



The Corporation of the City of Guelph

Solid Waste Management Master Plan

Final

November 2021



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Executive Summary

Please refer to separate document.

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Appendices

Appendix A. Current State Report
Appendix B. Future State Report
Appendix C. Strategy on Single Use Items

Acronyms, Abbreviations and Initialisms

BIA	Business Improvement Area
C&D	Construction and Demolition
CE	Circular Economy
City	City of Guelph
COVID-19	Novel Coronavirus Disease 2019
CPP	Canada Plastic Pact
DGBA	Downtown Guelph Business Association
DSG	Downtown Stakeholder Group
ECCC	Environment and Climate Change Canada
EDAC	Economic Development Association Canada
EPR	Extended Producer Responsibility
ICON	Ideas Congress
IPR	Individual Producer Responsibility
LYW	Leaf and Yard Waste
IC&I	Industrial, Commercial and Institutional
MECP	Ministry of the Environment, Conservation and Parks
MHSW	Municipal Hazardous and Special Waste
MR	Multi-Residential
MRF	Materials Recovery Facility
NGO	Non-Government Organizations
OWPF	Organics Waste Processing Facility

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PAC	Public Advisory Committee
P&E	Promotion and Education
PDO	Public Drop-off
PDOs	Public Drop-offs
PPP	Paper Products and Packaging
PRO	Producer Responsibility Organization
PSC	Public Space Containers
SUI	Single-Use Items
SWMMP	Solid Waste Management Master Plan
TAC	Technical Advisory Committee
WRIC	Waste Resource Innovation Centre
YW	Yard Waste



1.0 Introduction

Every five years, the City of Guelph (City) reviews and updates its Solid Waste Management Master Plan (SWMMP). The purpose of regularly reviewing the SWMMP is to continue to align current waste management practices and strategies with Guelph's current and future needs. Through this review, the City is also able to be at the forefront of innovative waste management initiatives, such as advancing the circular economy.

The City is among the leaders in Ontario municipal waste management in terms of diverting waste from disposal. Waste diversion is any activity that reduces the quantity of material hauled to landfills for disposal. A higher diversion rate means less waste going to landfill. The City's vision for the SWMMP update is to continue to be a leader in municipal waste management.

1.1 Advancing the Circular Economy and Our Food Future

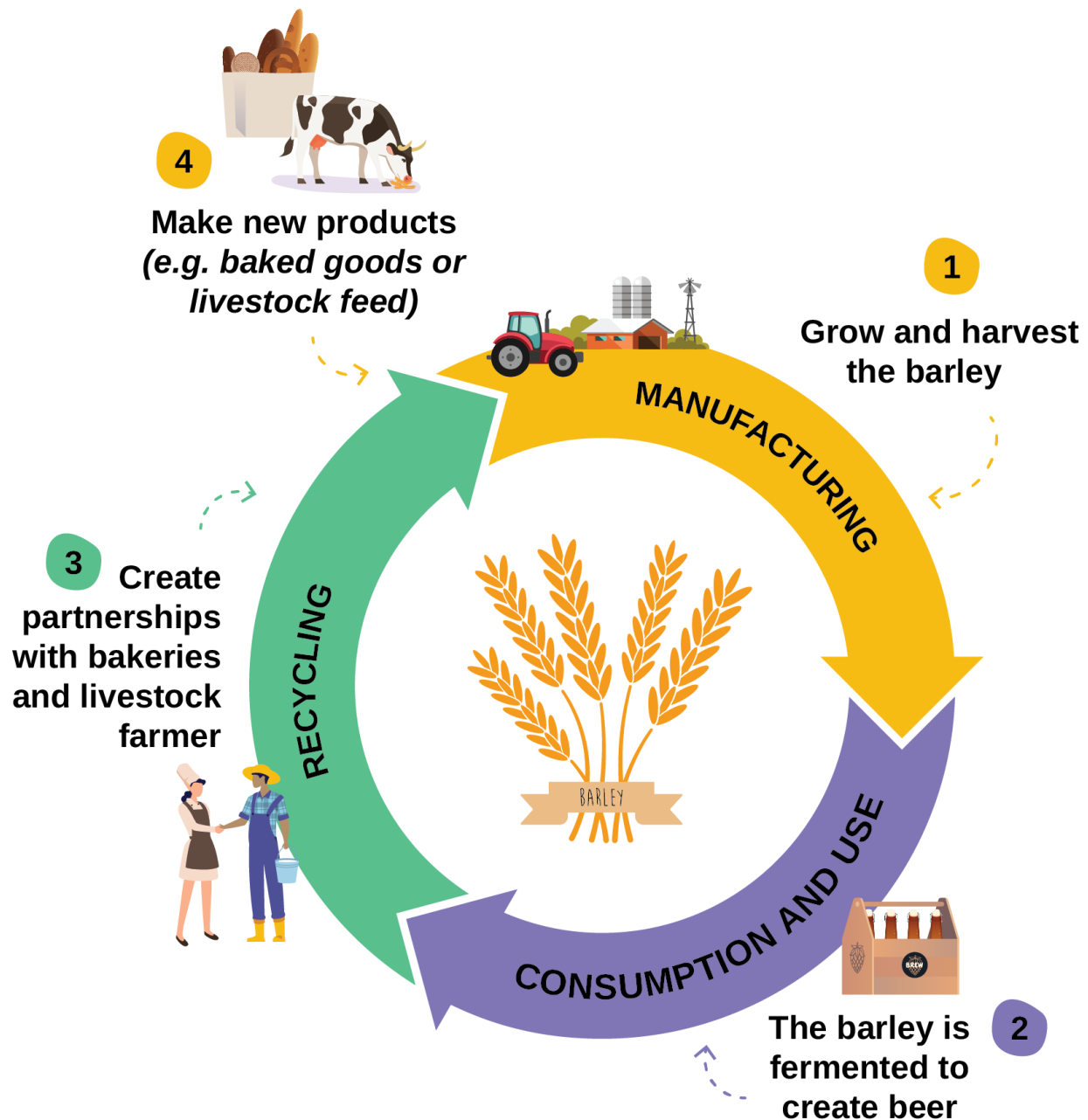
A key finding coming out of the City's SWMMP Update has been the emergence and growing community interest to move towards a circular economy. This recognition highlights the importance for the City to prioritize and adopt a circular economy framework to further the City's aspiration towards zero waste goals.

The current linear 'take-make-dispose' pattern, in which resources are extracted, made into products that are used for a short period of time, and then disposed – pays insufficient attention to the high social, environmental, and economic costs of waste. The circular economy seeks to extract the maximum value from resources in use and keeps materials in circulation for as long as possible.

Cities are well poised to serve as catalysts, enablers and leaders in the circular economy as they possess a unique complement of leverage points. A circular city embeds the principles of a circular economy across all its functions, establishing an urban system that is regenerative, accessible and abundant by design. These cities aim to eliminate the concept of waste, keep assets at their highest value at all times, and are enabled by digital technology. **Figure 1** provides an example of what a circular economy could look like.

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Figure 1: Sample Circular Economy Opportunity



Transition to a circular economy would provide Guelph opportunities to:

- enhance social and environmental outcomes;
- improve economic performance and profitability;
- decrease the risk associated with relying on external sources of raw materials and labour; and,
- increase the resilience of City services and infrastructure.

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Developing a comprehensive framework to guide the City of Guelph towards a circular economy is key. The SWMMP was developed with this in mind and supports the implementation of the approach, through recommendations presented in **Section 9.3** of this report, which include:

- Implement the City's Circular Economy Framework and Policy
- Support organizations and businesses in identifying waste exchange opportunities
- Establish a Circular Economy / Zero Waste Committee
- Attract Circular Economy Businesses

In addition, the City of Guelph and County of Wellington (Guelph-Wellington) have embarked on an ambitious journey to create a local circular food economy. As part of the SWMMP, Dillon, in partnership with Metabolic and Dr. Michael von Massow from the University of Guelph, completed a Material Flow Analysis to assess the current status of organic 'waste' flows in terms of consumption and production of food. **Section 8.0** provides an overview of the Our Food Future project and next steps.

1.2 Solid Waste Management Master Plan Update

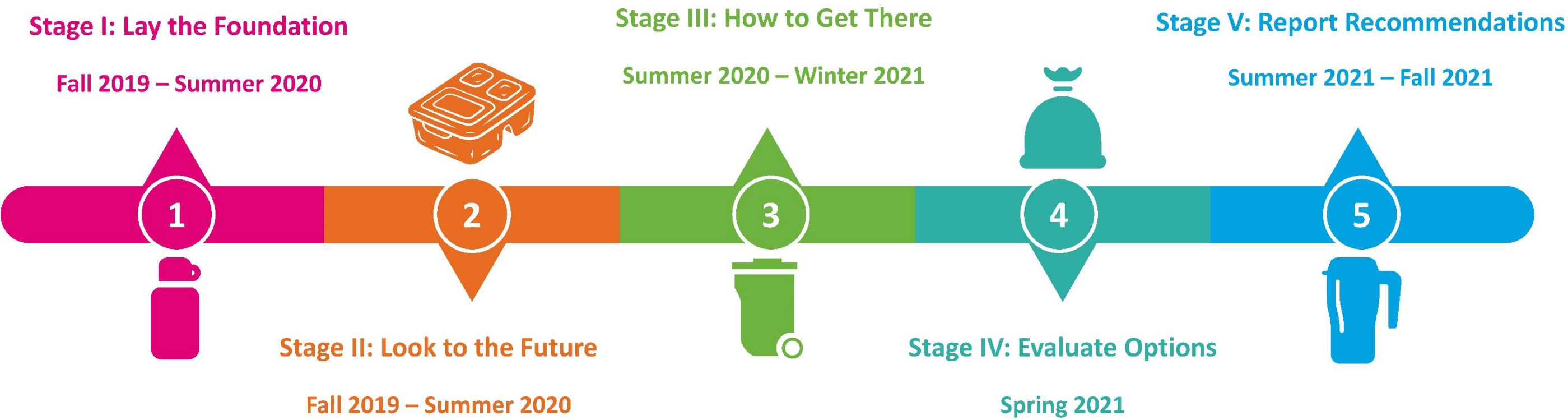
The City of Guelph (City) has updated its 2014 SWMMP, exploring new and innovative ways to support the waste management needs of Guelph's growing community. As part of the SWMMP Update the City considered how new approaches to managing waste and consumer trends will shape the future of waste management in Guelph, and how the City can improve Guelph's current system for a more sustainable future.

The project included the following elements:

- Conduct best practices research on a regional, national and international levels
- Review pending provincial and federal legislative changes and actions on waste management
- Involve the University of Guelph's Ideas Congress (ICON) and other City departments to reduce/eliminate single-use items

The SWMMP Update (**Figure 2**) began in the fall of 2019 and was completed in late 2021.

Figure 2: SWMMP Process Diagram



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The following tasks were completed as part of the SWMMP Update:

Final Report: This Final Report includes a high-level summary of all the sub-reports listed below.

Current State: Provides an overview of current solid waste programs and services within the City of Guelph, as well as waste diversion performance and benchmarking against comparator municipalities, establishing a baseline for the SWMMP.

Single-Use Items Strategy: This sub-report was prepared in response to a Council directive to work with internal City departments and partner with the University of Guelph's Idea Congress (ICON) program to explore viable options to reduce and/or eliminate single-use items. This sub-report includes research on local and other Canadian municipal actions towards reducing/eliminating single-use items, a review of provincial and federal government actions on the topic, learnings from the ICON program, as well as international and local best practices that may be applicable to Guelph.

Future State and Growth: The sub-report provides a long-term forecasting model to identify growth impacts across all waste service elements, including future needs and potential changes and issues facing the waste management industry over the next 20 years.

Opportunities and Options: With a focus on ways to enhance the City's solid waste management system, this sub-report provides an overview of how the options were developed, a description of the options and the evaluation and scoring methodology and results.

IC&I Collection Service Standards: Compares the levels of waste collection service standards for industrial, commercial and institutional (IC&I) establishments in Guelph to other comparable municipalities, considering service levels, cost of service, criteria used to determine eligibility, and how the programs are funded (e.g., user pay).

Financial Options: The sub-report analyses the current state of the City's solid waste services costs through the development of a model to estimate the current cost of service. Research was undertaken to identify ways the City can fund solid waste services including user rates to align with the recommendations from the Corporate Service Rationalization Review.

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Downtown Services Review: Provides an overview of the current waste collection services in Guelph's downtown in terms of waste collection services for businesses and the use of public space containers and options to increase efficiencies.

Engagement Report: Documents the extensive public and stakeholder engagement program carried out over the course of the SWMMP project.

2.0 How We Engaged

2.1 Engagement Goals and Objectives

The SWMMP provides strategic direction for managing the City's waste over the next 20 years. Ongoing communication and engagement played a key part in promoting a comprehensive SWMMP Update that is reflective of Guelph residents, businesses, City staff, and key stakeholders.

The engagement program for the SWMMP Update was designed to meet the following set of goals and objectives that were established early on in the project:

- Build on what we know
- Be inclusive
- Educate and build awareness
- Effectively communicate technical information
- Engage early and often
- Garner buy-in
- Be transparent
- Strive for a zero waste engagement process

2.2 COVID-19 Pandemic

In March 2020, the World Health Organization declared the global coronavirus COVID-19 outbreak a pandemic. At this time, the City was in Phase 1 of the project. In spring / summer 2020 the project was paused to acknowledge the City of Guelph's emergency response to the pandemic and that community members were adapting to a rapidly changing situation. In order to continue community engagement for this project while protecting the health and safety of the public and project team, the community engagement program was adapted to provide online engagement opportunities.

The engagement strategy in **Section 11.0** details the tactics used to engage with the general public and stakeholders before and during the pandemic.

2.3 How Feedback was Used

The public and stakeholder consultation and engagement process was important throughout the SWMMP Update because the plan provides strategic direction for managing the City's waste over the next 20 years. The SWMMP Update included opportunities throughout for the public and stakeholders to provide input on the overall waste management system, the options for improvement and/or enhancement, and priorities for implementation. Public and stakeholder feedback received throughout the engagement process was integrated into the technical process at every step.

The engagement timeline commenced at the launch event in the fall of 2019. A Technical Advisory Committee (TAC) and a Public Advisory Committee (PAC) were created to generate ideas for further engagement. A Downtown Stakeholder Group (DSG) was also established at the beginning of the project. However, due to COVID-19, engagement with the DSG has been postponed and will continue post the SWMMP Update.

