

Executive Summary

Guelph Solid Waste Management Master Plan







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Circular Economy

A key finding coming out of the City's Solid Waste Management Master Plan (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.

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 it 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. 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 resiliency of City services and infrastructure.



THE CIRCULAR ECONOMY SERVES AS THE VISION FOR THE FUTURE ROLE FOR SOLID WASTE RESOURCES.





Smart Cities, Our Food Future, and Circular Opportunity Innovation Launchpad (COIL)

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. Data was collected from each point along the food supply chain and an understanding of the flow of consumed, lost, and wasted food products was developed.

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 options presented in this report. Guelph-Wellington is striving to become a circular food economy with three bold goals:



50%

increase in access to affordable, nutritious food, where "waste" becomes a resource;



new circular business and collaboration opportunities; and



<u>50%</u>

increase in circular economic benefit produced by unlocking the value of waste.

Waste as a Resource is one of three Our Food Future workstreams 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 their work include the following:

- Residential food waste audits and interventions
- Leverage Artificial Intelligence 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

A unique feature of our SWMMP was taking a regional view of our food system in support of developing a circular food economy which is among the first of its kind in Canada! The Sankey diagram below depicts the flow of food products from production to consumption, as well as waste streams. Based on the research findings, the majority of the product produced in Guelph-Wellington is transported out of the region for additional processing. The research findings 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.



Solid Waste Management Master Plan Update

The City of Guelph (City) has updated its 2014 Solid Waste Management Master Plan (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 review and update of the SWMMP (*Figure 3*) began in the Fall of 2019 and was completed in late 2021.

Project 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 singleuse items



Figure 3: Overview of Project Schedule



03

How We Engaged

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

Community Engagement and the COVID-19 Pandemic

In March 2020, the World Health Organization declared the global COVID-19 outbreak a pandemic. 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 number of \mathfrak{S} beside each recommendation and option indicate the degree to which Guelph residents and stakeholders support the recommended options. Overall, participants supported the recommended options for the SWMMP.



Options and recommendations without a check mark were not engaged on as future studies are required.

Project email for direct communication

with the community



Email **newsletter** on project updates and engagement opportunities

Online engagement hub at www.HaveYourSay.Guelph.ca/Waste



Interviews with

41 community

members

Notifications posted in the **Guelph Mercury Tribune**



Social media to spread awareness -#GiveWasteaNewLife

A Downtown Stakeholder Group made up of City staff, downtown business owners, community organizations, and community members to gather feedback on waste management in the **Downtown**

Pop-up engagement

at the University of Guelph Off-Campus Living Fair with 41 visitors

Waste and the climate crisis



in the audience



19 participants

from across Guelph

2 Virtual Open Houses with



550 visitors



Partnership with the University of Guelph's Ideas Congress class to gather research on how to reduce or eliminate singleuse items

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Public Advisory Committee

made up of 10 members, with 10 meetings throughout the project to provide feedback on the plan

Total of approximately 1,630 people engaged



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Waste Diversion in Guelph

Diversion

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.



Did you know!

The City is among the top leaders in Ontario municipal waste management in terms of diverting waste from disposal.

Overall, Guelph 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 more 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.

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 5: SWMMP Target



2020

Each household 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 that prioritizes waste reduction and places disposal as the least preferred waste management approach. Figure 6: Waste Hierarchy



Figure 7: Average Annual Waste Collected



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Waste Management in Guelph

Residential Customers

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

Residents have the choice of one size (80L) for the green (organics) cart and two sizes (240L and 360L) for their blue (recycling) and grey (garbage) carts. Additional carts can purchased for an additional fee.



Downtown Core Customers

The City provides waste collection services in the downtown core six days per week (Monday through Saturday). Downtown properties have a number of flexible, threestream waste collection options that best suit their needs.



RESIDENTIAL CUSTOMERS

WHAT'S IN OUR GARBAGE?



~30,860 Single Family Customers



DOWNTOWN CORE CUSTOMERS



300 public space containers



300 carts in the downtown collection area



Single family



Public Spaces





Multi-Residential



Downtown Core



Waste Resource Innovation Centre

The Waste Resource Innovation Centre (WRIC) receives all wastes managed by the City, including waste collected by the City, and provides residents with a place to bring curbside collected materials plus other items such as household hazardous waste. Fees are applied depending on the waste that is brought to the WRIC by residents. Green and blue cart materials are processed at WRIC and grey cart materials are hauled and disposed at Waste Management Inc.'s landfill located 2 hours southwest of Guelph.





