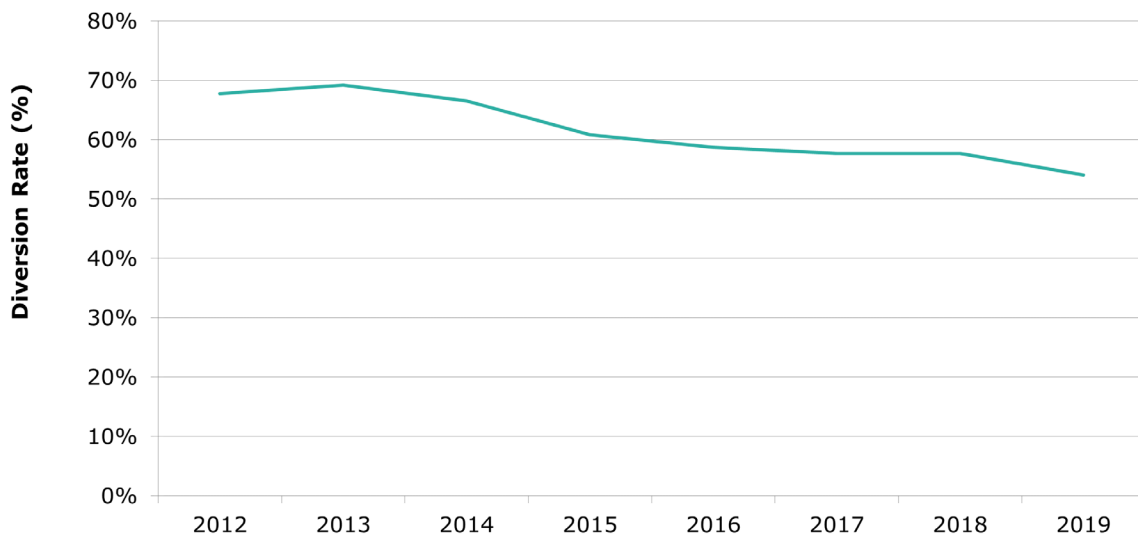
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media, e-billing, e-books). Packaging designs change with each new products released onto the market. Corporations have shifted to more plastic packaging due to the lightweight and low cost of virgin plastics – shifting formerly from glass, metal and fibre packaging in the past. Corporations have also designed new types of packaging that are not recyclable and therefore end up as disposed items. These include black plastics and standup plastic pouches commonly seen as packaging for household food and goods.

These shifts impact the materials found in the Blue Box, which in turn reflects the light-weighting of the total materials that are recovered for recycling each year.

Additionally, the Future State and Growth sub-report includes a section on Emerging Issues which also describes some of these factors impacting diversion rates.

Figure 23: Historical Residential Diversion Rate (2012 - 2019)



6.0 Municipal Benchmarking on Waste Diversion

In order to gauge the effectiveness of the City's waste management system performance, a select number of municipalities that are comparable to Guelph were contacted and asked to provide information on their waste management system. The following section explains the methodology and results from this information-gathering exercise.

6.1 Methodology

To conduct the benchmarking assessment, the approach was to identify comparator municipalities that demonstrate high performance in waste diversion and have a well-structured integrated solid waste management program in place, similar to the City's waste management system. The approach included developing a questionnaire, contacting municipalities via email and telephone, request information through a questionnaire and analyze findings in a manner that could be compared to the City's waste diversion system. The five chosen municipalities provided publically available information through the questionnaire.

The selection of comparator municipalities required some or all of the following criteria:

- All of the chosen municipalities were part of the Council approved City Municipal Comparator List (list of 30 Ontario municipalities). It is noted that some of the municipalities on the list overlap jurisdictions, specifically some local tier municipalities (e.g., Burlington and Oakville) are not responsible for the management of waste and the upper-tier municipality (e.g., Region of Halton) can be used for comparison purposes. This reduces the number of eligible comparators for solid waste.
- Similar level of service (e.g., bi-weekly garbage collection, weekly organics collection, etc.)
- Similar demographics including Universities and Colleges
- Initiative to maintain and improve performance and diversion rates

It is noted that the benchmarking review did not look at comparing qualitative data with respect to the service level of each municipality. The

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focus was to develop a balanced comparison of the variety of programs available within each municipality to promote waste diversion.

The following municipalities were selected for comparison to Guelph: City of Barrie, Region of Waterloo, City of Hamilton, Halton Region and City of Kingston. **Table 6** lists the comparator municipalities and summarizes the rationale behind their selection.