Virtual public open houses and two online surveys were created to further engage with the broader public. Interviews and Issues Workshops were also held with stakeholders and members from the community to expand on key issues we have heard throughout the engagement process. Summaries of the feedback received have been included throughout this report where applicable.

3.0 Current State

3.1 Overview

The City has developed a strong integrated waste management system offering a wide range of waste diversion services to the community. As defined in **Section 1.0**, waste diversion is any activity that reduces the quantity of material hauled to landfills for disposal. A higher diversion rate means less waste going to landfill. Examples of City-wide waste diversion efforts include the following:

- Goods Exchange Weekend
- Grasscycling and Healthy Landscapes
- Bike ReCycle Program
- Paint-Plus Reuse Program
- Waste Diversion Education Centre
- Electronics Recycling Program
- Blue and Green Cart and Yard Waste (YW) Collection Programs

Each household in Guelph produces about 283 kg of garbage each year. Guelph is part of the Cities Race to Zero campaign which involves setting targets on reducing the amount of garbage sent to landfill. Besides participating in the green and blue cart recycling programs, everyone has a role to play to further reduce the amount of garbage they produce by **avoiding** waste (e.g., purchasing items with less/no packaging, reducing food waste) and **reusing** materials (e.g., buying second hand and donating/selling gently used goods). This aligns with the waste hierarchy (see **Figure 3**) that prioritizes waste reduction and places disposal as the least preferred waste management approach.

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Figure 3: Waste Hierarchy



Source: National Association of Charitable Recycling Organisations Inc.

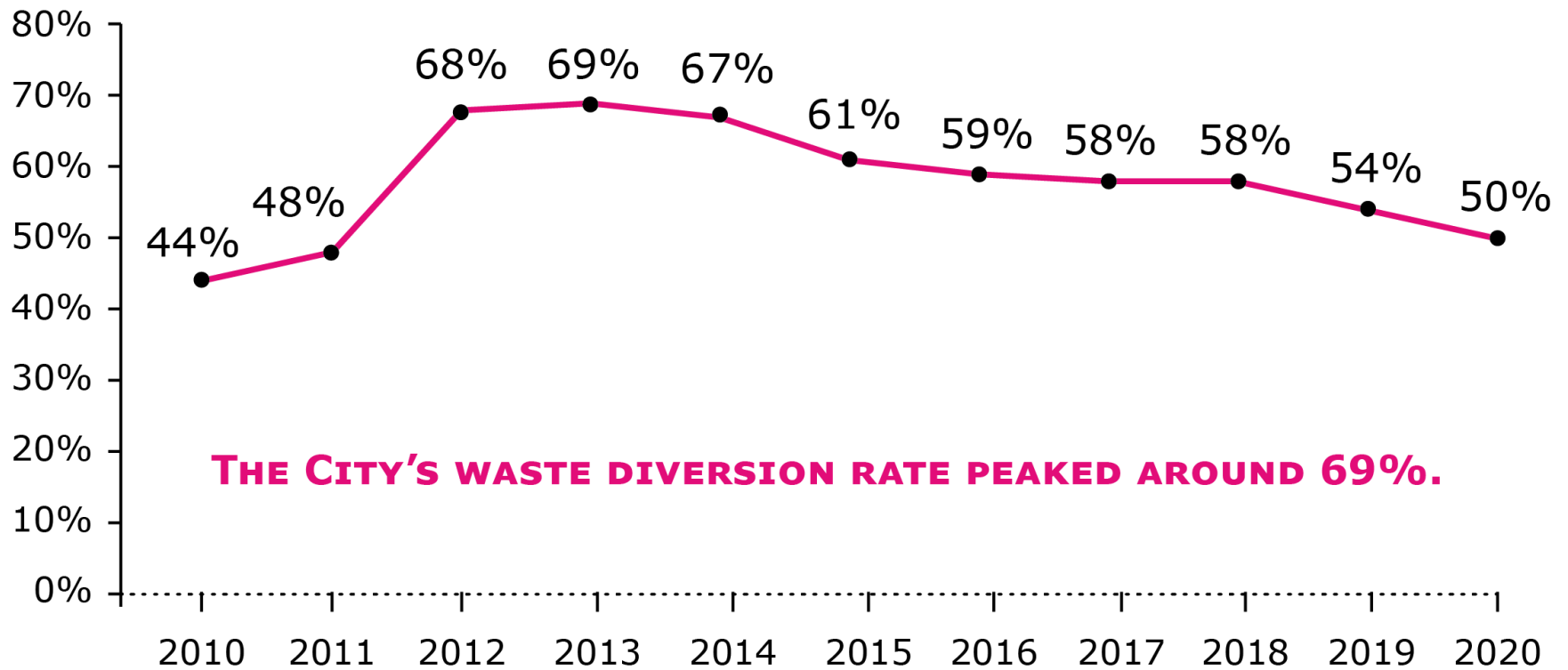
In the City's 2008 SWMMP and reconfirmed in the 2014 SWMMP review, there were three waste diversion targets set:

- 55% by 2011
- 65% by 2016
- 70% by 2021

Figure 4 below provides an overview of Guelph's historical diversion rate.

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Figure 4: Historical Diversion Rate (2010 – 2020)



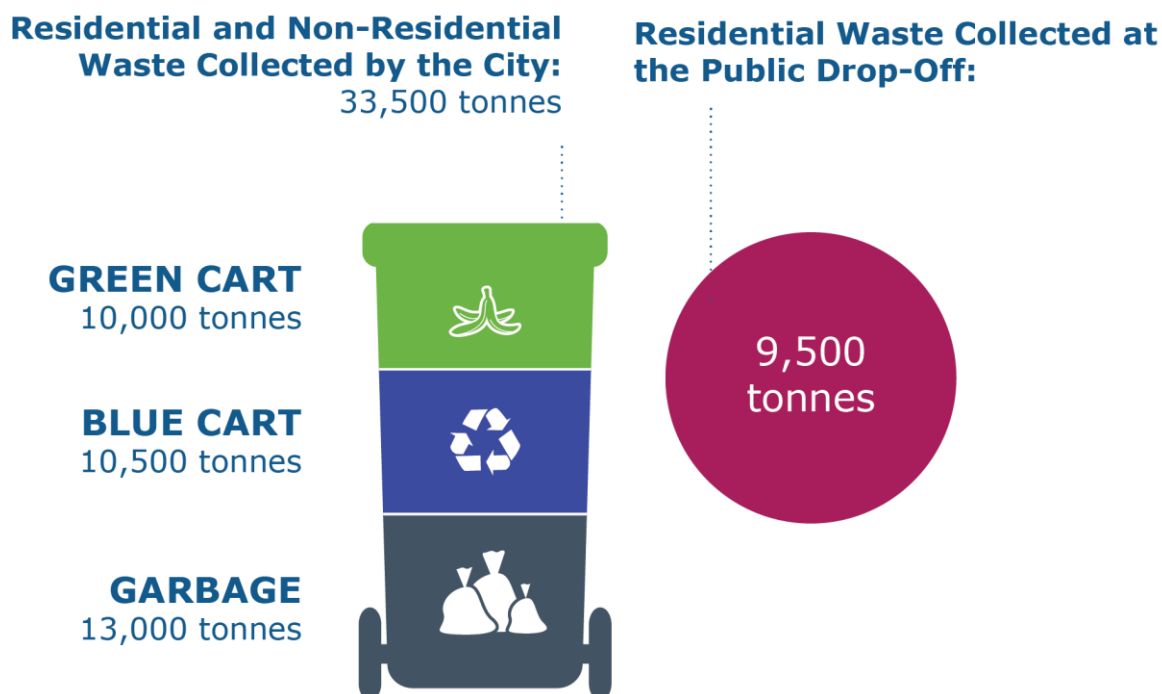
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As shown in **Figure 4**, Guelph was close to achieving its top goal of 70% diversion by 2021 in 2013. However, the City has seen a decrease in its diversion rate over the past decade. Waste diversion is based on the weight of materials collected for diversion and disposal. The weight of products and packaging is decreasing (e.g., less glass products and lighter plastic products) which could be contributing to a decreasing waste diversion rate. Based on waste audit data, an increase in improper sorting of waste by residents also has impacted Guelph's diversion rate.

Notably, 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. The audit noted that all sectors had strong diversion practices. However, the garbage stream audit results showed that over 60% of what was placed in the garbage could have been diverted through the green and blue cart collection programs. This demonstrates that there is still great potential to divert more waste from landfill.

Figure 5 below provides an overview of the residential and non-residential waste collected by the City and the amount of residential waste dropped off at the Public-Drop Off (PDO).

Figure 5: Average Annual Waste Collected



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The following sub-sections provide an overview of the City's existing waste management collection programs, facilities, and promotion and education initiatives. Please refer to the Current State Report in **Appendix A** for additional information.

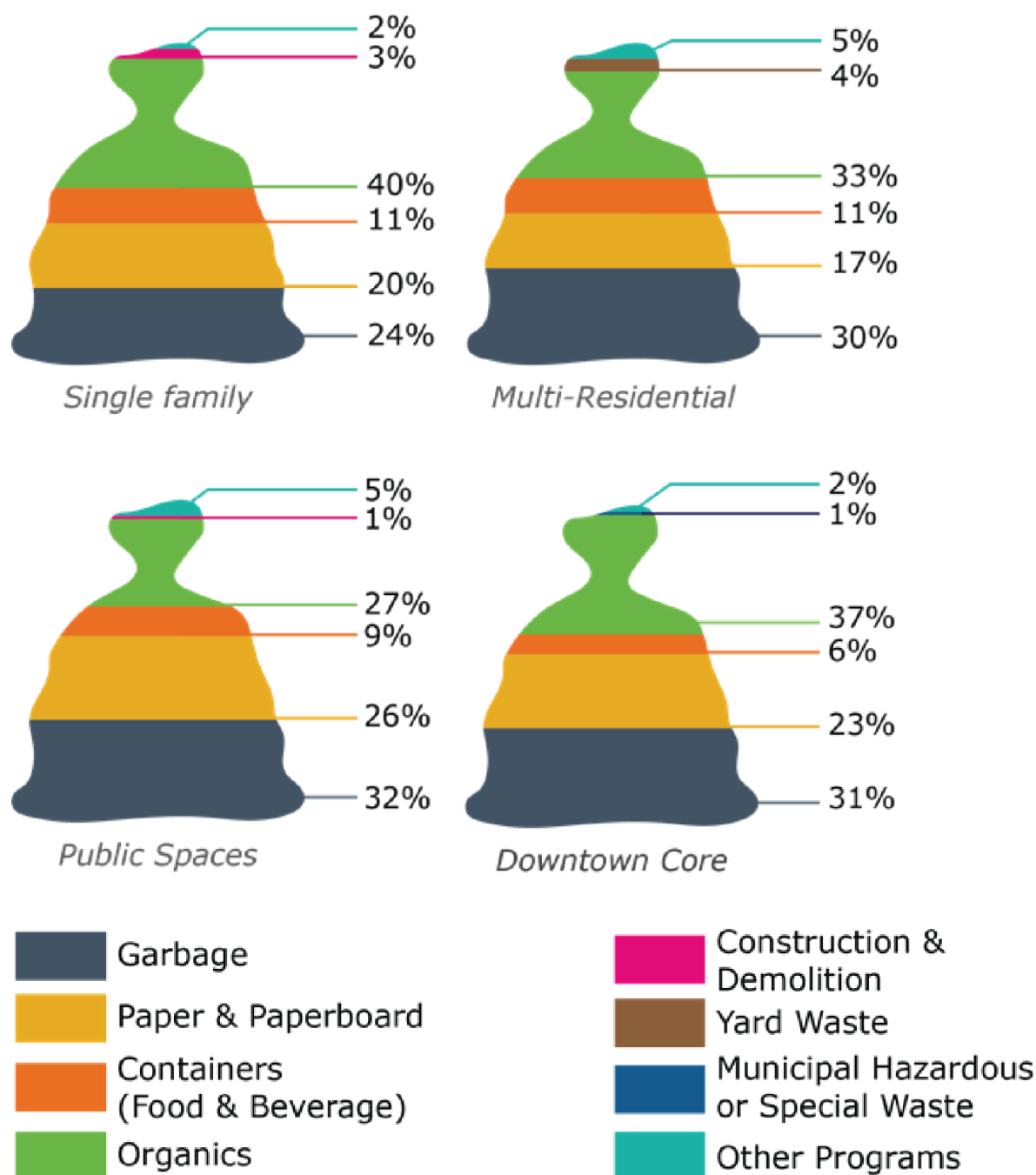
3.1.1 Waste Management Collection Programs

The City has well established curbside collection programs for residential, multi-residential and downtown customers. All materials collected are delivered to the Waste Resource Innovation Centre (WRIC) discussed further in **Section 3.1.2**. Waste composition studies were completed to see if users were participating and sorting effectively in the collection programs. **Figure 6** provides an illustration of the waste composition study results for single-family, multi-residential, public space, and the Downtown Core garbage. These results indicate that over 60% of the materials, by weight, could have been diverted in the green and blue cart collection programs.

Additional information on the City's programs is provided in the sub-sections below.

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Figure 6: Overview of What's in our Garbage Carts



3.1.1.1 Residential Customers

The City of Guelph's residential waste management system has operated as a three-stream automatic cart-based program since 2012 for residents living in single family homes and has phased in two-stream front end collection for

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multi-residential properties. Residents have the choice of one size (80 L) for the green (organics) cart and two sizes (120 L and 240 L) for their blue (recycling) and grey (garbage) carts. Additional carts can be purchased for an additional fee.

A curbside collection program for yard waste was introduced in 2021 and collection is provided every other week through the fall. Yard waste can also be dropped off at the PDO year round. Grass clippings are not accepted in the green cart or yard waste collection programs to encourage grass-cycling and leaving clippings on the lawn after mowing.

The City currently services about 30,860 single-family customers and 19,750 multi-residential customers with garbage, recycling and organic collection services.



3.1.1.2 Downtown Core Customers

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.

Downtown properties have a number of flexible, three-stream waste collection options that best suit their needs. For locations that choose not to use carts, they have 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.