Future Waste Management Considerations

Guelph's population is expected to grow from 138,700 people in 2019 to 165,000 by 2031. 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.

For waste management in Guelph this means thinking about questions such as:

- How many new collection trucks and drivers may be needed?
- Given 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, Ontario¹ 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.



Trends and Potential Issues:

- 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
- How to effectively measure performance

Future waste management considerations also need to support Guelph's other 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 40ft 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 (AD) facility is underway through the City Operations Campus site plan design. AD 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 system that recovers biogas and has plans to expand the system in the medium term. Opportunities exist for these two sites to coordinate initiatives.



The following recommendation is 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).

Monitor and Update SWMMP

Monitor progress and update SWMMP every five years.

Blue Box Transition

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 Individual Producer Responsibility (IPR).

The Blue Box Transition Strategy provides a tool to assess the impacts on the rest of the City's solid waste management system 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. Collection Only
- **D. Collection and Transfer**
- E. Collection and Processing





The following recommendation is put forward as part of the SWMMP Update:

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).

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A Discussion on Single-Use Items

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 City reviewed international, federal, and provincial trends and actions; carried out a municipal best practices review; and partnered with the University of Guelph's Ideas Congress (ICON) to consider lessons learned and innovative ways to tackle SUIs.

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.

The following recommendations are put forward as part of the SWMMP Update:

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)

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)

 (\checkmark) (\checkmark) (\checkmark) (\checkmark) (\checkmark)

Not at all supportive

- 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



82%

of Canadians urge government action to tackle plastic pollution Only **9%** of all plastics sold in Canada each year are recycled; we throw away over 3 million tonnes of plastic waste a year

1/3

of all plastics used in Canada are for single-use products and packaging

In Canada

- 15 billion plastic bags are used each year and
- 57 million straws are used daily;
- globally, 150 billion plastic items are thrown away each year

By 2030, plastic production and incineration will produce 300 coal plants worth of Greenhouse Gases (GHGs)

By 2050 the weight of all plastics in the ocean will be **higher** than the total weight of all fish

Industrial, Commercial and Institutional (IC&I) Waste Programs and **Service**

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 guantities 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.

The following recommendations are put forward as part of the SWMMP Update:

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 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.

Institutional facilities

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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 noneligible establishments, as defined in the Blue Box Regulation, will continue to be serviced after the Blue Box transition in 2025.



Very supportive 📫 🔗 🏵 🛇

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.

Downtown Services Review

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 (PSC) are also provided and used by both the general public and downtown businesses and residents.

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.
- PSC 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.

The following recommendations are put forward as part of the SWMMP Update:

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 pickup. Pilot door-to-door collection and use information to explore enforcement measures and alternative funding models.

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 City currently has approximately 300 public space containers and 300 carts in the downtown collection area.





Funding Waste Management Services and Programs

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.

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 blue cart, green cart, grey cart, leaf and yard waste, household hazardous waste and other materials at the public dropoff 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 following recommendation are put forward as part of the SWMMP Update:

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. Figure 8: How the Current Solid Waste System is Funded in Guelph





User fees or charges help to encourage waste diversion, as it will encourage people to throw less items in the grey cart.



09

Overview of Waste Management Options

Support the Circular Economy

The circular economy is a concept focused on extending a product or material's life to keep it out of landfills; thus creating a circular loop rather than the linear 'take-makedispose' system. This can be done through partnerships, improved product design, end-of-life technology innovation and many more approaches.

The following options are recommended as part of the SWMMP Update:

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. Which may include opportunities such as:

Attract Circular Economy Businesses



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

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 and other opportunities.

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.



Promotion and Education (P&E)

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:



Collection

calendar



Waste Carts User Guides



Free Guelph Waste App



Other media such as print and radio ads and social media The following options are recommended as part of the SWMMP Update:

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

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.

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.







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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.



The following options are recommended as part of the SWMMP Update:

Community Sharing and Repair



Very supportive 🛛 📥

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.

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Support Community Organizations



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

Not at all supportive



Waste Recovery "Shopping"



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

Textile Reuse & Recycling



Create a textile 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.

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.

Average Annual Curbside Residential Waste Collected:





Not sure what gets recycled and what doesn't? Visit the City's *Waste Wizard* to find out.

The following options are recommended as part of the SWMMP Update:

Collect more waste streams at the Public Drop-off (PDO)

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.