Table 6: Overview of Comparator Municipalities

Municipality	Rationale for Selection
City of Barrie	<ul style="list-style-type: none"> • Similar waste diversion performance • Similar demographics • Central waste management facility • Similar service delivery approach for waste streams • Single tier Municipality
City of Kingston	<ul style="list-style-type: none"> • Similar population, area and density • Similar leaf and yard waste program • University City • Single tier Municipality
Region of Waterloo	<ul style="list-style-type: none"> • Neighbouring Municipality • University located within Region • Similar level of service • Owns some waste management infrastructure
Halton Region	<ul style="list-style-type: none"> • Central waste management facility • Similar service delivery approach for all waste streams
City of Hamilton	<ul style="list-style-type: none"> • Owns organics facility and M R F • University City • Single tier Municipality

Municipal contacts were identified and a personalized letter, outlining the details of the benchmarking assessment, information being requested and timing to get information, was sent out to each participating municipality on November 29, 2019.

A sample letter is included in **Appendix B**. Each municipality received a questionnaire concerning their solid waste management systems and waste

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diversion initiatives. A copy of the questionnaire can be found in **Appendix B**. An overview of the information requested for each main category can be found in **Table 7**. All participating municipalities completed the full questionnaire.

Table 7: Benchmarking Questionnaire Summary of Questions

Section	Summary of Key Questions
1) General Information	<ul style="list-style-type: none"> • Customers serviced, including the number of households serviced • Service level offered • Methods to fund waste management services • Diversion rates • Unique by-law components
2) Garbage Collection	<ul style="list-style-type: none"> • Collection methods and frequency • Service delivery approach • Acceptable containers and limits • Factors that relate to the established collection frequency • Quantity collected and disposed in 2018
3) Recycling Collection	<ul style="list-style-type: none"> • Types of recycling programs offered • Collection methods and frequency • Acceptable containers • Factors that relate to the established collection frequency • Contamination rate • Responsibility for marketing of recyclables • Quantities collected and marketed in 2018
4) Organics (L Y W) Collection	<ul style="list-style-type: none"> • Collection methods and frequency • Programs offered including mixed L Y W and loose leaf and who provides these services • Factors that relate to the established collection frequency • Acceptable containers and materials • Customers that do not receive this service • Responsibility for marketing of compost • Quantities collected and marketed in 2018

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Section	Summary of Key Questions
5) Organics S S O Collection	<ul style="list-style-type: none"> • Collection methods and frequency • Acceptable containers and types of bags accepted, if applicable • Factors that relate to the established collection frequency • Material accepted • Contamination rate • Responsibility for marketing of compost and finished products • Quantities collected and marketed in 2018
6) Household Hazardous Waste	<ul style="list-style-type: none"> • Collection methods • Annual number of residents that use this service • Quantity collected in 2018
7) Large Items/ Bulk Waste Collection	<ul style="list-style-type: none"> • Collection methods • Annual number of residents that use this service • Quantity collected in 2018
8) Public Drop-Off	<ul style="list-style-type: none"> • Public drop off sites available • Population served per public drop-off location • Materials accepted and cost associated • Customers allowed to use these facilities
9) Processing and Disposal Infrastructure	<ul style="list-style-type: none"> • Location and capacity of each processing and disposal infrastructure • Types of wastes accepted at each location • Applicable drop-off fees at each location • Quantity disposed/processed in 2018
10) Enforcement and Incentives	<ul style="list-style-type: none"> • Incentives and programs available • Enforcement mechanisms available
11) Promotion and Education (P & E)	<ul style="list-style-type: none"> • Annual cost per household for P & E • Measurements in place to quantify the effectiveness of P & E • Unique P & E initiatives
12) Reduction and Reuse	<ul style="list-style-type: none"> • Waste reduction initiatives • Key Performance Indicators (K P Is) in place
13) Other Diversion Initiatives	<ul style="list-style-type: none"> • Specific programs that divert specific material streams

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By February 5, 2020, all participating municipalities had returned a completed questionnaire and the information was consolidated to allow for comparison to the City's services. Dillon analyzed the available data to assess completeness and comparability. Confidence levels of low, medium or high were assigned to the data received from the municipalities that were based on the following rationale:

- A low confidence rating indicated that the data was not complete or had gaps that would affect its comparability to City's data.
- A medium confidence level was assigned to data where there were known differences in the comparability of the data, but the consulting team was comfortable that the data was of good quality and valuable within the service comparison.
- A high confidence level was assigned to data where there was strong comparability between data received and the City's, and the dataset was considered complete.

