Solid Waste Management Strategy: System Review and Solid Waste Management Options Recommendations

City of Clarence Rockland

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1 Introduction

The City of Clarence-Rockland (the Municipality) is preparing an update to the City's 2015 Solid Waste Management Strategy (SWMS). The purpose of the SWMS update is to complete a thorough evaluation of the Municipality's current existing waste management services, explore new and innovative ways to support the community's waste management needs, and to develop an updated plan for promoting sustainable waste management practices, reducing waste generation, and increasing waste diversion.

This report provides a snapshot of the Municipality's current waste management system, its performance, and potential options for how the Municipality's solid waste may be managed in the future.

2 About Clarence Rockland

The City of Clarence-Rockland is located in south-eastern Ontario, approximately 30km east of the City of Ottawa. Located in the United Counties of Prescott and Russell, the City is comprised of seven smaller towns and villages that include: Bourget, Cheney, Clarence Point, Clarence Creek, Hammond, Rockland and Saint-Pascal-Baylon. The City was formed In January 1998 when the Town of Rockland amalgamated with Clarence Township. The City is predominately rural, with Rockland being the main urban area.

The City is considered a `Rural Collection South` jurisdiction, based on Waste Diversion Ontario`s (WDO) municipal groupings. Through its Operations Department, the City is responsible for providing waste services to all residents and to some industrial, commercial and institutional (IC&I) establishments.

In 2021, the City had an estimated population of 26,505 and waste collection services and diversion programs were provided to approximately 10,316 total households, which included 7,525 single family homes and 1,972 multi-residential family units[1]. In addition to this, the City provides garbage bin collection services for 312 small commercial establishments and 88 large businesses. The City only provides this service if they have a private recycling contract. The City provides the following services and facilities using private contractors and municipal services:

- Weekly collection of residential waste at curbside and from apartment dumpsters;
- Curbside collection for leaf and yard waste (April to November) and drop-off at the landfill site;
- Scrap metal depot drop-off (at landfill site);
- Scrap tire depot drop-off (at landfill site) ;
- Curbside Christmas Tree collection;
- Monthly bulky goods curbside collection;
- Waste Electrical and Electronic Equipment (WEEE) depot drop-off (at landfill site);
- Drop-off of construction and demolition (C&D) waste at the landfill site (where some is diverted for reuse by landfill site staff);
- Municipal Hazardous Special Waste (MHSW) depot drop-off (at landfill site);
- Mattress and textile drop off;
- Fall Clean-up event; and
- Fall Give Away Weekend.

The City also operates a landfill site in the community of Bourget.

[1] Statistics Canada

The City's most recent Solid Waste Management Strategy was prepared in 2015. That strategy identified a number of initiatives to improve the overall performance of the City's solid waste management system, increase the proportion of waste diverted from disposal, reduce the total amount of waste being disposed at the landfill site, and – in doing so - maximize the current landfill site's useful lifespan. Since then, the Municipality has implemented most of the strategy's recommendations. A summary of these and their status are presented in Table 1.