3.1.2 Waste Management Facilities

The Waste Resource Innovation Centre (WRIC), located at 110 Dunlop Drive in the southeast part of Guelph, receives all wastes managed by the City, including waste collected by the City, and provides residents with a place to

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bring curbside collected materials plus other items such as household hazardous waste. Commercial customers are also permitted to use the WRIC. Fees are applied depending on the type of waste.

Within the WRIC is the Administration building, weigh scale operations, Materials Recovery Facility (MRF), Organics Waste Processing Facility (OWPF), Public Drop-off Area (PDO), Municipal Hazardous and Special Waste (MHSW) Depot and Transfer Station. **Figure 7** provides an overview of the layout of the current WRIC.

Waste materials are received at the site at designated gates from curbside collection, general public and commercial vehicles. Blue cart recyclables are processed at the MRF, green cart organics are processed at the OWPF and grey cart garbage is received at the Transfer Station and then transported and disposed at Waste Management Inc.'s landfill located two hours southwest of Guelph. All other materials are transferred either to processing facilities for other recyclable or compostable materials or the landfill for garbage.

Figure 7: Current Layout of Guelph’s Waste Resource Innovation Centre



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In 2019, the WRIC received a total of 104,206 tonnes of material at the various facilities. Below is a breakdown of the total incoming tonnages per facility at the WRIC.

- 53,000 tonnes at the Transfer Station
- 20,3000 tonnes at the Materials Recovery Facility / Public Drop-Off Facility
- 30,900 tonnes at the Organics Waste Processing Facility

3.1.3 Promotion, Education and Outreach

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 of Guelph uses different tools and tactics to promote services and programs and to educate the public about how to reduce, reuse, recycle and/or dispose of waste in the city. Examples of current promotion, education and outreach initiatives include:

- Waste Wizard online search tool
- Collection calendar
- Waste Carts User Guides
- Free Guelph Waste App (Re-Collect)
- Other media such as print and radio ads and social media

In addition, the City requires event organizers to apply for a special events permit. The City has the Waste Diversion Education Centre which is located at the OWPF 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.

4.0 Future State

4.1 Overview

Guelph's population is expected to grow from 138,700 people in 2019 to 165,000 by 2031.¹ To accommodate the population growth, the City's high density housing stock (multi-residential) is anticipated to increase to 30% by 2031, up from 11% in 2011. The population growth will result in an increase in the amount of waste generated from 48,200 tonnes in 2019 to a projected 58,000 tonnes in 2031.

Based on internal data by the City, approximately 3,000 new households trigger the need for one new collection truck and driver. Additionally, city growth has an impact on other elements of waste services, such as organics processing, Public Drop-Off (PDO) use or residual waste disposal. For waste management in Guelph this means thinking about questions such as:

- How many new collection trucks and drivers may be needed?
- ²Given Guelph's landfill disposal contract with Waste Management Inc. expires in 2023, how will the City manage its garbage?
- What will be the impacts of the Blue Box Transition to individual producer responsibility?

In addition, Ontario has limited disposal capacity which is expected to be depleted by 2036. Future landfill capacity will be affected by:

- Impacts of emerging provincial policies such the Waste-Free Ontario Act/Circular Economy, Food and Organic Waste Framework, Blue Box Program, among others.
- Approval of new or expanded landfill capacity.
- Ability to meet diversion rate targets.
- Availability of disposal options in the United States.

¹ Please note that the report was written in 2020 and finalized in 2021. Some of the data, such as population projections and tonnage information is based on information available at the time of writing the report. Any modeling generated by the SWMMP is able to accommodate revised projections.

²

4.2 Long-Term Tonnage Forecasts

For the City to identify growth impacts and address future waste needs, a forecast of the anticipated tonnage by waste stream is required. The tonnage forecast was developed for the current waste management system based on discussions with staff and analysis of the historical tonnage information for the four WRIC facilities of OWPF, Transfer Station, MRF/PDO and MHSW (monthly and annual totals) from 2012 to 2019. These quantities formed the basis for generating an annual per capita rate for the various materials. **Table 1** provides an overview of the incoming (as collected) and outgoing (after processing or receipt) tonnage forecast for the year 2020 and 2041.

It is noted that Waterloo Region sends 20,000 tonnes of organic waste to the OWPF and is assumed to continue doing so throughout the planning period. The responsibility of the Blue Box program will switch from municipalities to producers as of January 1, 2025 for the City of Guelph.

Table 1: Incoming and Outgoing Tonnage Forecast

Location	Incoming Tonnage: 2020	Outgoing Tonnage: 2020	Incoming Tonnage: 2041	Outgoing Tonnage: 2041
Organic Waste Processing Facility (OWPF)	31,000	8,500	34,300	9,500
Transfer Station	53,000	53,600	69,200	70,100
Material Recovery Facility (MRF)	12,200	11,600	16,000	15,200
Public Drop-off (PDO)	12,000	11,600	15,700	15,200

In addition to the information presented in **Table 1**, the MHSW depot materials have been forecasted using the average per capita amount for each material from 2017 to 2019 which have been applied to the anticipated population in each year out to 2041. The customer count at the MHSW depot is anticipated to be about 760 in 2020 and is anticipated to grow to an annual customer count of 1,000 by 2041. Most of the source separated

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materials accepted at the depot that have existing diversion programs, with the exception of construction and demolition materials, are included in the current provincial IPR program.

The City is currently in a contract with Waste Management Inc. to haul and dispose of residual waste until 2023 with options to extend up to 2033. Although Guelph has a number of waste diversion programs in place, having sufficient long term disposal capacity is a core requirement of a municipal waste system.

4.2.1 Legislative and Regulatory Changes

The past five years have been a period of significant policy, program and legislative development across Canada in the solid waste area in general, and waste reduction and waste diversion in particular.

At a federal level, the Government of Canada is tackling the issue of plastic waste both through the Canadian Council of Ministers of the Environment and independently through Environment and Climate Change Canada (ECCC). In June 2019, Prime Minister Trudeau announced plans for European Union level action on waste plastics, singling out single-use plastics (SUIs). The following year in October 2020, ECCC announced the next steps in the Government of Canada's plan to achieve zero plastic waste by 2030.

At a provincial level, the Government of Ontario has been active on the waste legislation front with the passage of the **Waste-Free Ontario Act** in 2016. Ontario was one of the first provinces to begin framing its future waste policies and programs through the lens of circular economy thinking. The two provincial documents guiding waste legislation and resulting policies and programs are the Strategy for a Waste Free Ontario and the province's Made-in-Ontario Environment Plan. The three main areas of attention include:

- Extended Producer Responsibility (EPR), with a specific focus on Individual Producer Responsibility (IPR), as compared to collective responsibility programs for an increased range of materials;
- Increased food and organic waste diversion and reduction (in part driven by greenhouse gas emission concerns); and

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- Plastic waste diversion and reduction, with a growing interest in single-use plastics, litter and plastic microbead pollution.

With IPR programs transitioning into effect in Ontario, decisions need to be made by municipalities like the City of Guelph, regarding long-term roles and responsibilities in future waste management and waste diversion and reduction programs.

4.2.2 Emerging Trends

In addition to Guelph's waste management capacity and legislative and regularity changes, a variety of emerging trends will have to be considered to guide the City in their waste management goals and objectives for the next 20 years.

Some of these emerging trends and potential issues facing the waste management industry include the following and are highlighted throughout this report:

- Adapt to a Circular Economy;
- Reduce and divert more organic waste from disposal;
- Responsibility of the blue cart program switching from the City to producers of products and packaging;
- Manage the increase in single-use items, plastic and 'compostable' products;
- Adapt to changes in the way people learn how to properly participate in waste diversion programs;
- Embrace new technology like artificial intelligence;
- Manage disruptive and problematic materials; and
- How to effectively measure performance.

As of January 1, 2025, the City will no longer be responsible to manage blue box material under the Blue Box Regulation. A Blue Box Transition Strategy was developed for the City as part of the SWMMP Update to assess the implications on the City's integrated waste management system when responsibilities for blue box services transitions from municipalities to producers through IPR. The Blue Box Transition Strategy provides a tool to assess the impacts on the rest of the City's solid waste management system

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and projected cost savings as a result of the IPR transition based on the tonnage and financial models.

For planning purposes, five potential “future state” scenarios were considered:

- A. No Role for City in Future Collection and Processing of Blue Box Materials
- B. Providing Limited Services (service non-eligible sources)
- C. Providing Collection Services Only
- D. Providing Collection and Transfer Services
- E. Providing Collection and Processing Services

Please refer to the Future State Report in **Appendix B** for a detailed discussion on these emerging trends.

4.2.3 Strategies and Initiatives by the City

Future waste management considerations also need to support other City of Guelph's strategies and initiatives such as:

- Development and support of circular economy principles that will support the Economic Development and Tourism Strategy by attracting investments in circular businesses that create jobs.
- Engaging in a circular economy to support the Corporate 100RE and Community Net Zero Carbon targets.
 - The City will need to continue to monitor developments related to enhanced energy efficiency such as the electrification of fleet vehicles. Decarbonization of the transportation sector is fast evolving. The City is currently in the pilot stages of their Guelph Transit 40 ft bus electrification initiative and learnings from this initiative are to be applied as the zero or low emissions for the solid waste collection vehicle market evolves.
 - Investigation into upgrading the existing composting facility to an anaerobic digestion (A D) facility is underway through the City Operations Campus site plan design. A D at the Waste Resource Innovation Centre is well positioned to supply renewable electricity and thermal energy to the proposed adjacent City Operations Campus. Wastewater Services has operated and maintained an AD

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system that recovers biogas and has plans to expand the system in the medium term. Opportunities exist for these two sites to coordinate initiatives.

4.3 Recommendations

Based on the information presented above, the following recommendations to address Guelph's long term disposal needs, transition of the blue box program to individual producer responsibility and emerging issues are put forward as part of the SWMMP Update.

Residual Waste Management:

- Explore approaches to identify alternatives to landfilling (e.g., feasibility study, request expressions of interest to provide alternative disposal capacity).

Blue Box Transition:

- Implement the Blue Box Transition Strategy. The City continues to monitor developments to the Blue Box Regulation as details are made available and use the Blue Box Transition Strategy tool and financial model, if applicable, to evaluate the viability of providing services as a contractor to a Producer Responsibility Organization (PRO) in the new system and / or to determine the feasibility, costs and diversion impacts of providing services to non-eligible customers (IC&I, downtown).

Emerging Issues

- Update the SWMMP. With the anticipated major changes and issues facing waste management within the City, province and country, it is recommended that the City monitor progress and update the SWMMP every five years.

5.0 Single-Use Items

5.1 Overview

Single-use items (SUIs) are products made wholly or partly from plastics, and are designed to be used once before being thrown away (e.g., utensils, straws, grocery bags, coffee cups, foam takeout containers).

In 2019, Guelph City Council directed staff to develop a strategy for the elimination and/or reduction of single use plastics, also referred to as SUIs, as part of the SWMMP Update. The directive included to partner with the University of Guelph's ICON program to explore feasible solutions to reduce SUIs. In addition, staff were asked to consider the following as part of the SWMMP process:

- Investigate any required changes to the current agreements between the City and/or vendors/leaseholders resulting from the sale of single use plastics.
- Facilitate further engagement internally on reducing or eliminating single use plastics through the SWMMP process.
- Explore the issue of single-use plastics and packaging as an opportunity to leverage the Civic Accelerator, to help realize further options to reduce waste in the City of Guelph.

Regarding investigations of required changes to the current agreements between the City and/or vendors/leaseholders resulting from the sale of SUIs, the elimination of SUI bottles would have a financial impact on sponsorship and volume purchase price. The impact of the pandemic, however, has delayed staff's ability to research vendor options. Current priorities, namely the City's COVID response, will add more packaging options to facility sales as single serve packaging and bottles reduce touch points and speed service to reduce lineups. Once pandemic related concerns about contact and touch-points abate, the City will begin to review options on the elimination of SUIs, which could also result in conducting pilot programs.

After reviewing the federal consultation documentation in late 2020 regarding SUIs, it became apparent that the solutions to this problem, from a municipal perspective, are largely policy related and highly dependent on

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federal and provincial direction. Therefore, the use of the Civic Accelerator was not carried forward for the SUIs issue and the City began an innovation challenge using the accelerator model to look at reducing food waste through the utilization of better data gathered by the carts.

The SWMMP Update reviewed international, federal, and provincial trends and actions; carried out a municipal best practices review; and partnered with the University of Guelph's ICON program to consider lessons learned and innovative ways to tackle SUIs.

Based on the research findings, some local governments, progressive large retailers, local small businesses, and many residents are generally supportive of moving forward with actions on SUIs. At a government level, PEI, Newfoundland and Nova Scotia have recently passed legislation banning SUI carryout bags. At a municipal level (e.g., City of Vancouver), the most commonly targeted SUIs are: plastic and paper bags; plastic straws; hot and cold drink cups; polystyrene takeout containers and cups; eating utensils and plastic water bottles. Please see **Appendix B** for a more detailed overview of the research findings.

A key stakeholder group is the plastic producers, such as the Plastic Lobby Group, Unilever, and the Canada Plastic Pact (CCP). Generally, these plastic producers are supportive of reusing, recycling or recovering plastic packaging. CCP specifically is working towards creating a circular economy in Canada in which plastic waste is kept in the economy and out of the environment.

Stakeholders who are generally less supportive include plastic industry lobbyists and some local business and residents. Reasons given for not being as supportive include perceived challenges with transition from SUIs to alternatives.

There was a pause in the push towards using less and/or eliminating SUIs as a result of the COVID-19 pandemic that halted the use of reusable products like travel mugs, shopping bags and takeout containers in March 2020. However, it is important to recognize that both federal and Ontario governments are concurrently considering SUI legislation that, if enacted, would impact any actions undertaken by the City. In addition, any short-term measures taken on SUIs also needs to take into account the long-term circular economy considerations. Over the long term, the goal for a truly

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circular economy is to make plastics strictly from renewable plant-based sources.

The City of Guelph has been engaged with the Ministry of the Environment, Conservation and Parks (MECP) to help chart a course for how to deal with compostable products and packaging that are placed into the marketplace. The City and its operator (AIM Environmental) has helped the MECP with designing a testing procedure within an aerobic composting setting and has provided the use of its facility to undertake testing of certain products and packaging. The City will continue to advocate for environmentally sustainable products, policies and management approaches.