Conduct a Feasibility Study to determine need for additional public drop-off 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.

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.

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.











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 Organic Waste Processing Facility (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.

A curbside collection program for yard waste was introduced in 2021 and collection is every other week from spring until the fall. Yard waste can also be dropped off at the PDO year round. Yard waste is taken to a private composting facility. Grass clippings are not accepted in the green cart or yard waste collection programs to encourage grasscycling and leaving clippings on the lawn after mowing. The following options are recommended as part of the SWMMP Update:

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).

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.

Very supportive \rightarrow $\heartsuit \heartsuit \heartsuit \heartsuit \heartsuit \heartsuit$





Type of waste currently accepted in the Green Cart include:



Food waste



Soiled paper products



Pet waste

Average Annual Amount of Organic Waste Received ~ 10,300 TONNES

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.

The City completed waste composition audits for single homes, multi-residential properties, the downtown core and public spaces in 2016 and is currently conducting four-season composition audits.





Community-Based Social Marketing



Select a target behavioural change (e.g., based on waste audit data), determine what the barriers and benefits are specific to that behaviour, develop a strategy accordingly and create a pilot project.

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. Z TR

Education and Enforcement Approaches

Rules and regulations are an important part of ensuring proper and safe waste disposal. Increased education and enforcement encourages people to become accountable for their own waste generation, habits and disposal.

Based on past waste audits completed, approximately 38% of the waste found in the grey cart could have been diverted through curbside collection programs.

Very supportive 📫 🔗 🖓 🖓 🖉 Not at all supportive

The following options are recommended as part of the SWMMP Update:

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.

 $(\checkmark)(\checkmark)(\checkmark)(\checkmark)(\checkmark)$

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).



City Policies, By-law and Strategies that support and guide the provision of waste management services include:

- Solid Waste Management Master Plan
- Official Plan
- Waste Management By-law
- Sustainable Waste Management Policy
- Community Energy Initiative
- Strategic Plan
- Solid Waste Resources Business Service Review
- Smart Cities Our Future Food



Summary of Recommendations and Implementation Plan

10

Below is the proposed plan for when the SWMMP recommendations will be recommended in the short, medium and long term time frames. The recommendations and implementation timelines are dependent on having the necessary resources and future budget deliberations.



Legend

Planning (P)		Implementation (I)Planning & Implementation (P&I))		
Themes	Recommendation	Description		Short term	Medium term	Long term
Future State	Residual Waste Management	Third party to study alternative approaches to landfilling (e.g., Request Expressions of Interest process, feasibility study).			P&I	
	Monitor and Update SWMMP	Monitor progress and update SWMMI years.	P every five		Р	
	Blue Box Transition	Implement Blue Box Transition Strate	egy.	Р	Р	
SUIS	Phase 1, Targeted Program	Ban plastic shopping bags, foam cups, takeout containers, plastic straws (available for on-demand).		P&I	1	
	Phase 2, Expanded Program	Phase 1, plus fees, minimum recycled content, utensils by request.		1	1	1
Downtown Services Review	Downtown Waste Collection Service	Conduct further engagement, as par Downtown Infrastructure Revitalizati for a potential pilot project where pa businesses and residents receive dai door collection system that will move to a central collection area for pick-u to-door collection and use informatic enforcement measures and alternativ models.	t of the on Program, rticipating ly door-to- e materials ip. Pilot door- on to explore ve funding	Ρ	1	
	Downtown Public Space Containers	Permit the use of Public Space Conta for pedestrians only. Consolidate PSC strategically place in permanent loca colour coding to help reduce contam improve the quality/quantity of recyc captured.	iiners (PSCs) Cs and itions with ination and clable materials	Ρ	1	

Themes	Recommendation	Description	Short term	Medium term	Long term
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: located on a residential collection route; generates waste that fits into residential set out limits (80L green, 240L blue, and 360L grey cart volumes); and complies with the waste bylaw 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. 	Ρ	I	
	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. 		Ρ	
	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.		Ρ	I