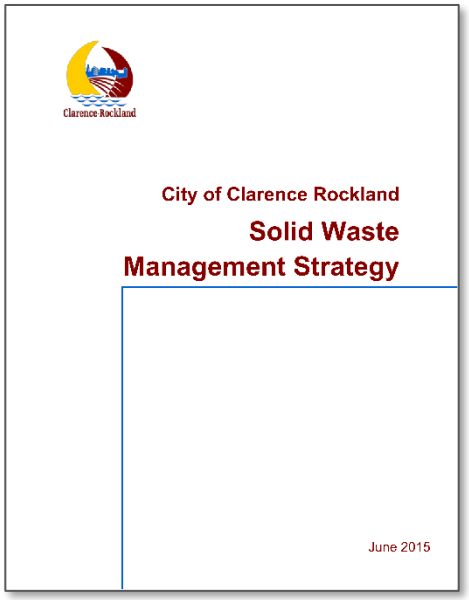


Table 1: Status of 2015 Solid Waste Management Strategy Recommendations

2015 Recommendation	Current Status
Automated Waste Collection Conduct a business case analysis, maintain on-going dialogue with neighbouring municipalities regarding multi-municipal waste management services	Included in the last tendering process as an option, but was not selected
Ban Designated Materials from Landfill Add Blue Box materials, screen loads at landfill	Waste Management by-law include list of banned materials, including prohibited from collection as garbage or from disposal at landfill
Establish a Scale House at the Landfill Site and Update Landfill Tipping Fees	Scale house constructed and is in use
Design and Implement a Solid Waste Management Promotion and Education Strategy	City's Solid Waste Management Promotion and Education program continues to evolve and integrate new methods as they become available
Updating the Bag Limits / Bag Tag Policy	Bag limit has not been decreased from three items
User Pay/Bag Limits for Business Sector Clients	TBC

2015 Recommendation	Current Status
Multi-Municipal Partnerships for Collection and Processing of Materials Ongoing collaboration with neighbouring municipalities about opportunities for multi-municipal partnerships for solid waste management services	Opportunities continue to be explored
On-site Management of Organics Develop a Backyard Composting Program	Backyard Composting Program has not been included Exploring opportunities with FoodCycler appliances for in-home organics management
Source Separated Organics (SSO) and Leaf and Yard waste Conduct a feasibility assessment for an SSO program	SSO program assessment not completed Leaf and yard waste curbside collection in place since fall of 2023 (April to November)

3 Existing Solid Waste Management System

3.1 Curbside Garbage (Residential)

The City's waste collection contractor collects curbside garbage from households once per week. There is a maximum 3-container set out limit, but additional containers can be set out for collection with a purchased bag tag. Monthly bulky waste collection is available for items greater than 50 pounds, with the purchase of a $20 bulky item tag.

The City collected 7,122 tonnes of waste in 2024, which included:

- 6,063 tonnes of curbside residential (including small ICI with 10 bags) garbage;
- 1,058 tonnes of IC&I garbage (including multi-residential with bins); and
- 1.65 tonnes of curbside bulky waste (note: this weight reflects only metal items, as all other items were in the curbside residential truck).

3.2 Curbside Recycling

Management of the City's Curbside Blue Box Recycling program was transitioned to Circular Materials Ontario (CMO) in July 2023. As such, data for 2024 is not available. The City reports that 1,782 tonnes of residential Blue Box material were collected for recycling in 2023. This included 985 tonnes of mixed fibres (i.e., printed paper and paper packaging) and 798 tonnes of glass, metal and plastics (GMP).

3.3 Deposit-Refund

Ontario's Deposit-Refund program allows Ontarians to return their deposit-refund beverage containers to Beer Store locations for a refund. While data is not available specifically for Clarence-Rockland, the amount of metal, glass and plastic beverage containers returned for recycling in the City is 602 tonnes (based on average per household returns).

3.4 Yard Waste and Chipped Wood

The City started providing seasonal curbside leaf and yard waste collection in September 2023. The service is provided annually from April to November. Residents are also able to drop off their yard waste at the landfill site. The City managed 1,306 tonnes of yard waste in 2024, including 1,210 tonnes collected curbside and 96 tonnes collected at the landfill site.

In addition, the City chipped about 875 tonnes of wood, including branches, which 275 tonnes were then sent for agricultural reuse.

3.5 On-site Waste Diversion

Backyard composting and grasscycling are valuable on-site activities that help divert organics from disposal in landfills. While measured data is not available, estimates have been prepared based on average per household diversion for Group 7 municipalities in the 2022 RPRA Municipal Datacall. An estimated 592 tonnes of organics were diverted from disposal in 2024 in Clarence-Rockland. For the purposes of this study, about half of this (296 tonnes) is assumed to be food waste and the other half yard waste.