6.2 Waste Diversion Targets & Performance

Waste diversion rates are a function of the total weight of waste diverted over the total weight of waste generated. The residential waste diversion rate considers only wastes from the residential sector. It is currently the most widely used performance metric in the solid waste industry and one that is tracked through the R P R A annual municipal Datacall. It is noted that this widely used metric is becoming less meaningful as it is based on weight (and material packaging is decreasing in weight) and does not take into consideration waste diversion occurring at the source (e.g., waste reduction efforts undertaken by an individual). The overall waste diversion rate for all wastes managed by a municipality is not used to compare programs because of the high degree of variability in quantities of ICI waste between jurisdictions.

Residential waste diversion targets and rates provide some context for the range and number of waste diversion programs being planned or offered by a municipality. **Table 8** provides the residential waste diversion targets set by the municipalities and current diversion rate for the City (taken from the R P R A Datacall) for the five comparator municipalities.

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Table 8: Residential Waste Diversion Targets

Municipality	Diversion Target	Waste Diversion Rate (2018)
City of Guelph	70%	58%
City of Barrie	60%	53%
Region of Waterloo	N/A	61%
City of Hamilton	65%	36%*
City of Kingston	65%	62%
Halton Region	65%	55%

* The City of Hamilton experienced a lower than normal diversion rate in 2018 due to the closure of the organics facility. Between 2014 and 2017, under normal operating conditions, the City has achieved between 44% and 48% residential waste diversion. The City reports that they are currently achieving pre-organics facility closure diversion rates.

6.3 Waste Diversion Programs

6.3.1 City's Current Approach

The City currently holds a variety of programs in order to divert additional materials from landfill disposal and to encourage waste diversion. These programs for specific waste streams include curbside collection of organics and recyclables, ReCycle Bike Reuse Program, the goods exchange weekends and the Paint + Reuse Program.

The City also operates the P D O at the W R I C, which includes the Recycling Zone, where residents can drop off items such as blue cart recyclables, electronic waste, shredded paper, M H S W, Y W and gently used textiles for reuse or recycling at no additional cost.

6.3.2 Benchmarking Results

A summary of key aspects of the comparator municipal waste diversion programs is provided in **Table 9** and **Table 10**. It is noted that the confidence ratings for all of the comparator data were assigned a high rating.

Table 9: Waste Diversion Programs

Type	Description
Curbside Collection	<p>Recyclables: All comparators offer weekly curbside collection.</p> <ul style="list-style-type: none"> • City of Kingston: offers weekly collections for recyclables with alternating weeks between blue (i.e. plastic containers) and grey boxes (i.e. newspapers, cardboard). <p>Source separated organics (S S O): All comparators offer weekly curbside collection.</p> <p>L Y W: All comparators offer curbside collection.</p> <ul style="list-style-type: none"> • City of Barrie, City of Kingston and Halton Region: offer seasonal L Y W collection. <ul style="list-style-type: none"> ○ City of Barrie: offers weekly curbside L Y W collection 6 months of the year (i.e. January, April, May, June, September, October and November). During July, August and September, collection frequency changes to bi-weekly, and during February and March, no L Y W collection services are available. ○ City of Kingston: offers L Y W curbside collection 1 week a year in the fall for brush and another week a year for leaf. ○ Halton Region: offers bi-weekly L Y W curbside collection from the first week of April through the second week of December. • Region of Waterloo: offers L Y W collection year-round (bi-weekly). • City of Hamilton: offers L Y W collection year-round (weekly). However, starting in 2021, the City of Hamilton will be reducing L Y W year-round weekly collection to collection nine months of the year starting the first Monday of March each year and ending the last Friday of November each year.

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Type	Description
Curbside Collection (continued)	<p>Two of the comparators (Halton Region and the Region of Waterloo) have local municipalities that provide loose leaf collection services.</p> <ul style="list-style-type: none"> • Halton Region: Two local municipalities within Halton Region (Burlington, Oakville) offer loose leaf collection between October and November. • Region of Waterloo: three local municipalities in the Region of Waterloo (Cambridge, Kitchener, and Waterloo) offer loose leaf collection between October and November. <p>Four of the comparators collect garbage on a bi-weekly basis while the other comparator provides weekly curbside garbage collection.</p> <p>All comparators offer recycling and organics collection to single family and some multi residential properties. For example, the City of Kingston noted that all multi-residential properties are eligible for service, but may not be receiving service by choice.</p>
Drop-off Programs, Free of Charge	<ul style="list-style-type: none"> • Cities of Barrie, Kingston and Hamilton: offer free drop-off of recyclables at specific locations
Drop-off Programs, Fees	<ul style="list-style-type: none"> • Halton Region and Region of Waterloo: offer a drop-off service for recyclables for a fee based on weight
M H S W Depot	<p>All comparators provide M H S W public drop-off location(s) for residents.</p> <ul style="list-style-type: none"> • Four of the five comparators operate year-round. • City of Kingston: operates between April and November. • All comparators provide a free of charge service, and there are drop-off volume limits in place.