5.2 Feedback from Engagement Activities

The City worked with two consecutive classes from the University of Guelph's ICON program that undertook research on specific areas of interest between September 2019 and March 2020 although the second class was not able to complete the assignment due to COVID-19.

Feedback on the issue of SUIs and the options to reduce or eliminate them was solicited through Surveys #1 and #2, PAC and TAC meetings, an Issue Workshop with key stakeholders, consultation with City staff, and a survey targeted at businesses. The surveys included questions on perceptions of SUIs before and during the global pandemic. Overall, there was strong support for reducing or eliminating SUIs in Guelph.

5.2.1 What We Heard

- Target producers, particularly big producers
- Incentivize change (e.g., give discounts for using reusable cups)
- Educate
- Consider an equity approach to fees, don't punish those who can't afford it
- Consider accessibility needs related to items such as the need to use plastic straws
- Support the reuse of single-use items, such as take out containers that can be returned and then reused
- The City should work to improve the recycling of plastics
- Guelph should be a leader in reducing SUIs

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- Some respondents don't see paper bags as an issue and therefore it shouldn't be a material to reduce
- Allow compostable plastics in the municipal compost system
- Continue to engage residents and businesses through implementation
- Consider the impact COVID has had on the increased use of SUIs
- Businesses have been hit hard from COVID-19, help them navigate these changes

5.3 Recommendations

Based on the information presented above, it is recommended to put forward a phased approach to support the reduction and elimination of single-use items as follows.

5.3.1 Phase 1: Ban the most problematic materials

- Plastic shopping bags (including non-certified compostable bags and biodegradable bags, certified compostable bags would be exempt)
- Foam cups and takeout containers
- Plastic straws (available on demand for accessibility purposes, and exempt from the ban in places like hospitals)

5.3.2 Phase 2: Apply the following additional requirements

- Apply fee of at least \$1 for reusable bags in Year 1 and increase fee after and work with the community to ensure no impediments to access reusable bags (e.g., Bag Banks)
- Require minimum 40% recycled content for paper bags
- Fee of at least \$0.25 for disposable cups which is shown on receipts and menus
- Offer single-use utensils by request only

It should be noted that the MECP released its final Blue Box Regulation in June 2021. The Blue Box Regulation is making producers individually and fully responsible for the management of their paper products and packaging (PPP) in the Blue Box and other management systems. The ban of SUIs is further supported by federal actions, such as the zero plastic waste plan and expanding the List of Toxic Substances with respect to plastics.

Please refer to the SUI Report in **Appendix B** for additional information.

6.0 Industrial, Commercial and Institutional (IC&I) Waste

6.1 Overview

The City of Guelph currently offers garbage, recycling and organics collection services to some small commercial businesses, places of worship, non-profit organizations and daycares if they generate small quantities and are located on a residential route. The City also provides services to some businesses located in strip malls or will collect green and blue cart waste from industrial establishment offices and cafeterias that have been historically serviced. The SWMMP looked at establishing eligibility criteria for the City's non-residential customers.

In general, the provision of municipal waste services to IC&I establishments has not been considered a responsibility of Ontario municipalities. As a result, municipalities in Ontario and Canada have adopted a "hands off" waste management approach as they consider IC&I waste to be adequately managed by private sector waste service providers.

While the City of Guelph provides collection service to some IC&I establishments that have historically received service, the absence of criteria has resulted in an approach that can be questioned in terms of transparency and fairness.

Future changes to provincial regulations and policies will require the IC&I sector to engage and achieve more aggressive waste diversion activities, however, it is not anticipated that municipalities will be under any obligation to provide waste services to IC&I establishments. Given this direction, it is timely and necessary for the City of Guelph to develop eligibility criteria related to servicing IC&I customers, and potential funding models. Please see **Section 10.0** of this report for an overview of funding waste management services and program.

As part of the SWMMP Update a comprehensive questionnaire was developed with specific questions targeting the IC&I sectors which was completed by several municipalities. Questions centred on garbage and waste diversion

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services and funding of the service. In addition, a review of alternative waste management funding (e.g., Pay-As-You-Throw) options used by Canadian municipalities was completed.

6.2 Feedback from Engagement Activities

Options for the IC&I sector were engaged on through the PAC, TAC, Survey #2 and an Issues Workshop with key stakeholders. Overall, participants were supportive of the options for servicing IC&I establishments. Some concerns were heard over the City being in the commercial waste business.

6.2.1 What We Heard

- The industrial, commercial, and institutional sectors should be responsible for paying for the waste they produce
- Bringing industrial, commercial, and institutional sectors into the City system will help with overall diversion
- Brings more people into the City's solid waste system which will bring broader understanding of user needs and behaviours
- The City should anticipate that some institutions may not have full control over storing and how individuals sort their waste at the facility
- Important to bring small businesses into the City's service

6.3 Recommendations

Based on the information presented above, the following recommendations are put forward as part of the SWMMP Update relating to the proposed approach for waste collection in the IC&I sector.

6.3.1 Small Mixed Use Buildings

- Limit three stream collection services to small mixed use buildings (commercial with a residential component) provided they are:
 - located on a residential collection route;
 - generate waste that fits into residential set out limits (80L green, 240L and 360L for blue and grey cart volumes); and
 - complies with the waste bylaw to participate in all waste streams.

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6.3.2 Institutional Facilities

- Limit three stream collection services to some institutional facilities (e.g., places of worship, daycares, community centres) if they:
 - are located on a residential collection route;
 - generate waste that fits into residential set out limits; and
 - comply with the waste by-law to participate in all waste streams.
- The City will conduct a review of whether or not non-eligible establishments, as defined in the Blue Box Regulation, will continue to be serviced after the Blue Box transition in 2025.

6.3.3 Schools

- Introduce organics collection services to schools not currently receiving City service.
- Continue to provide Blue Box recycling services to schools that have been historically serviced, until transition to full extended producer responsibility in 2026 at which time all schools will fall under the Blue Box Regulation as an eligible source.

One of the first steps will be to inform non-eligible customers that they will no longer receive service.

7.0 Downtown Services Review

7.1 Overview

The City of Guelph offers six day a week waste collection services in the downtown core of green, blue and grey carts to all businesses and residents. Public space containers (PSCs) are also provided and used by both the general public and downtown businesses and residents. Please refer to **Section 3.1.1** for an overview of waste management services currently provided by the City in the downtown core.

The objective of the downtown services review was to identify the key waste management challenges experienced in the downtown core and identify viable solutions that meet the needs of impacted stakeholder groups. The following steps were taken to identify key challenges and solutions associated with the Downtown:

- Established a Downtown Stakeholder Group (DSG);
- Completed a comprehensive questionnaire with specific questions about the level of service provided to downtown areas or Business Improvement Areas (BIAs);
- Carried out research on five Ontario municipalities that are comparable to Guelph (City of Hamilton, City of Kingston, City of Ottawa, Halton Region and the Region of Waterloo);
- Reviewed alternative funding models (e.g., Pay-as-you-throw); and,
- Carried out a preliminary review of the public space containers in the Downtown.

Based on the steps identified above, some of the current challenges facing the downtown core include:

- Current collection system does not provide any financial incentives to reduce waste.
- Businesses and residences lack space to store carts on their premises.
- PSCs are used by pedestrians, businesses and residents which results in over-flowing containers.
- The mobile PSCs are being moved about and block accessibility to services.

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Based on the above, two recommendations, including a pilot program for downtown waste collection, were developed to address some of the waste management needs specific to the downtown core and are outlined in **Section 6.3** below.

It should be noted that originally the City had planned to generate waste collection services options for Guelph's Downtown based on extensive engagement with the DSG. However, engagement was put on hold in March of 2020 due to COVID-19 and the special challenges facing the downtown. It was decided to engage the downtown stakeholders at a more suitable time as part of the Downtown Infrastructure Revitalization Program which is set to launch in 2022. The Downtown Infrastructure Revitalization Program will provide additional opportunities to engage Downtown stakeholders, including the DSG.

7.2 Feedback from Engagement Activities

In the context of the SWMMP Update, feedback on the downtown core and the PSCs was mainly gathered through Survey #1. Overall, we heard that respondents were dissatisfied with the following elements of the PSCs: odour, appearance, and attraction of pests.

7.2.1 What We Heard

- Bins are often full and overflow
- Improve sorting for the Public Space Containers
- The Public Space Containers are not aesthetically pleasing

Staff from Economic Development and By-Law were also engaged on the Downtown Services Review. Overall, there was strong support from the By-Law and Economic Development stakeholders engaged in the SWMMP Update.

7.2.2 What We Heard

- There was a suggestion to speed up the process and do the pilot project next year with a few volunteer businesses
- Businesses see that the current system is not working and want a better alternative sooner

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- Businesses will see this as a service improvement and it will benefit guests to the downtown
- There is a desire to keep garbage off the streets of the downtown
- By-law should be consulted and engaged through the pilot to provide feedback, understand the process and determine enforcement measures

7.3 Recommendations

Based on the information presented above, the following recommendations are put forward as part of the SWMMP Update to address waste collection services in Downtown Guelph.

7.3.1 Downtown Waste Collection Service

- Conduct further engagement, as part of the Downtown Infrastructure Revitalization Program, for a potential pilot project where participating businesses and residents receive daily door-to-door collection system that will move materials to a central collection area for pick-up. Pilot door-to-door collection and use information to explore enforcement measures and alternative funding models.

7.3.2 Downtown Public Space Containers

- Permit the use of PSCs for pedestrians only. Consolidate PSCs and strategically place in permanent locations with colour coding to help reduce contamination and improve the quality/quantity of recyclable materials captured.

The COVID-19 pandemic has had a significant impact on the Downtown Services Review for the SWMMP. Therefore, based on the research completed to date and the feedback received from the TAC, DSG and other impacted stakeholder groups, it is recommended that the City conduct a pilot project to better understand the partnership arrangements with the Downtown Guelph Business Association (DGBA) and the costs to implement and manage the requirements for a centralized collection approach.

Through the pilot project, aspects of the centralized collection approach can be tested such as using yellow bags for garbage, separate collection systems for Blue Box recyclables and Green Bin organics, the collection equipment, and staffing. The pilot project would further evaluate cost effectiveness of

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waste collection in the downtown and work through operating issues and concerns specific to the downtown Guelph, as well as address future funding models.

The City will continue consultation on downtown waste collection beyond the initial presentations made to the Economic Development Advisory Committee (EDAC) and DGBA, as part of the Downtown Infrastructure Revitalization Program. The Downtown Infrastructure Revitalization Program will focus on underground and above ground distribution and space needs, with waste management being a key component to be considered.

8.0 Our Food Future

8.1 Overview

The City of Guelph and County of Wellington (Guelph-Wellington) have embarked on an ambitious journey to create a local circular food economy. As part of the SWMMP, Dillon, in partnership with Metabolic and Dr. Michael von Massow from the University of Guelph, completed a Material Flow Analysis to assess the current status of organic 'waste' flows in terms of consumption and production of food. Guelph-Wellington is striving to become a circular food economy with three bold goals:

- Increased access to affordable, nutritious food by 50%, where "waste" becomes a resource;
- Create 50 new circular businesses and collaborations; and
- Produce a 50% increase in circular economic benefit by unlocking the value of waste.

Waste as a Resource is one of three Our Food Future work streams that is striving to achieve the goal of 50% increase in economic benefit by unlocking the value of waste. Some of the potential outcomes of the work includes the following:

- Residential food waste audits and interventions
- Leverage Artificial Intelligence (AI) to enhance data access and availability
- Non-residential Sector Food Waste Collection Pilot Program
- Re-Purpose Food Loss Waste Prevention
- Circular Carbon Credits Challenge
- "Reimagine Food" awareness campaign to reduce household food waste

The study area, that includes the City of Guelph and the County of Wellington (County), has a combined population of close to 223,000 residents. The County is largely rural with most of the local food production evaluated for this work coming from the County. The primary cash crops include corn, wheat, and soybeans. For animal production, the main cash contributors are dairy, beef, poultry, and swine.

As part of the Our Food Future project, data was collected from each point along the food supply chain to develop an understanding of the flow of consumed, lost, and wasted food products.

8.2 Research Findings

A unique feature of the SWMMP Update was taking a regional view of our food system in support of developing a circular economy, which is among the first of its kind in Canada. One of the outcomes of the Material Flow Analysis was the Sankey diagram. **Figure 8** below, depicts the flow of food products from production to consumption, as well as where loss is occurring.

This analysis revealed that some specific food categories warrant deeper investigation such as farm fruit losses before manufacturing or losses of cereals at the processing stage. The volumes of food loss and waste by product varied, but storage and packaging represented the largest area of loss. This was particularly true for fruit and vegetables, likely due to their vulnerability to damage when handled as well as their relatively short shelf-life. This area of the supply chain provides opportunity for further investigations through targeted case studies, to identifying mechanisms for food loss reduction that would provide a larger impact compared to other points of intervention in the supply chain. Lastly, it is important to note that when high impact foods are wasted, so are the emissions and other impacts they produced.



8.3 Feedback from Engagement Activities

An advisory panel was convened to review the findings of this work and to collect feedback to direct the future steps of the analysis. The advisory panel included subject matter experts from across Canada and the world.

The majority of the feedback focused on the information presented in the Sankey diagrams above and considerations on next steps. Feedback from this panel was incorporated into the larger report for this work as well as into the planning for the next stage of work.

8.4 Path Forward

The results found in this analysis will be used to hone in on specific elements of the food system to develop a roadmap of key interventions to reduce inefficiencies and waste. Business cases will be developed that explore hotspots and interventions. Federal funding will be sought to conduct pilot scale projects on the proposed business cases.

9.0 Program and Performance Enhancement

9.1 Overview

As outlined in **Section 3.0** of this report, the City has a variety of existing programs and performance measurements in place when it comes to waste management. As part of the SWMMP, the City considered the following questions to determine ways to make improvements to the existing programs and performance measures:

- Where are we now in terms of program performance and waste diversion, and where do we want to be in the future?
- What can the City do to improve and enhance waste reduction and diversion programs?
- How should we fund the delivery of waste management services?
- Can we improve how waste management services are delivered in a more effective and efficient way?