3.6 Commercial Waste Collection (Bins)

The City provides solid waste collection services to a variety of commercial and institutional customers[2]. In 2024, the City collected about 1,058 tonnes of waste from these customers, with the greatest amount

[2] 119 sites in 2023.

of waste coming from health care-related sites (227 tonnes), restaurants (191 tonnes), apartments and condominiums (181 tonnes) and retail/office customers (146 tonnes)[3].

Table 2: Commercial Waste Tonnage (2023)

Commercial Category	Garbage Collected in 2024 (tonnes)	Percent of Commercial Waste Collected
Health Care Related	227	21.4%
Restaurant	191	18.1%
Apartment / Condominium	176	16.7%
Retail	146	13.8%
School	120	11.4%
Municipal	70	6.7%
Sports / Recreation	60	5.7%
Light Manufacturing	37	3.5%
Grocery	30	2.8%
Total	**1,057**	

3.7 Landfill Drop-off Programs

The landfill site is available with scheduled operating hours to residents who wish to drop waste off waste items. Each Clarence-Rockland residence is allowed to dispose, at no cost, a cumulative weight of 140 kg annually. One the limit is reached, disposal fees will apply. The following table lists the materials accepted at the landfill site, indicates whether fees apply after the 140 kg threshold is reached, and reported tonnage received at the landfill in 2023. Figures 1 through to 3 depict the location of the landfill site in Clarence-Rockland, the scale house and waste diversion drop-off area, and the tip face area.

[3] This includes garbage collected in bins and excludes garbage collected using curbside bags.

Table 3: Materials Available for Landfill Drop Off, Fee Applicability, and Annual Tonnage (2024)

Material	Fees Applicable?	2024 Tonnage
Non-hazardous Solid Waste	Yes	5,339
Construction and Demolition Waste	Yes	1,143
Items with refrigerant	Yes	261 units with refrigerant removed
Sand and concrete	Yes	*
Lumber	Yes	*
Garden waste & Branches up to 12 inches in diameter	No	96
Household hazardous waste (100 kg limit)	No	52
Blue Box Recyclables	No	*
Refrigerant free scrap metal	No	159
Propane tanks	No	2.4
Tires	No	42
Textiles	No	6
Electronics	No	20
Mattresses	No	77 [4]

With respect to mattresses, the City advised that the initial estimated annual demand for mattress recycling would be approximately 300 mattresses per year. Based on the amount of material received in 2023 and 2024, the annual estimated demand for recycling is currently estimated at 1,200 mattresses per year.

[4] Based on data provided from Recycl-matelas.