Table 10: Waste Diversion Programs for Specific Waste Streams

Type	Description
Batteries	<ul style="list-style-type: none"> • City of Barrie: currently offers a curbside battery collection program for one week in the late fall. Battery bags with instructions are sent to households in late October, and residents are encouraged to place battery bags curbside during the allocated week, in a visible location.
Textiles	<ul style="list-style-type: none"> • City of Kingston: runs a textile diversion program through charitable organizations at Recycling Depots.
Paint	<ul style="list-style-type: none"> • City of Kingston: encourages residents to bring partially-filled paint cans to the M H S W facility, where they can be re-used. • City of Hamilton: have paint reuse sheds in each of their three Community Recycling Centres to promote the reuse of household paint.
Reuse Centre	<ul style="list-style-type: none"> • City of Hamilton: has a reuse store at one of their Community Recycling Centres, where items can be donated or used items can be purchased. Halton Region has a partnership with the Salvation Army who operates a trailer at their integrated waste management facility where residents can drop off and/or pick up gently used goods for reuse.

6.4 Waste Diversion Policies and Enforcement

6.4.1 City’s Current Approach

The City enforces the Waste Management By-law through Compliance and Enforcement Officers who work to meet the Operations Department Mission Statement. Under By-law number (2019)-20392, Managers and Officers may conduct all inspections, including the monitoring of waste, which are necessary to administer and ensure compliance with the provisions of the By-law. Managers and Officers may issue Orders requiring Persons to comply with the By-law, within a given deadline.

On March 19, 2019, City Council approved an updated Waste Management By-law ((2019)-20392) to provide a foundation for multi-residential collection that started in 2019.

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References to the collection system prior to the implementation of carts were removed, as they no longer apply, and for the first time, the rules and regulations that pertain to the use of the W R I C were added to the By-law. Major changes include stopping the collection of grass clippings from green carts and curbside yard collection and stopping collection for facilities that create medical waste (e.g., clinic, hospital, dental, veterinary office, tattoo parlours).

The City currently enforces waste management under By-law number (2019)-20392. The City is authorized to administer and enforce this By-law, which provides guidelines for areas such as collections, container requirements and placement during collection days, limits and littering.

6.4.2 Benchmarking Results

A summary of the key aspects of the comparator municipality enforcement mechanisms and policies is provided below. Confidence ratings applied were three high and two medium. There were some gaps provided in the enforcement protocols and procedures and how waste management is typically enforced.

Table 11: Enforcement Mechanisms

Type	Description
Leaving incorrectly sorted material behind	<ul style="list-style-type: none">• Halton Region, Cities of Hamilton and Kingston: enforce proper sorting by leaving incorrectly sorted materials behind at the curb
Stickers	Two of the municipalities visually pre-screen organic and recyclable containers, and tag improperly sorted containers with a sorting reminder sticker. <ul style="list-style-type: none">• Halton Region: uses "Sorry Stickers"• City of Hamilton: uses "Oops Stickers" to tag containers that contain contaminated materials.

6.5 Waste Diversion Promotion and Education

6.5.1 City's Current Approach

As mentioned in **Section 4.4.1**, the City has a wide range of P & E initiatives including the Waste App, Waste Wizard, use of the City website to promote diversion efforts such as food waste reduction and general waste reduction practices and the creation of the Give Waste a New Life campaign that includes a logo that appears on the website, brochures, posters and local newspapers.

The City also has a waste diversion education centre at the W R I C and offers guided tours and education for Guelph students between April and October on waste diversion programs and facilities.

6.5.2 Benchmarking Results

A summary of the unique P & E programs as well as methods to track the effectiveness of PE initiatives is provided below. The confidence ratings of all of the comparator data were assigned a high rating for four of the municipalities due to the level of completeness, and one medium. There were some gaps in the information provided with respect to the tracking procedures.

Table 12: Unique Promotion and Education Initiatives

Region	Description
City of Barrie	Currently working with local institutions to conduct a focus group and surveys on green bin usage.
City of Hamilton	Offers awards to motivate residents to improve their waste diversion performance. Residents receiving curbside collection and participating in all waste diversion programs and setting out one bag of garbage or less each week are eligible to win a gold recycling box for their efforts to reduce waste sent to landfill. In the future, this recognition program may be expanded to business and multi-residential buildings.