Based on the questions above, a comprehensive list of 132 potential ideas was developed. The initial long-list of ideas was based on research of existing programs and best practices and input from the PAC, TAC, the general public, City Staff, and the Consulting Team. The initial long-list was also reviewed against the 2014 SWMMP to acknowledge duplicates and continuous efforts by City staff.

Further refinements were made to the initial long-list based on input received from City staff, the PAC and the general public through the Project Launch Event and Survey #1. The outcome of this exercise was a short-list of 21 options which were evaluated based on the following seven themes:

- Promotion and Education;
- Reuse;
- Support the Circular Economy;
- Recycling;
- Organic Waste Reduction and Recycling;
- Data Gathering; and
- Enforcement Approaches.

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A brief summary of each theme is provided in **Table 2** below. Additional information on some of the City's current waste management practices are also discussed in **Section 3.0** of this report.

Table 2: Overview of Existing Program and Performance Measures

Option Categories	Overview
Support the Circular Economy	The circular economy is a concept focused on extending a product or material's life to keep it out of landfill; thus creating a circular loop rather than the linear 'take-make-dispose' system. This can be done through partnerships, improved product design, end-of-life technology innovation and many more approaches.
Promotion and Education	The City of Guelph uses different tools and tactics to promote services and programs and to educate the public about how to reduce, reuse, recycle and/or dispose of waste in the city.
Reuse	Reuse means using a product or material more than once which may be in a different way than it was originally used. By extending the use of products instead of disposing, we are saving landfill space as well as saving the energy and resources it would take to make a new product.
Recycle	Recycling is the process of recovering material that would otherwise be disposed, reprocessing it and creating a new product or material. Consumers can help with the process of recycling by separating materials into their designated cart (green, blue, grey) so that recycling facilities can operate more effectively.
Organic Waste Reduction and Recycling	Organic waste refers to materials that can be broken down into carbon dioxide, water, methane and other organic molecules by composting. Green Cart organic waste is aerobically composted at the City's OWPF to produce a nutritious, rich soil amendment that can be used in gardening or farming. The City encourages residents to compost food waste at home and sells backyard composters at a subsidized rate.
Data Gathering	Understanding waste generation habits is an integral part of waste management. Waste audits provide the data we need to review these patterns and identify problem areas that need to be addressed.

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Option Categories	Overview
Enforcement Approaches	Rules and regulations are an important part of ensuring proper and safe waste disposal. Enforcement encourages people to become accountable for their own waste generation, habits and disposal.

The SWMMP evaluation consisted of the following components:

- Evaluation Criteria;
- Indicators; and
- Scoring Guide.

The evaluation criteria is based on a triple bottom line approach, considering the social, environmental, and economic impacts of waste. The initial draft criteria was developed through review of the evaluation criteria used for the SWMMP 2014, the priorities identified in the City's Strategic Plan (2019-2023) and input received through public consultation, the PAC and the TAC.

Based on a review of the Guelph Strategic Plan and input received from the PAC, TAC and the public, the Consulting Team developed six evaluation criteria to guide the evaluation of options, which included:

- **Innovativeness of Approach:** The degree to which the option is able to take advantage of circular economy approaches to waste management, including waste reduction and diversion.
- **Effectiveness of Approach:** The degree to which the option is able to produce expected results (e.g., decrease in waste contamination, food waste reduction, and increased diversion).
- **Adaptability of Approach:** The degree to which the option is able to take advantage of changes in technologies and approaches to waste management, including waste reduction and diversion and to adapt to the ever-changing nature of packaging, products and waste and other emerging issues and trends.
- **Accessibility of Approach:** The degree to which the option is able to meet the waste management needs of various stakeholders and enhance public education and engagement.
- **Ease of Implementation of Approach:** The ease of implementing the option either with current staff or by hiring of additional staff.

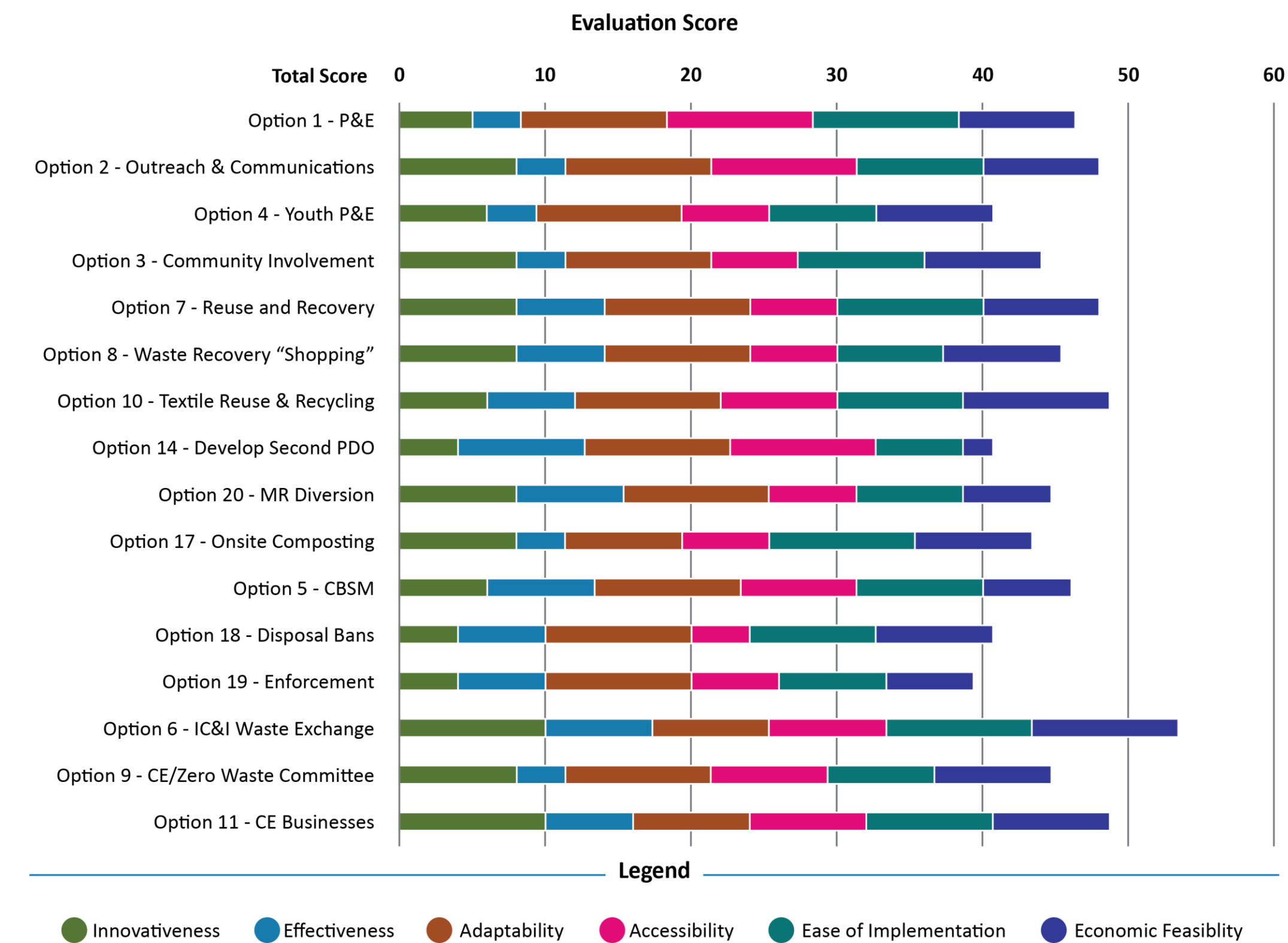
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- **Economic Feasibility of Approach:** The capital and operating costs associated with the option and considering those costs in relation to the other options.

A set of indicators was developed with input from the PAC and City staff to determine the extent to which an option meets the criteria. Lastly, a scoring guide was developed for each indicator based on a five-point scale with 1 being low (least preferred), 3 being medium, and 5 being high (most preferred). Options that will require a detailed feasibility study were not evaluated and moved forward as recommendations.

Based on the evaluation results presented in **Figure 9** below, all of the options evaluated scored on the high side with Option 6 having the highest combined score, 53 out of 60. The reason for the high scoring for all of the shortlisted options was the upfront work completed by the City and Consulting Team in reviewing the input received from the PAC, TAC, stakeholders, and public on the project to date. Through this review, any redundancies among the options was avoided, which has resulted in a robust short-list of options, and a reduced need to eliminate options.

Figure 9: Summary of Evaluation Results



9.2 Feedback from Engagement Activities

The program and performance enhancement options were engaged on through Survey #2, Issues Workshops, interviews, and PAC meetings. What we heard for each option is included below.

9.2.1 Support the Circular Economy

9.2.1.1 What We Heard

- Provide promotions and education to businesses and groups on the Circular Economy
- Include non-profits as well as businesses that are doing this work
- Encourage corporations to employ take-back programs (e.g., electronics)

9.2.2 Promotion and Education

9.2.2.1 What We Heard

- Provide P&E in multiple languages and use strong visuals and graphics
- Educate businesses and producers
- Empower women – they are predominantly the ones active in this space

9.2.3 Reuse

9.2.3.1 What We Heard

- Connect with existing organizations and networks in the community and don't duplicate or undermine the ongoing efforts of community groups / non-profits
- Support from the City should be low cost and modest since organizations already exist (e.g., provide space, training, inventory management)
- Consider transportation and accessibility to programs
- Target businesses who produce the waste

9.2.4 Recycle

9.2.4.1 What We Heard

- Make sure PDOs are accessible and convenient to access
- Target businesses to be more responsible recyclers

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- Have reuse opportunities at the PDO

9.2.5 Organic Waste Reduction and Recycling

9.2.5.1 What We Heard

- Concerns about odours, pests and maintenance
- Target businesses to encourage composting / diverting organics
- Allow backyard gardeners to sell what they grow

9.2.6 Data Gathering

9.2.6.1 What We Heard

- Be inclusive and diverse in who is engaged
- Demonstrate how data and feedback is used
- Service changes should consider societal benefits beyond its business case
- Ensure the language being used is accessible and empowering

9.2.7 Enforcement Approaches

9.2.7.1 What We Heard

- Consider accessibility and equity in the approach (e.g., higher income households might have an easier time purchasing reusable items to reduce waste at home)
- Make sure people can access reuse programs easily
- Find a way to incent and reward residents for participation in waste reduction
- Target businesses to reduce the amount of waste produced

9.3 Recommendations

Below is a summary of the program and performance enhancement recommendations for the SWMMP Update based on the review of the current system, analysis of future waste trends, and consultation with the general public, stakeholders, and waste management experts.

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9.3.1 Support the Circular Economy

9.3.1.1 Circular Economy Policy

- Develop and implement a Circular Economy Policy and Supporting Framework that draws on lessons learned from the Our Food Future pilot project, identifies catalytic roles the City of Guelph and municipalities can play in development and support of CE principles, and that ultimately ties in to and supports the Business Development and Tourism Department's Economic Development and Tourism Strategy and regional strengths.
-

9.3.1.2 Attract Circular Economy Businesses

- Work with the City's Economic Development department to attract and support businesses that contribute to the circular economy.
-

9.3.1.3 Waste Exchange Opportunities

- Support non-profit organizations and businesses in identifying waste exchange opportunities, in partnership with the City's Economic Development Department and Innovation Guelph, through the use of the ReSource Exchange platform.
-

9.3.1.4 Zero Waste Economy Transformation Lab:

- Establish a group comprised of community members, City staff, and business owners who work collaboratively towards making Guelph a zero waste city through development of circular economy initiatives. The Lab will engage in research, prototyping, pilots, policy development and advocacy, stakeholder engagement and collaboration to reduce waste and increase diversion to reuse materials and create secondary economic market opportunities.
-

9.3.2 Promotion and Education

9.3.2.1 Increase the Annual P&E Budget to \$4/HH

- Increase the annual Promotion and Education budget from approximately \$2.30 to \$4 per household, to support new initiatives such as outreach and youth campaigns. Develop metrics to measure P&E initiatives (e.g.,

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diversion rate, decrease in contamination, hits/activity in social media and website).

9.3.2.2 Enhance Support for Outreach and Communication

- Gain an understanding of the community's knowledge about waste management, design a social media strategy, have a dedicated webpage that promotes waste reduction by providing tools and resources by specific waste reduction categories to help residents stay up-to-date and informed, and conduct more in-person outreach.

9.3.2.3 Youth P&E

- City to partner with the school board and community organizations to develop age-appropriate educational materials that focus on the most pressing waste issues and conduct in-school outreach.

9.3.3 Reuse

9.3.3.1 Community Sharing and Repair

- Collaborate with local groups to increase opportunities for sharing, reusing, repairing and repurposing, and to promote and provide space, and/or fund materials for programs and events.

9.3.3.2 Support Community Organizations

- Leverage existing or develop a new funding program to support local groups that help to reduce materials sent to the landfill.

9.3.3.3 Waste Recovery “Shopping”

- Partner with local non-governmental organizations (NGO) to provide space to establish a reuse centre where residents can drop-off items and/or buy gently-used goods at a nominal fee. The NGO will operate the reuse centre and the City will promote it.

9.3.3.4 Textile Reuse & Recycling

- Create a textile collection bin network for households to collect clothing or other textile waste for reuse and/or recycling and approach charities collecting textiles to gauge interest in partnering. Launch a textile reduce,

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repair and donate P&E campaign that promotes the collection bin program and other textile reuse programs operating in the City.

9.3.4 Recycle

9.3.4.1 Collect More Waste Streams at the Public Drop-Off Depot

- Conduct a feasibility study to expand the types of items allowed at the PDO (e.g., mattresses and box springs). Explore other items based on availability of reuse and recycling opportunities.

9.3.4.2 Second Public Drop-Off and/or Options for Public Access

- Assess the need for additional drop-off locations such as a second Public Drop-off (PDO) that offers the same services at the Waste Resource and Innovation Centre (WRIC) PDO. The feasibility study would consider potential locations and cost implications.

9.3.4.3 Collect More Residential Waste

- Conduct a feasibility study to increase diversion by providing greater access through a mobile collection unit that travels to collect things like household hazardous waste.

9.3.4.4 Improve Diversion in Apartment and Condominium Buildings

- Continue implementing the multi-residential (MR) strategy to improve diversion at currently serviced MR properties and onboarding new MR properties and implement a volunteer ambassador program that works with the City and building staff to improve waste reduction and diversion efforts.