Themes	Recommendation	Description	Short term	Medium term	Long term
Support the Circular Economy	Circular Economy Policy	Develop and implement the City's Circular Economy Policy and Framework.		I	1
	Attract Circular Economy Businesses	Work with the City's Economic Development Department to attract and support businesses that contribute to the circular economy.		Ρ	1
	Waste Exchange Programs	Support non-profit organizations and businesses in identifying waste exchange opportunities, in partnership with the City's EcDev and Innovation Guelph, through the ReSource Exchange platform and other opportunities.		Ρ	I.
	Zero Waste Economy Transformation Lab	Establish a group made up of community members, City staff, and business owners who work collaboratively towards making Guelph a zero waste city through development of circular economy initiatives.		Ρ	I.
Promotion and Education (P&E)	Increase the annual P&E budget to \$4/ HH	Increase budget to support new outreach and youth campaign initiatives.		Ρ	I.
	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 for residents and conduct more in-person outreach.	Ρ	I	I.
	Youth P&E	Develop age-appropriate educational materials that focus on the most pressing waste issues and conduct in-school outreach in partnership with school board and NGOs.		Ρ	1

Themes	Recommendation	Description	Short term	Medium term	Long term
Reuse	Community Sharing and Repair	Increase sharing, reusing, repairing and repurposing, and promote and provide space, and/ or fund materials for local organizations, programs and events.		Ρ	I.
	Support Community Organizations	New funding program to support local groups that help to reduce materials sent to the landfill.		Р	I.
	Waste Recovery "Shopping"	Partner with a local NGO(s) to provide space for a reuse centre where residents can drop-off items and/or buy gently-used goods at a nominal fee.		Р	I.
	Textile Reuse and Recycling	Create a textile bin network for households to collect clothing or other textile waste for reuse and/ or recycling.		Ρ	I.
Recycle	Collect more waste streams at the Public Drop-off Depot	Feasibility study on expanding materials collected at the PDO based on reuse and recycling opportunities.		Ρ	
	Second Public Drop-Off and/or Options for Public Access	Feasibility study on need for additional drop-off locations (e.g., second PDO).			P&I
	Collect more residential waste	Feasibility study to increase diversion by providing greater access through a mobile collection unit that travels to collect things like large items and household hazardous waste.		Ρ	
	Improve diversion in apartment and condominium buildings	Continue implementing strategy on how to improve diversion, assess select multi-residential buildings annually, and start a volunteer ambassador program.	1	1	I

Themes	Recommendation	Description	Short term	Medium term	Long term
Organic Waste Reduction and Recycling	Process Yard Waste	Feasibility study to construct a leaf and yard waste processing pad at the WRIC to process leaf & yard Waste from seasonal collection program. The study will identify potential end markets (preference for local agricultural or landscaping businesses and/ or residents, depending on demand in the business case).		P&I	
	On-site Composting	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.	Ρ	I	I.
	Community-Based Social Marketing	Select a target behavioural change, develop a strategy accordingly and create a pilot project.		Р	
Data Gathering	Conduct regular waste composition audits	Conduct comprehensive seasonal waste composition audits.		Ρ	Ρ
Education and Enforcement	Implement Disposal Bans	Identify materials to be banned from disposal (e.g., electronic waste), draft changes to the by-law for City Council to approve, and develop educational materials.		Ρ	
	Enhance Education and Enforcement Mechanisms	Curbside audits and/or collection staff will visually audit waste carts/bins set out for collection. Additionally leveraging technology (e.g., scale up artificial intelliegence) to improve waste management program participation.	1	I.	I.
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.		Ρ	

Estimated Costs to Implement the SWMMP Recommendations

The estimated costs, including staffing resource requirements, to execute the SWMMP recommendations are summarized in the table below.

Description	Short and Medium term (1 - 3 years)	Long Term (5+ years)	Total Cost
Capital (10 year costs)	\$2,996,000	\$418,000	\$3.414 million ^{1,2}
Planning & Implementation (one-time operating costs)	\$216,000	\$O	\$216,000
Annual Operating Costs (Annualized)	\$602,000	\$161,000	\$763,000 (To be Determined) ¹

¹ The capital and operating cost increases will be offset by the expected reduction in costs in 2025 associated with the transition of the blue box program from City to individual producer responsibility which are not shown in the table. Preliminary financial modelling based on current state and forecasted growth and budget projections, show an estimated \$2.41 million savings in net cost starting in 2025.

² Costs for the Blue Box Transition Strategy (\$2.28 million) have been incorporated into the 2022-2023 multi-year capital budget.

The new staffing positions are critical to the program development and planning of multiple SWMMP recommendations including Circular Economy approaches, promotion and education campaigns and enhanced enforcement required for successful implementation of programs.

It is recommended that staff phase in the budget requests related to the SWMMP recommendations starting in the 2023 multiyear operating and capital budget forecast for Council's deliberation.