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Region	Description
City of Kingston	Has updated their website which focuses on waste reduction and specifically on food waste reduction. Descriptions on what food waste is, why it is important to reduce food waste and links for understanding best before/expiry dates, holiday food waste reduction, meal planning, etc. are provided on the City's website.
Halton Region, (Hamilton and Kingston)	Have an outreach program for schools to teach students how to divert waste

Table 13: Tracking Promotion and Education Effectiveness

Region	Description
City Kingston and the Region of Waterloo	Measure the effectiveness of P & E programs through diversion rates of particular materials, social media engagement, and survey participation
City of Hamilton	One comparator measures the effectiveness of P & E programs by the number of hits, shares, likes and views on social media (i.e. Twitter, Facebook). The effectiveness of non-social media P & E programs are measured by the estimated number of individuals that pass by billboards and bus shelters.
Cities of Barrie, Kingston and Hamilton	Track the annual cost for P & E per household. These range from \$1.40 to \$2.00 per household.

6.6 Summary of Observations and Potential Options/Considerations for Guelph

The purpose of the benchmarking assignment and data analysis was to compare the City's solid waste management strategies with other similar Ontario municipalities. Upon review of the City and comparator municipalities, the City has a higher than average residential diversion rate, with similar programs, enforcement mechanisms and P & E initiatives in place to support waste diversion.

Dillon conducted a review of three different elements of the City's waste management practices, which includes waste diversion programs, enforcement and policies and P & E initiatives. Research on the comparator municipalities was completed through online research, telephone interviews, emails and completion of the questionnaire. The comparator municipalities were selected based on factors such as their waste diversion rates, demographics and initiative to maintain and improve performance and diversion rates. The City was then compared to these municipalities using low, medium or high confidence ratings based on comparability to the City's data.

The City has the highest waste diversion target amongst the comparator municipalities at 70%, although four are set at 60% or higher (one municipality did not provide a target). The City's residential diversion rate at 58% in 2018 is higher than the average diversion rate of the comparator municipalities. This high diversion rate indicates that the City's diversion programs are effective compared to the other municipalities.

Through the assessment, it was determined that the City provides a number of waste diversion programs comparable to the municipalities. An evident difference is that the City provides bi-weekly recycling collection, while the other five comparators provide a weekly collection service. Similar to the five comparators, the City provides weekly collection of organics and bi-weekly collection for garbage, except for the City of Hamilton. Both the City and the City of Kingston L Y W program have the lowest collection frequency (2 weeks per year). The City also has a similar loose leaf collection program to the other two comparators that have this service provided to residents (Halton Region and Region of Waterloo), which is scheduled once a year during the fall throughout the City.

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It is noted that the City also has waste diversion programs for specific waste streams such as bicycles, which some of the comparable municipalities do not have. For enforcement, the City has similar measures in place to the comparators such as the use of tag stickers (i.e. Sorry and Oops Stickers), which are commonly used by municipalities to enforce proper sorting for curbside collection.

Lastly, for P & E, the City has similar programs in place to the other municipalities, which focus on students and schools, to teach them the fundamentals of waste diversion.

Similar to the City of Hamilton, the City has an education centre at a specific location (W R I C Waste Resource Education Centre) which provides visitors with an understanding of how Guelph's organics, recyclables and garbage are collected and processed and how to minimize the amount of garbage created and sent for landfilling. Based on the 2020 annual budget, the City's annual cost for P & E per household is \$2.28 per residential household.

7.0 Next Steps

This Current State Report will be used as a baseline to compare future initiatives and changes to the waste management program as a result of the S W M M P.



Appendix A

2014 S W M M P Recommendations and Status

1 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
1.0 Explore alternative methods for recovery of designated materials	1.1 - City to explore alternative methods to provide recovery service for a range of divertible materials such as construction and demolition waste, electronics, batteries, household hazardous waste, and textiles. Alternatives may include collection events, special mobile services, additional curbside collection opportunities, depots, bulky item program expansion, other departmental environmental initiatives	Completed
1.0 Explore alternative methods for recovery of designated materials	1.2 - Conduct a curbside battery collection program	Completed
1.0 Explore alternative methods for recovery of designated materials	1.3 - Conduct a textile collection program	Ongoing
2.0 Examine diversion of additional materials at the public drop-off depot	2.1 -Conduct a review to expand the number of materials diverted at the drop off depot, e.g. expansion of construction and demolition materials (carpet, window glass, vinyl siding), mattresses, furniture, organic collection, plastic film.	Completed
3.0 Investigate establishment of a reuse centre at the public drop-off depot	3.1 - The City would possibly partner with community benefit organizations to manage reusable goods, such as C & D materials, gently used goods, textiles.	Deferred
3.0 Investigate establishment of a reuse centre at the public drop-off depot	3.2 - Opportunities may also include partnering with an educational institution or program to provide fix/repair materials for apprenticeship training.	Deferred