9.3.5 Organic Waste Reduction and Recycling

9.3.5.1 Process Yard Waste

- The City will conduct a feasibility study for a leaf and yard waste processing pad. The study will confirm the preferred location (e.g., WRIC), permitting requirements such as environmental compliance

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approvals, materials to process (e.g., loose leaves and/or yard waste), and potential end markets for finished compost. The findings will be compared to the current approach to processing yard waste (private sites).

9.3.5.2 On-site Composting

- The City will promote and provide ways for residents to compost at home and in the community, through educational materials, in-person outreach, and increasing the types and locations for the sale of composters.

9.3.6 Data Gathering

9.3.6.1 Community-Based Social Marketing

- Select a target behavioural change, determine what the barriers and benefits are specific to that behaviour, develop a strategy accordingly and create a pilot project.

9.3.6.2 Conduct Regular Waste Composition Audits

- The City will conduct comprehensive seasonal waste audits to gather information on what households are throwing out and how well they are participating in waste diversion programs. This will help the City understand future waste management needs.

9.3.7 Enforcement Approaches

9.3.7.1 Implement Disposal Bans

- Identify materials to be banned from disposal (e.g., electronic-waste), draft changes to the waste management by-law for Council to approve, and develop educational materials about the ban.

9.3.7.2 Enhance Education and Enforcement Mechanisms

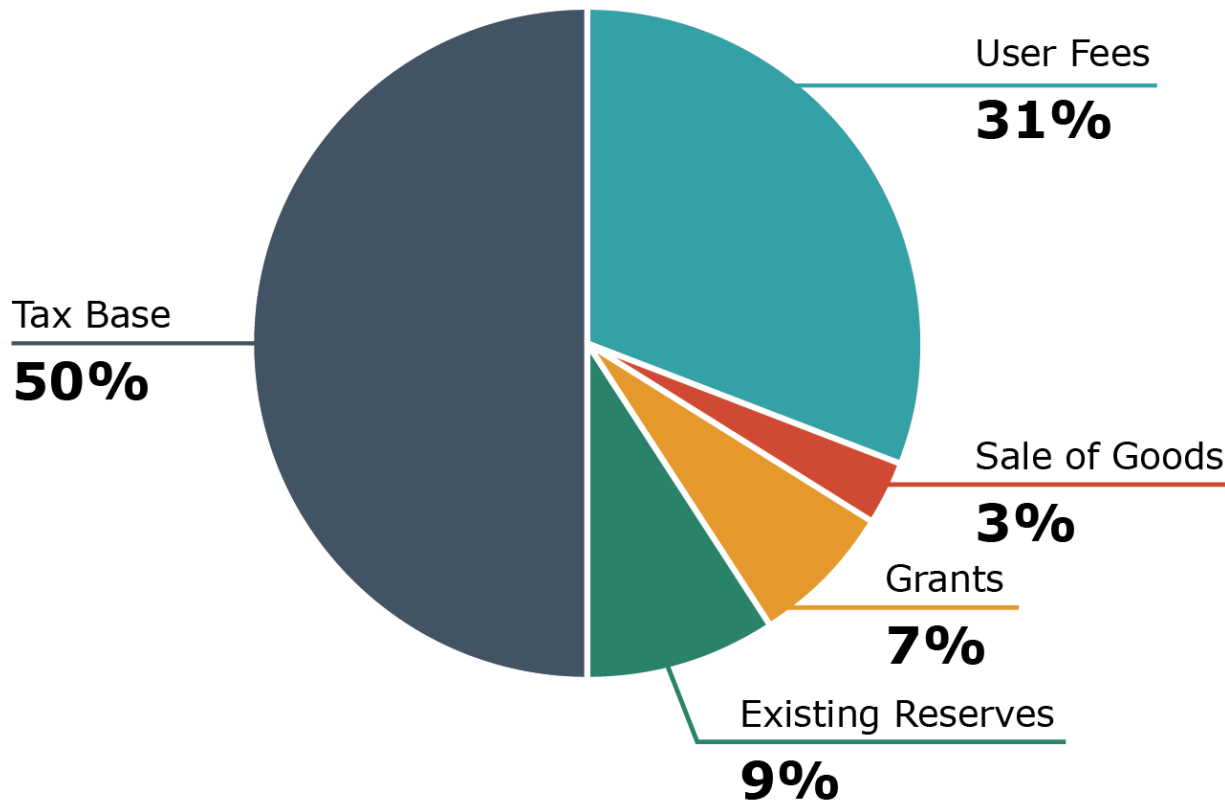
- Increase curbside audits and/or collection staff will visually audit waste carts/bins set out for collection to ensure residents and non-residential customers are properly sorting their waste. Technology will be leveraged to improve waste management program participation (e.g., artificial intelligence).

10.0 Funding Waste Management Services and Programs

10.1 Overview

User fees encourage waste diversion and support the circular economy. The City of Guelph currently funds its solid waste services through a combination of user fees and property taxes. User fees seek to recover the costs of specific activities such as public drop-off fees, and property taxes fund the remaining expenditures. User fees are also used to promote certain diversion behaviours (e.g., source separation of construction and demolition materials) and outcomes such as maximizing use of more efficient curbside programs over use of the site). **Figure 10** provides an overview of how the current solid waste system is funded in Guelph.

Figure 10: How the Current Solid Waste System is Funded in Guelph



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Drawbacks to the current funding approach include:

- Property tax revenue tied to Council approved tax rates
- Does not consider lifecycle costs or reserves/reserve funds
- Untapped potential to reduce waste and increase waste diversion activities

A financial model was developed to identify the total costs for the City to provide waste management services by waste stream for the green cart, blue cart, grey cart, leaf and yard waste, household hazardous waste and other materials at the public drop-off area. The model was then used to identify the revenues needed to fund the required expenditures and assess various user pay options to fund the City's solid waste management system. A best practices review was also undertaken to assess the various ways in which municipal solid waste services are funded.

The Cost-of-Service review also provided the expenditures and revenues allocated by waste stream to isolate the cost of service into the following categories:

- Organics (Green Carts)
- Recycling (Blue Carts)
- Garbage (Grey Carts)
- Leaf and Yard Waste (LYW)
- Household Hazardous Waste; and
- Other Materials (at the Public Drop-off).

Preparation of the model was undertaken through various workshops with staff and allocated to the various waste streams based on a variety of assumptions as they pertained to each revenue and expenditure. The financial model was utilized to assess various user pay options to fund the City's solid waste operations.

It is noted that the legislation regarding the Blue Box program was approved in June 2021 and the City will transition responsibility for these services under the new provincial IPR framework on January 1, 2025. This change may result in a reduction of net system costs by up to approximately \$2.41 million in 2025 if blue box services are no longer provided by the City. Although the Blue Box Regulation (O.Reg. 391/21: BLUE BOX) is now law, implementation details are not yet available to the City. The financial impact

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of potential transition options is provided in a separate Blue Box Transition Strategy memo prepared by Dillon and Watson and Associates Economists Ltd.

Once the Cost-of-Service review was undertaken, the financial model was utilized to assess various user pay options to fund the City's solid waste operations. Currently, the total amount funded by property taxes (\$13.56 million) comprises approximately 5.1% of the total property tax levy. The current funding approach relies on property taxes as the biggest source of revenue.

A best practices review was undertaken to assess the various ways in which municipal solid waste services are funded. The list of comparators included Toronto, Hamilton, Wellington County, Barrie, London, Region of Waterloo, and Peel Region. A summary of the funding sources is provided in **Table 3**.

Table 3: Summary of Solid Waste Funding Sources by Municipality

Municipality	Property Taxes	User Fees	Grants/ Stewardship Funding	Sale of Recyclables	Other Sources
Guelph	Yes	Yes	Yes	Yes	n/a
Peel Region	Yes	Yes	Yes	Yes	n/a
Wellington County	Yes	Yes	Yes	Yes	User Pay (Garbage)
Waterloo Region	Yes	Yes	Yes	Yes	n/a
Hamilton	Yes	Yes	Yes	Yes	n/a
Barrie	Yes	Yes	Yes	Yes	n/a
London	Yes	Yes	Yes	Yes	n/a
Toronto	n/a	Yes	Yes	Yes	Full User Pay

As most municipal comparators finance their solid waste budgets from property taxes and user fees, a comparison of the share of the Municipal property tax bill related to solid waste is provided in **Figure 11**. The City of Guelph share of 5.1% is shown on the horizontal line. When compared to other single-tier municipalities, (London – 3.6%, Barrie – 4%, and Hamilton 5.28%) the share of the tax bill related to solid waste is similar. The

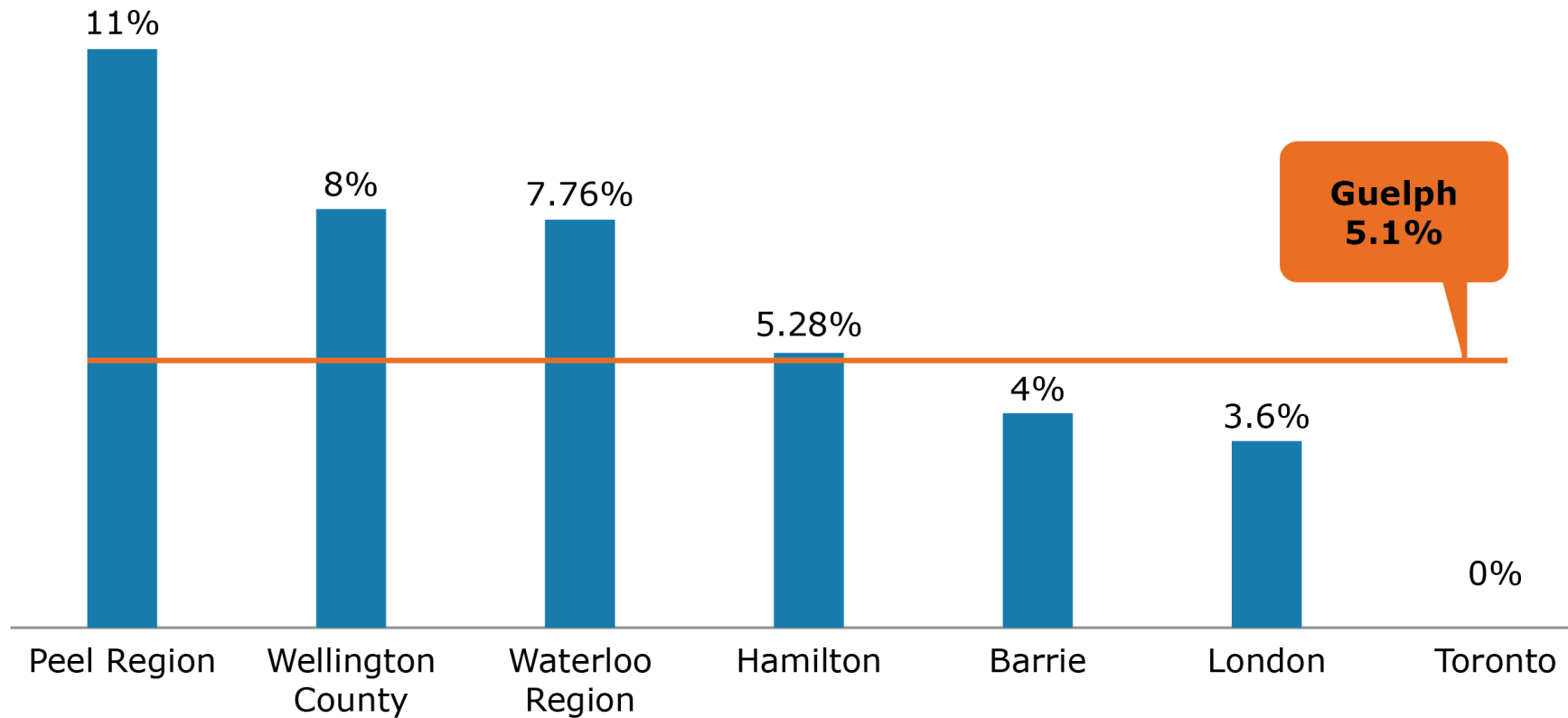
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municipalities with the larger share of the budgets related to solid waste are upper-tier municipalities that provide less services (i.e., single-tier municipalities provide all services, whereas upper-tier municipalities split responsibility for services with lower tier municipalities).

As a result of the above, it appears that the City of Guelph is funding similar proportions from their tax rates, relative to other municipalities in Ontario with the exception of the City of Toronto.

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Figure 11: Share of Municipal Property Tax Bills Related to Solid Waste, by Municipality



Source: Watson & Associates Economists Ltd.

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As a result of increasing costs, upcoming changes to the legislation, and a policy to align costs of service with those that benefit, various funding options (net costs to be recovered) were analysed through this exercise. These options are as follows:

1. Current funding approach (property taxes);
2. Partial Funding - Funding waste diversion programs from property taxes with garbage paid for by a user rate; and
3. Full Funding - Funding for all solid waste, with user fees applied to grey carts (garbage) only but covers funding for diversion programs as well.

The findings will be used to inform the City's review of the Council approved user fee structure and approval of user fee subsidization levels as part of the Corporate Service Rationalization Review recommendation (on a capital-inclusive costing methodology), with the opportunity for budget savings as well as an equitable and consistent user fee recovery practice.

10.2 Feedback from Engagement Activities

Feedback on funding of Guelph's waste management programs was gathered through Survey #2, PAC, TAC and an Issues Workshop with key stakeholders. Overall, participants were somewhat supportive of the options for funding waste management services and programs. Some concerns were heard over accessibility and equity when it comes to the ability of user pay options.

10.2.1 What We Heard

- Ensure accessibility and affordability of user pay option to avoid illegal dumping
- Enforcement of proper disposal will be required if there is an affordability concern
- Consider equity in terms of household size (multi-generational / multi-family households)
- Consider equity and accessibility of user pay options - don't disadvantage marginalized groups
- Make sure people understand the changes, and understand the impact of increased diversion through P&E

10.3 Recommendations

Based on the information presented above, the following recommendation is put forward as part of the SWMMP Update to explore options for funding solid waste services.

10.3.1 Assess User Fee Structure and Subsidization Level

- The findings from the research and community engagement will be used to inform the City's review of the Council approved user fee structure and approval of user fee subsidization levels as part of the Corporate Service Rationalization Review recommendation to review opportunity for budget savings, equitable and consistent user fee recovery practices.