2 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
4.0 Promote “waste less” principles and policies	4.1 - Educate residents in making purchasing decisions that would promote waste reduction and reuse through a variety of public instruments (e.g. pre-cycling, smart shopping, E P R, eco labelling on shelves, etc.)	Ongoing
5.0 Conduct a comprehensive waste audit review	5.1 - Conduct a four season waste audit for single family, multi residential properties, and the public drop off to better understand issues of waste generation, contamination of materials, and diversion opportunities. May include set out and capacity monitoring as part of the study. Residue from W R I C site activities such as the Material Recovery Facility and Organic Waste Processing Facility may also be valuable.	Completed
6.0 Explore share and reuse initiatives	6.1 - Work with community groups and/or organizations to establish initiatives that promote waste reduction and reuse, such an art exchange centre, tool share libraries, fix-it clubs, swapping/share events and little free libraries. These may be neighbourhood initiatives and/or city wide initiatives.	Ongoing
7.0 Analyze expansion of downtown core public space recycling	7.1 - Work with the downtown residential and business sector to complete a study determining the most effective recycling approaches, containers, P & E materials.	Completed
8.0 Continue to enforce proper waste sorting practices	<p>8.1 - Reinvigorate a comprehensive communication campaign and education program to improve sorting compliance at the curb.</p> <ul style="list-style-type: none"> • Continue program from the 4-week strategy pilot and communications strategies on waste sorting • Data entry and analysis • Rewards and Recognition Program- Curbside Sorting Superstar 	Completed

3 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
8.0 Continue to enforce proper waste sorting practices	8.2 - Consider adding more materials to the non-collectible waste (e.g. materials that have a number of convenient, alternative collection programs, such as depots and Take It Back programs)	Completed
9.0 Explore alternatives to landfill	9.1 - Explore alternatives to landfill at appropriate times in agreements and waste disposal contract cycles including technologies that would support the Community Energy Plan	Completed
10.0 Finalize the City's Green Procurement Policy	10.1 - Explore bringing forward the Green Procurement Policy as part of the amendments to the Procurement By-law	Completed
11.0 Explore Pay-As-You-Throw	<p>All or part of waste management costs are covered by a subscription rate rather than through taxes; properties pay according to the amount of garbage set out for disposal as opposed to a "flat" rate; Promotes a fair and equitable cost for the service received. City would also examine a range of policies such as exploring a hybrid approach which might involve:</p> <p>11.1 - subscription rates based on the size or number of grey garbage carts beyond the standard and invoiced similar to a utility</p>	Ongoing
11.0 Explore Pay-As-You-Throw	11.2 - a tiered garbage rate system with preference to those properties that have implemented successful recycling and organic programs and meet waste diversion targets	Ongoing
11.0 Explore Pay-As-You-Throw	11.3 - enables opportunities for properties interested in receiving specialized or preferential service levels (e.g. increased collection frequency, staging containers so they are accessible for collection)	Ongoing

4 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
11.0 Explore Pay-As-You-Throw	11.4 - providing collection service to interested non-residential parties for a cost-recovery fee, such as, organics collection, front end bin service, etc.	Ongoing
12.0 Adopt municipal household disposal rate target	12.1 - Investigate establishing a goal to reduce residential annual waste based on a weight or volume per capita, progress monitored against fixed target.	Completed
13.0 Develop waste diversion targets for municipally operated buildings	13.1 - Expand waste reduction and diversion programs. City to lead by example; Set up/ improve three stream at all City buildings; Streamline communication, communize containers at all City facilities; EWAC - corporate scorecards, etc.; Victoria Road; Zero Waste at City events (e.g. corporate BBQ, etc)	Completed
14.0 Explore Public, Private, Partnerships	14.1 - Explore innovative waste diversion partnerships with the private sector or other municipalities as opportunities arise. Benefits include promoting local innovation and stimulating a local green economy. Example - Edmonton's partnership with Greys Recycling in which Edmonton supplies paper from city facilities and Greys Recycling converts it back to paper which the City purchases.	Did not occur (no opportunities were presented)
15.0 Investigate an additional public drop off centre	15.1 - Investigate an additional public drop off centre at a location in the City to augment the current location at the Waste Resource Innovation Centre to improve customer service levels and accommodate growth in the City. Consider expanding household hazardous waste to include small quantity generator waste from businesses.	Ongoing

5 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
16.0 Transfer responsibility and resources for waste collection in public spaces to Solid Waste Resources	16.1 - Internalize waste collection at all remaining city facilities (e.g. Victoria Road, West End, etc.)	Ongoing
16.0 Transfer responsibility and resources for waste collection in public spaces to Solid Waste Resources	16.2 - Transfer responsibility and resources for waste collection in public spaces to Solid Waste Resources. Target areas would include parks, outdoor spaces and transit stop locations enabling expansion for recycling and organic opportunities	Cancelled
16.0 Transfer responsibility and resources for waste collection in public spaces to Solid Waste Resources	16.3 - Establish as a formal policy that any waste generated by City operations and contracts is transferred, processed or disposed through the Waste Resource Innovation Centre (e.g., construction and demolition materials, recyclables, shredded paper, clean fill, brush, and other materials acceptable for diversion).	Cancelled
17.0 Establish a food waste reduction campaign	17.1 - Establish a food waste reduction campaign to promote reduction and avoid unnecessary waste generation and preserve resources associated with food production, packaging and transport.	Ongoing
18.0 Develop enhanced P & E Campaign	18.1 - City to develop an enhanced promotion and education program, which may include a range of opportunities such as: Develop Overarching Communication Campaign for Solid Waste	Ongoing
18.0 Develop enhanced P & E Campaign	18.2 - enhancing the on-line local business directory (Take It Back directory),	Completed
18.0 Develop enhanced P & E Campaign	18.3 - developing waste exchange programs enabling residents to donate and exchange reusable goods	Completed

6 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
18.0 Develop enhanced P & E Campaign	18.4 - implementing incentive and reward programs	Completed
18.0 Develop enhanced P & E Campaign	18.5 - introducing targeted diversion or problematic materials causing contamination campaigns	Ongoing
18.0 Develop enhanced P & E Campaign	18.6 - information promoting available E P R opportunities	Ongoing
18.0 Develop enhanced P & E Campaign	18.7 - developing a waste application available to residents that will provide useful information about Guelph's collection schedules, notices and waste diversion opportunities	Completed
18.0 Develop enhanced P & E Campaign	18.8 - use of infographics to relay information	Ongoing
19.0 Develop a 2015 operating budget for Council to consider twice per year curbside yard and waste collection service	19.1 - Develop a 2015 operating budget for Council to consider twice per year curbside yard and waste collection service	Completed
20.0 Implement grass cycling program	20.1 - Educate residents about the benefits of leaving grass clippings on the lawn; Reduces collection and processing requirements while maintaining soil quality	Completed
20.0 Implement grass cycling program	20.2 - Remove grass clippings as an acceptable material for curbside collection.	Completed
21.0 Outreach for residential waste minimization and diversion programs	21.1 - Community Animators, Green Teams and Master Composter or Recycler volunteers	On hold

7 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
21.0 Outreach for residential waste minimization and diversion programs	21.2 - Friendly “best recycling neighbourhood” challenges	On hold
21.0 Outreach for residential waste minimization and diversion programs	21.3 - Engaging the public with staff or volunteers at community events	Ongoing
22.0 Enhance and target P & E and Multi-residential Sector	22.1 - enhance the dedicated website for superintendents/property managers and tenants to explain the how, why, and what of waste diversion	Completed
22.0 Enhance and target P & E and Multi-residential Sector	22.2 - P & E materials that can be printed and used in the building	Completed
22.0 Enhance and target P & E and Multi-residential Sector	22.3 - Develop tool kits and handbooks. City to launch an enhanced P & E campaign targeting the MR sector	Completed
23.0 Develop an enhanced database for multi-residential properties	23.1 - Continue to build a MR database to manage and monitor MR waste programs	Completed
24.0 Outreach for multi-residential waste minimization and diversion programs	24.1 Establish a multi-residential waste diversion working group that includes property managers, superintendents, landlords, condominium owners, tenants and City staff to discuss challenges and solutions to increasing waste diversion	Completed

8 | Appendix A: 2014 S W M M P Recommendations and Status

Issue	2014 S W M M P Recommendation	Status (2019)
24.0 Outreach for multi-residential waste minimization and diversion programs	24.2 - using students to go door-to-door to explain waste diversion	Completed
24.0 Outreach for multi-residential waste minimization and diversion programs	24.3 - ask residents and owners to sign a pledge and place sticker on door showing support for waste diversion	Completed
24.0 Outreach for multi-residential waste minimization and diversion programs	24.4 - establish property waste reduction challenges	Cancelled
24.0 Outreach for multi-residential waste minimization and diversion programs	24.5 - using trained volunteers as building champions or ambassadors to promote waste diversion in buildings	Completed
24.0 Outreach for multi-residential waste minimization and diversion programs	24.6 - request property owners and managers to develop waste management plans	Completed
24.0 Outreach for multi-residential waste minimization and diversion programs	24.7 - request property owners and managers to provide feedback to residents about waste diversion progress, such as a "recycling barometer", property initiatives or concerns about contamination, etc.	Cancelled