Should the City wish to implement a user rate system, it is recommended that the user rate be implemented two years after the transition to IPR in 2025 to fully understand the Cost-of-Service and required user rates. In addition, this timeline will allow the City to operate under the IPR framework for two years before the full user rate is introduced.

11.0 Community and Stakeholder Engagement

11.1 Engagement Highlights

A series of activities were held to support the community and stakeholder engagement throughout the SWMMP development. The engagement process was designed to collect input from the community and stakeholders at key milestones in the project life cycle, and the feedback heard was integrated into decision-making at each stage.

Figure 12 below provides an overview of the engagement activities completed as part of the SWMMP Update. Below is a summary of each of the engagement tactics used as part of the SWMMP Update.

Figure 12: How We Engaged



11.1.1 Notifications, Engagement Newsletter, and Engagement Webpage

The City of Guelph maintains an Engagement Newsletter to update members of the public about engagement opportunities and consultations for City projects. Through this newsletter, subscribers were notified of engagement opportunities related to the SWMMP. Notices for events, the Surveys, and the Virtual Open Houses were also shared through the City of Guelph's Twitter, and Facebook pages, and advertised in the Guelph Mercury. The project's engagement page on Have Your Say Guelph was also updated throughout the project with opportunities for engagement and to advertise events.

11.1.2 Public Launch Event with Dr. Dianne Saxe

The project launched on December 9th, 2019 with an event featuring Dr. Dianne Saxe, an environmental lawyer, climate change educator, and the former environmental commissioner of Ontario, for a talk on waste and the climate crisis. Approximately 75 people joined the event to hear her speak, provide input on what was important to them when it comes to waste management and kick-off the project.

11.1.3 ICON Workshops - University of Guelph

The University of Guelph's Ideas Congress fall 2019 class was engaged to research the issue of SUIs and to propose solutions for the City of Guelph. City and consulting staff participated in the class by:

- Presenting challenge questions related to how to reduce/eliminate SUIs;
- Being a resource to students and providing direction, as needed, during their research; and,
- Attending the final presentation on results.

Students worked together to produce a report on the topic, which included sections on bag bans and reusable bag banks, community research, national best practices, and by-law creation. The ICON winter class was engaged to continue researching ways to reduce or eliminate SUIs however the engagement was not completed as a result of COVID-19.

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11.1.4 Technical Advisory Group

A TAC composed of City staff with expertise in the different aspects of waste management was engaged throughout the development of the SWMMP on all findings from the technical reports, and provided key input for developing the programming options for the SWMMP.

11.1.5 Public Advisory Committee

A PAC was established to guide the creation of the SWMMP. The PAC met 10 times over the course of the project, and provided feedback on key study issues, concerns and solutions. The PAC was essential to providing in-depth, local expert knowledge of waste management from diverse backgrounds, and helped the project team to think about long term, community-based solutions, and provide practical recommendations for the plan and implementation.

11.1.6 Downtown Stakeholder Group

A DSG composed of City staff, downtown business owners, community organizations, and community members was formed to gather feedback on the collection methodology, service levels, concerns and solutions for the downtown core, as part of the Downtown Study component of the planning process. After initial engagement in January 2020, engagement for this group was put on hold in recognition that downtown businesses were facing significant and unique challenges related to the pandemic. It was decided to engage the downtown stakeholders at a more suitable time as part of the Downtown Infrastructure Revitalization Program that will continue beyond the timeframe of the SWMMP Update, to refine, explore and consult on potential approaches to waste collection downtown.

11.1.7 Pop-Up Engagement

One pop-up booth was set up at the University of Guelph prior to the pandemic in early March 2020. The booth was designed to be informative and interactive to collect input on the overall vision and priorities of the plan. About 41 students visited the booth and identified sustainability and waste reduction and reuse as priorities for the plan.

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11.1.8 Conversations with Community Members

In order to replace the conversations that were planned at the pop-up engagement events, conversations with community members from across Guelph were held over the phone or through video conference to solicit feedback on the key topics explored in the plan. Two rounds of conversations were held alongside the Virtual Open Houses and Surveys. These conversations provided more insight into these topics and helped us reach diverse audiences. In total, 41 community members participated in conversations about the issues and solutions for waste management in Guelph.

11.1.9 Virtual Open House #1

To replace the intended in-person engagement event, a Virtual Open House was held using ESRI StoryMaps, an interactive multimedia webpage. The StoryMap provided information on the current system, future needs, and an overview of the issues of food waste and single use plastics. The Virtual Open House was launched on August 17, and remained open throughout the project. Overall, 250 people viewed the Virtual Open House.

11.1.10 Online Survey #1

An online survey was conducted from August 17 to September 30, 2020 to collect feedback on the current system: What's working well? What needs to be improved? What's missing? 565 people participated in the survey.

11.1.11 Issues Workshops

Three workshops were held to engage community members on key issues being explored in the SWMMP: IC&I Waste Collections, Community Partnerships, and SUIs. The objective of the workshops was to understand perspectives on the issues and the impacts of implementing the options related to each issue. In total 18 community members participated.

11.1.12 Virtual Open House #2

A second Virtual Open House was held through ESRI StoryMaps, and launched on June 2, 2021. The StoryMap provided information on the programming options for waste management in Guelph along with the options to reduce single-use plastics, service the industrial, commercial and

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institutional sectors, and to fund the waste management system. The previous information provided on the StoryMap was maintained as a resource that community members could revisit. Overall, 123 people viewed the Virtual Open House.

11.1.13 Online Survey #2

A second online survey was conducted from June 2 to June 30, 2021 to collect feedback on the options proposed for the SWMMP. 310 people participated in the survey.

12.0 Summary of Recommendations and Implementation Plan

12.1 Summary of Recommendations

The SWMMP Update has a total of 32 recommendations. Out of the 32 recommendations, 21 have been evaluated as outlined in Section 9 of this report. Recommendations that will require a detailed feasibility study were not evaluated and moved forward as recommendations. This section provides a summary of all the recommendations for the SWMMP Update which has been presented within this report.

The list of recommendations has been developed by analysing the current waste systems and future disposal needs with attention to emerging trends and issues. These recommendations primarily focus on waste diversion, reduction, and recycling efforts and support the shift towards a more circular approach. The engagement strategy should include various stakeholders to get a wide variety of knowledge, perspectives, challenges and future goals.

The recommendations take into account that Guelph currently has no operational landfills and is already competing with other municipalities for limited landfill disposal capacity in Ontario. A core requirement in the recommended waste management system and plan is to ensure future disposal capacity. The transition from the Blue Box Program to IPR needs to be carefully considered when developing a sound strategy as IPR will remove the City's responsibility to manage approximately 12,000 tonnes of waste per year. A financial model is also recommended to be maintained to explore recovery of costs for services and user pay options, as well as projected costs, resources and timelines.

12.2 Measuring Performance

As previously mentioned, the City's waste diversion rate, which is based on the weight of wastes diverted and disposed, reached a peak of 69% in 2013 and has since declined. This could be a result of factors such as the weight of products and packaging changing, more people being at home as a result of the global pandemic, less divertable waste being created by

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households, and less sorting of organics and recyclables into the green and blue carts. While the waste diversion rate has been a standard historical approach to measuring the effectiveness of municipal waste management programs, it does present some challenges given some of the following factors that can impact these rates:

- The focus on avoidance, reduction and reuse can lead to less waste being generated and disposed of by households which could mean less waste for the City to manage.
- The shift from a linear to a circular economy, and transition in responsibility for wastes from municipalities to producers will reduce the total amount of waste the City manages. Current IPR materials include tires, hazardous materials and electronics and will include blue box materials as of January 1, 2025.
- It is challenging to predict how the waste stream will change over time. For example, the weight of materials being diverted through the current blue cart program has reduced as a result of lighter packaging, reduction of printed materials such as newspapers and phone books, product packaging using less glass containers and lighter plastic containers or plastic pouches.
- The long term impacts of how and where the workplace is located (i.e., more people working from home) could impact the types and amounts of residential waste collected.

Given the above, it is proposed to establish a new target to measure performance in the main objective of the City's SWMMP Update, which is to reduce the amount of waste generated and therefore managed by the City and requiring processing and/or disposal. The proposed new target is to reduce the amount of garbage generated by each household. This would then track efforts that the City cannot measure such as residents avoiding/reducing their waste and buying and selling gently used items. It will also help to monitor the effectiveness of circular economy and IPR initiatives outside of the City's responsibilities. Diversion rates would still be tracked and monitored.

In 2015, each household sent, on average, approximately 227 kg of garbage to landfill. This per household amount of waste landfilled has increased to 249 kg in 2018, 258 kg in 2019 and 283 kg in 2020.

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The recommendations coming out of the SWMMP Update are anticipated to increase diversion of waste from disposal up to 12% by 2030 (or a diversion rate of 62% by 2030) using the historical diversion calculation. However, with the transition of the blue box program to producer responsibility, the City will no longer be responsible for managing the recycling portion of the waste stream. Going forward, this diversion rate would translate to a target of:

- Waste disposed by household of 250 kg by 2030.

As previously mentioned, Guelph is part of the Cities Race to Zero which has involved setting aggressive targets including reducing the amount of waste disposed by at least 50% by 2030 compared to 2015 amounts. The recommendations will help the City get closer to achieving that target. This aggressive target of 123.5 kilograms per household illustrates the ongoing importance of circular economy initiatives and IPR. A per household target will help the City monitor and advocate for the implementation these initiatives.

It is recommended to continue to monitor the annual performance of the City's waste management programs and revisit the targets and progress in the next SWMMP update.

12.3 Implementation Plan

Below is the proposed draft Implementation Plan for the SWMMP Update as long as the necessary resources are available.

Table 4: Implementation Plan

Theme	Recommendation	Description	Short-term	Medium-term	Long-term
Future State	Residual Waste Management	Explore approaches to identify alternatives to landfilling (e.g., supplying waste through R E O I process, feasibility study).	n/a	Planning and Implementation	n/a
Future State	Monitor and Update SWMMP	Update the SWMMP. With the anticipated major changes and issues facing waste management within the City, province and country, it is recommended that the City monitor progress and update the SWMMP every five years.	n/a	Planning	n/a
Future State	Blue Box Transition	Implement the Blue Box Transition Strategy. The City will continue to monitor developments to the Blue Box Regulation as details are made available and use the Blue Box Transition Strategy tool and financial model, if applicable, to evaluate the viability of providing services as a contractor to a Producer Responsibility Organization (PRO) in the new system and/or to determine the feasibility, costs and diversion impacts of providing services to non-eligible customers (IC&I, downtown)	Planning	Planning	n/a
Single Use Items (SUIs)	Phase 1, Targeted Program	Phase 1, ban the most problematic materials: <ul style="list-style-type: none">• Plastic shopping bags (including non-certified compostable bags and biodegradable bags, certified compostable bags would be exempt)• Foam cups and takeout containers• Plastic straws (available on demand for accessibility purposes, and exempt from the ban in places like hospitals)	Planning and Implementation	Implementation	n/a
Single Use Items (SUIs)	Phase 2, Expanded Program	Phase 2, apply the following additional requirements: <ul style="list-style-type: none">• Apply fee of at least \$1 for reusable bags in Year 1 and increase fee after and work with the community to ensure no impediments to access reusable bags (e.g., Bag Banks)• Require minimum 40% recycled content for paper bags• Fee of at least \$0.25 for disposable cups which is shown on receipts and menus• Offer single-use utensils by request only	Implementation	Implementation	Implementation
Downtown Services Review	Downtown Waste Collection Service	Conduct further engagement, as part of the Downtown Infrastructure Revitalization Program, for a potential pilot project where participating businesses and residents receive daily door-to-door collection system that will move materials to a central collection area for pick-up. Pilot door-to-door collection and use information to explore enforcement measures and alternative funding models.	Planning	Implementation	n/a

Theme	Recommendation	Description	Short-term	Medium-term	Long-term
Downtown Services Review	Downtown Public Space Containers	Permit the use of Public Space Containers (PSCs) for pedestrians only. Consolidate PSCs and strategically place in permanent locations with colour coding to help reduce contamination and improve the quality/quantity of recyclable materials captured.	Planning	Implementation	n/a
Industrial, Commercial and Institutional (IC&I) Waste Programs and Services	Small Mixed Use Buildings	Limit three stream collection services to small mixed use buildings (commercial with a residential component) provided they are: <ul style="list-style-type: none"> located on a residential collection route; generate waste that fits into residential set out limits (80 L green, 240 L and 360 L for blue and grey cart volumes); and complies with the waste by-law to participate in all waste streams. One of the first steps will be to inform non-eligible customers that they will no longer receive service.	Planning	Implementation	n/a
Industrial, Commercial and Institutional (IC&I) Waste Programs and Services	Institutional Facilities	Limit three stream collection services to some institutional facilities (e.g., places of worship, daycares, community centres) if they: <ul style="list-style-type: none"> are located on a residential collection route; generate waste that fits into residential set out limits; and comply with the waste by-law to participate in all waste streams. The City will conduct a review of whether or not non-eligible establishments, as defined in the Blue Box Regulation, will continue to be serviced after the Blue Box transition in 2025.	n/a	Planning	n/a
Industrial, Commercial and Institutional (IC&I) Waste Programs and Services	Schools	Introduce organics collection services to schools not currently receiving City service. Continue to provide Blue Box recycling services to schools that have been historically serviced, until transition to full extended producer responsibility in 2026 at which time all schools will fall under the Blue Box Regulation as an eligible source.	n/a	Planning	Implementation
Support the Circular Economy	Circular Economy Policy	Develop and implement a Circular Economy Policy and Supporting Framework that draws on lessons learned from the Our Food Future pilot project, identifies catalytic roles the City of Guelph and municipalities can play in development and support of CE principles, and that ultimately ties in to and supports the Business Development and Tourism Department's Economic Development and Tourism Strategy and regional strengths.	Planning	Implementation	Implementation
Support the Circular Economy	Attract Circular Economy Businesses	Work with the City's Economic Development Department to attract and support businesses that contribute to the circular economy.	n/a	Planning	Implementation
Support the Circular Economy	Waste Exchange Programs	Support non-profit organizations and businesses in identifying waste exchange opportunities, in partnership with the City's Economic Development Department and Innovation Guelph, through the ReSource Exchange platform and other opportunities.	n/a	Planning	Implementation

Theme	Recommendation	Description	Short-term	Medium-term	Long-term
Support the Circular Economy	Zero Waste Economy Transformation Lab	Establish a group comprised of community members, City staff, and business owners who work collaboratively towards making Guelph a zero waste city through development of circular economy initiatives. The Lab will engage in research, prototyping, pilots, policy development and advocacy, stakeholder engagement and collaboration to reduce waste and increase diversion to reuse materials and create secondary economic market opportunities.	n/a	Planning	Implementation
Promotion and Education (P&E)	Increase the annual P&E budget to \$4/H H	Increase the annual Promotion and Education budget from approximately \$2.30 to \$4 per household, to support new initiatives such as outreach and youth campaigns. Develop metrics to measure P&E initiatives (e.g., diversion rate, decrease in contamination, hits/activity in social media and website).	n/a	Planning	Implementation
Promotion and Education (P&E)	Enhance support for outreach and communication	Gain an understanding of the community's knowledge about waste management and design a social media strategy, have a dedicated webpage that promotes waste reduction by providing tools and resources by specific waste reduction categories to help residents stay up-to-date and informed, and conduct more in-person outreach.	Planning	Implementation	Implementation
Promotion and Education (P&E)	Youth P&E	City to partner with the school board and community organizations to develop age-appropriate educational materials that focus on the most pressing waste issues and conduct in-school outreach.	n/a	Planning	Implementation
Reuse	Community Sharing and Repair	Collaborate with local groups to increase opportunities for sharing, reusing, repairing and repurposing, and to promote and provide space, and/or fund materials for programs and events.	n/a	Planning	Implementation
Reuse	Support Community Organizations	Leverage existing or develop a new funding program to support local groups that help to reduce materials sent to the landfill.	n/a	Planning	Implementation
Reuse	Waste Recovery "Shopping"	Partner with a local non-governmental organization(s) to provide space to establish a reuse centre where residents can drop-off items and/or buy gently-used goods at a nominal fee. The NGO will operate the reuse centre and the City will promote it.	n/a	Planning	Implementation
Reuse	Textile Reuse and Recycling	Create a textile collection bin network for households to collect clothing or other textile waste for reuse and/or recycling and approach charities collecting textiles to gauge interest in partnering. Launch a textile reduce, repair and donate P&E campaign that promotes the collection bin program and other textile reuse programs operating in the City.	n/a	Planning	Implementation
Recycle	Collect more waste streams at the Public Drop-off Depot	Conduct a feasibility study to expand the types of items allowed at the Public Drop-off (e.g., mattresses and box springs). Explore other items based on availability of reuse and recycling opportunities.	n/a	Planning	n/a
Recycle	Conduct a Feasibility Study to determine need for additional PDO locations	Assess the need for additional drop-off locations such as a second Public Drop-off (PDO) that offers the same services at the Waste Resource and Innovation Centre (WRIC) PDO. The feasibility study would consider potential locations and cost implications.	n/a	n/a	Planning and Implementation

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Theme	Recommendation	Description	Short-term	Medium-term	Long-term
Recycle	Collect more residential waste	Conduct a feasibility study to increase diversion by providing greater access through a mobile collection unit that travels to collect things like household hazardous waste.	n/a	Planning	n/a
Recycle	Improve diversion in apartment and condominium buildings	Continue implementing the MR strategy to improve diversion at currently serviced MR properties and onboarding new MR properties and implement a volunteer ambassador program that works with the City and building staff to improve waste reduction and diversion efforts.	Implementation	Implementation	Implementation
Organic Waste Reduction and Recycling	Process Yard Waste	The City will conduct a feasibility study for a leaf and yard waste processing pad. The study will confirm the preferred location (e.g., WRIC), permitting requirements such as ECAs, materials to process (e.g., loose leaves and/or yard waste), and potential end markets for finished compost. The findings will be compared to the current approach to processing yard waste (private sites).	n/a	Planning and Implementation	n/a
Organic Waste Reduction and Recycling	On-site Composting	The City will promote and provide ways for residents to compost at home and in the community, through educational materials, in-person outreach, and increasing the types and locations for the sale of composters.	Planning	Implementation	Implementation
Data Gathering	Community-Based Social Marketing	Select a target behavioural change, determine what the barriers and benefits are specific to that behaviour, develop a strategy accordingly and create a pilot project.	n/a	Planning	n/a
Data Gathering	Conduct regular waste composition audits	The City will conduct comprehensive seasonal waste composition audits to gather information on what households are throwing out and how well they are participating in waste diversion programs. This will help the City understand future waste management needs.	n/a	Planning	Planning
Enforcement Approaches	Implement Disposal Bans	Identify materials to be banned from disposal (e.g., electronic-waste), draft changes to the waste management by-law for City Council to approve, and develop educational materials about the ban.	n/a	Planning	n/a
Enforcement Approaches	Enhance Education and Enforcement Mechanisms	Increase curbside audits and/or collection staff will visually audit waste carts/bins set out for collection to ensure residents and non-residential customers are properly sorting their waste. Technology will be leveraged to improve waste management program participation (e.g., artificial intelligence).	Implementation	Implementation	Implementation
Funding Waste Management Services and Programs	Assess user fee structure and subsidization levels	The findings from the research and community engagement will be used to inform the City's review of the Council approved user fee structure and approval of user fee subsidization levels as part of the Corporate Service Rationalization Review recommendation to review opportunity for budget savings, equitable and consistent user fee recovery practices.	n/a	Planning	n/a

12.4 Implementation Costs

The estimated costs for the SWMMP Update recommendations and implementation plan are summarized in **Table 5** below:

Table 5: SWMMP Update Financial Implications

Description	Short and Medium Term (1-3 years)	Long Term (4+ years)	Total Cost
Capital (10 year costs)	\$2,996,000	\$418,000	\$3.414 million
Planning & Implementation (one-time operating costs)	\$216,000	\$0	\$216,000
Annual Operating Costs (Annualized)	\$602,000	\$161,000	\$763,000 (TBD) ³

It is recommended that the ten year capital budget forecast be updated to reflect the costs identified in **Table 5**. Costs for the Blue Box Transition Strategy (\$2.28 million) were put forward as part of the 2022-2023 budget. SWMMP Update recommendations that involve feasibility studies will inform future capital budget forecasts once the studies are complete, which will increase the capital requirements in the longer term beyond five years and up to the 20 year planning period. The Blue Box Transition Strategy will also inform future adjustments to the capital budget as a result of the change to IPR in 2025.

There are one-time operating costs associated with the SWMMP Update recommendations, which will be required in the short and medium term. The

³ It is noted that the transition of the blue box program from City to individual producer responsibility as of January 1, 2025 will reduce the City's capital and operating costs associated with provision of recycling services. These reductions are not reflected in the estimated costs and will be determined through the Blue Box Transition Strategy. Savings, once confirmed, may be used to support costs identified in **Table 5**.

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recommendations will incrementally increase operating costs as they are implemented. Operating cost increases will be offset by the expected reduction in costs in 2025 associated with the transition of recycling services to producer responsibility. The reduction in net system operating costs will be confirmed through the Blue Box Transition Strategy.

12.5 Staff Resourcing

Staffing resource requirements have been identified for planning, implementation and ongoing operations. Additional staff requirements are included in the cost estimates and include two permanent full time positions, 4.3 full time equivalent (FTE) student positions for planning and implementation and 2.6 FTE student positions for ongoing operations as identified in **Table 6**. These positions are critical to program development and implementation of the SWMMP Update recommendations.

Table 6: SWMMP Update Additional Staff Resources

Position	One Time Cost	Annual Expense
Solid Waste Programs Coordinator	n/a	\$101,000
Solid Waste Compliance Officer	n/a	\$93,000
Students	\$182,000	\$113,000
Additional Expenses⁴	\$14,000	n/a
Total	\$196,000	\$307,000

It is recommended that the two additional permanent positions be added in the 2024 budget process to develop and implement the programs associated with the SWMMP Update recommendations as follows:

- Solid Waste Programs Coordinator – Without this position the promotion and education (P&E) activities associated with multiple SWMMP Update recommendations in the following areas cannot be implemented including Single Use Items, Downtown Services Review, IC&I Waste Programs and Services, Support the Circular Economy, Promotion & Education, Reuse,

⁴ Additional expenses include office space, desks, cabinets, phones, computers, etc.

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and Enforcement Approaches. Successful P&E programs are critical to the success of these recommendations.

- Solid Waste Compliance Officer – Without this position, the Single Use Items recommendations and downtown waste collection pilot cannot be implemented.

Responsibilities and duties of recommended staff:

12.5.1 Solid Waste Programs Coordinator

- Required for implementation of all P&E related activities for the SWMMP update recommendations (Single Use Items, Downtown Services Review, IC&I Waste Programs and Services, Support the Circular Economy, Promotion & Education, Reuse, Enforcement Approaches)
- Planning/implementation of new and enhanced P&E initiatives, including social media strategy and web page
- Ongoing operations of P&E initiatives that are developed
- In person outreach activities
- Development and implementation of a youth P&E program
- Work with local groups to support community sharing and repair space, materials, programs, and events
- Support new funding program for local groups to help reduce materials sent to landfill
- Development of Waste Recovery “Shopping” space and ongoing program monitoring/support
- Support textile reuse and recycling program
- Development of educational materials and in-person outreach to promote composting at home and in the community
- Development and implementation of a community-based social marketing pilot project
- Support Circular Economy P&E initiatives
- Support P&E initiatives for disposal bans and enhancements to education and enforcement mechanisms

12.5.2 Solid Waste Compliance Officer

- Required for implementation of recommendations related to Single Use Items and Downtown Services Review
- Enforcement of single use item by-law to support targeted program & expanded program
- Support Downtown Waste Collection Service Pilot Project

12.5.3 Students/Co-op Students

- SUIs – Targeted Program & Expanded Program: Support outreach activities
- P&E – Enhance Support for Outreach and Communication: Support outreach activities
- P&E – Youth P&E: Support outreach activities
- Recycling - Collect more waste streams at the Public Drop-off Depot: Research feasibility study on expanding materials collected at the PDO based on reuse and recycling opportunities.
- Recycling – Collect more residential waste: Support Policy Analyst to undertake feasibility study to implement a mobile collection unit
- Enforcement – Enhance education and enforcement mechanisms: Curbside audits and data management
- IC&I – Small mixed use buildings and institutional facilities: Support Policy Analyst in program development
- Downtown Waste Collection Service: Support outreach activities

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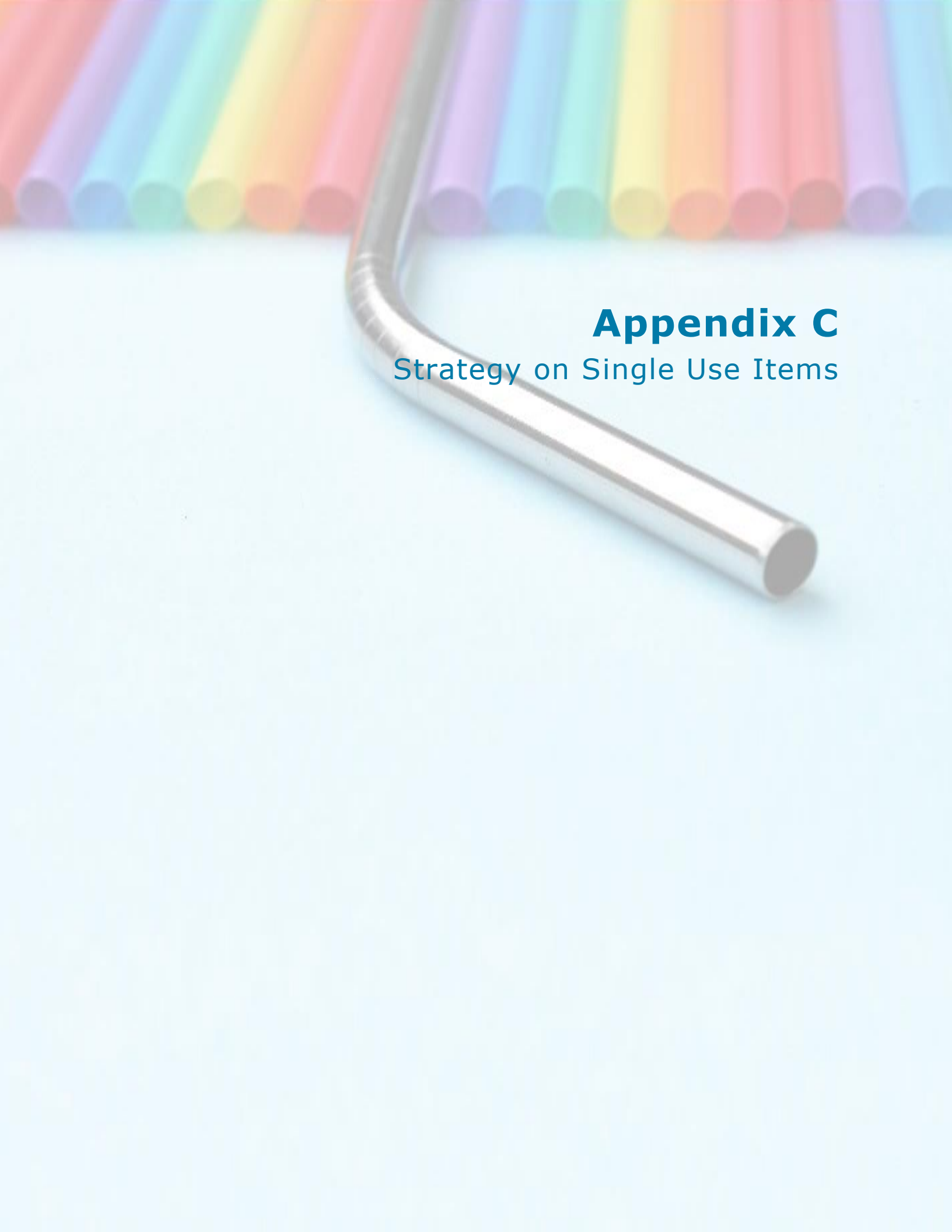
Appendix A

Current State Report



Appendix B

Future State Report



Appendix C

Strategy on Single Use Items