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Issue	2014 S W M M P Recommendation	Status (2019)
24.0 Outreach for multi-residential waste minimization and diversion programs	24.8 - provide training to property management, landlords and superintendents on how to maximize waste reduction and diversion on their property	Completed
25.0 Expand development approval process to promote waste diversion in multi-residential properties	25.1 - Formalize guideline for the site approval process that ensures waste diversion is as convenient as garbage (e.g., three chutes, automated separation equipment and on-floor sorting stations)	Completed
25.0 Expand development approval process to promote waste diversion in multi-residential properties	25.2 - Require deposits by New Building owners to ensure that an effective waste diversion program is established and maintained – letter of credits are returned after two years	Cancelled
26.0 Explore types of collection services provided to material recovery properties	26.1 - Review types of collection service offered to multi-residential properties willing to source separate into three streams; May require reconfiguring the collection fleet with specialized vehicles for medium and high density multi-residential properties	Completed
26.0 Explore types of collection services provided to material recovery properties	26.2 - Staff to bring forward a report to Council outlining recommendations and costs associated with expanding the type of collection service offered to multi-residential properties	Completed
27.0 Provide assistance I C & I establishments	City staff to explore creative options to provide assistance to the I C & I sector to help them develop more effective waste diversion programs. Services may be provided through partnering opportunities, contracted services, funding from organizations, or on a cost recovery basis. Services may include:	Deferred

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Issue	2014 S W M M P Recommendation	Status (2019)
27.0 Provide assistance I C & I establishments	27.1- provide assistance to businesses and institutions to promote waste reduction and diversion in their establishments	Deferred
27.0 Provide assistance I C & I establishments	27.2 - develop waste reduction training and/or provide waste diversion consultation, such as in the case of the downtown area, or on an individual business basis	Deferred
27.0 Provide assistance I C & I establishments	27.3 - develop a Green Business Recognition Program or support/partner with existing Community Business Recognition programs	Deferred
27.0 Provide assistance I C & I establishments	27.4 - explore a Business case for conducting waste audits or waste audit planning and/or training	Deferred
27.0 Provide assistance I C & I establishments	27.5 - establish I C & I sector working groups on waste diversion	Deferred
27.0 Provide assistance I C & I establishments	27.6 - support the development of Eco-Industrial zones or networks, where local business coordinate complementary exchanges of useful products and by-products to avoid waste and add value to their process	Deferred
27.0 Provide assistance I C & I establishments	27.7 - enhanced/target P & E and outreach campaigns for business sector	Deferred
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	The City would explore a number of requirements as part of the permit process for new building construction and demolition that would result in waste diversion. May include:	Deferred

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Issue	2014 S W M M P Recommendation	Status (2019)
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	28.1 - municipal construction and demolition project must submit a waste diversion plan	Deferred
28.0 Explore requirements as part of the permit process for new building construction and demolition (C&D) that would result in waste diversion	28.2 - mandatory waste diversion targets for all new municipal construction, demolition and renovations	Deferred
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	28.3 - mandate that all C & D materials associated with municipal construction must be diverted to a C & D recycling facility	Deferred
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	28.4 - rebates in which buildings that achieve a certain waste diversion and other green targets receive rebates back from the municipality during construction	Not scheduled yet

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Issue	2014 S W M M P Recommendation	Status (2019)
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	28.5 - establish policies such as fast tracking permits for achieving waste diversion targets during construction or issuing occupancy permit upon receipt of waste diversion invoices	Not scheduled yet
28.0 Explore requirements as part of the permit process for new building construction and demolition (C & D) that would result in waste diversion	28.6 - refundable deposit programs require that all construction projects (usually above a specified size) pay a deposit as part of the building permit.	Not scheduled yet
29.0 Develop a C & D waste diversion strategy	Offer assistance to C & D businesses to promote and help them develop more effective waste diversion programs. Services may include	Deferred
29.0 Develop a C & D waste diversion strategy	29.1 - establish on site waste reduction and diversion programs	Deferred
29.0 Develop a C & D waste diversion strategy	29.2 - develop waste reduction training and/or provide waste diversion consultation	Deferred
29.0 Develop a C & D waste diversion strategy	29.3 - provide assistance to help educate developers about waste diversion in green building design standards	Deferred
29.0 Develop a C & D waste diversion strategy	29.4 - establish a C & D sector working group to facilitate discussions to address common waste reduction and diversion challenges	Deferred



Appendix B

Municipal Comparator Letter to Participate and Questionnaire