Figure 1: Location of Municipal Landfill



Figure 2: Scale House and Waste Diversion Drop-off Area

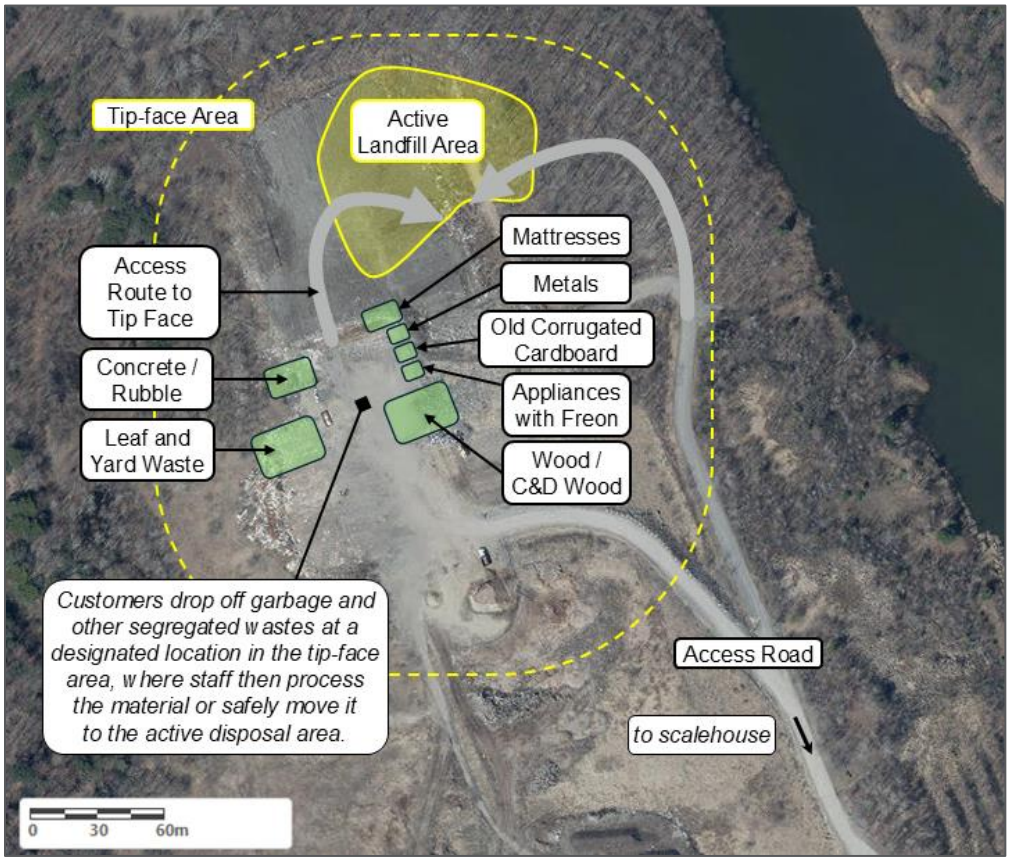


Figure 3: Landfill Tip-Face Area

4 Relevant Municipal Planning and Policies

There are a number of municipal and provincial policies and planning documents that provide relevant guidance for the Municipality's SWMS. These are reviewed below.

4.1 Clarence Rockland

4.1.1 Official Plans

There are three Official Plans (OP) that are used in governing the City of Clarence-Rockland. These include:

- Official Plan of the United Counties of Prescott and Russell - The County's OP directs the development of all areas of Clarence-Rockland and is the only Official Plan in effect for the rural and agricultural areas of the City, as well as the villages of Clarence Creek, Hammond, Cheney, Clarence Point and St-Pascal. The current Official Plan of the United Counties of Prescott and Russell came into effect in July 2023.
- Official Plan of the Urban Area of the City of Clarence-Rockland – This OP directs the future development of Rockland and was adopted in February 2021.
- Bourget Official Plan – This OP directs the future development of the village of Bourget and was adopted in 2014.

Table 4 identifies the key policies within these OP's relating to solid waste management in the City of Clarence-Rockland[5].

Table 4: Key Solid Waste Management Official Plan References

Official Plan of the United Counties of Prescott and Russell (2023)
• **Section 3.5 Waste Management Policy Area** – States that the objectives of providing waste management infrastructure services are to ensure waste management uses are environmentally sustainable and to provide appropriate waste management infrastructure that supports ongoing development. – Permits the following uses in Waste Management Policy Areas: 1) Existing municipal or private solid waste disposal sites; 2) Public or private wastewater disposal facilities; 3) Recycling and composting facilities; and 4) Waste transfer stations. – Notes that development within 500 metres (or less, where approved) of existing solid waste management sites will be discouraged unless supported by studies that confirm either the waste site will not have negative impacts on the proposed development nor will the proposed development impact future expansion of the waste disposal site. • **Section 7.7.6 Waste Reduction / Adaptive Re-use** – Section 7.7.6 is a Cultural Heritage policy whereby Council will support the reduction of waste from construction debris as a result of the demolition of buildings by promoting and encouraging the adaptive reuse of older and existing building stock.

[5] Note: this is a high-level summary and is not meant to be exhaustive of all policies that may direct or influence the management of solid waste in Clarence-Rockland.

- **Section 8.4.6 Special Policies—City of Clarence-Rockland Transfer Station**
  - Notes that the permitted land uses lands for the property described as Part of Lot 17 of Concession 5 in the former Township of Clarence (now in the City of Clarence-Rockland) also include a waste transfer station for the inter-vehicle transfer of sanitary sewage and the parking of those vehicles.

Official Plan of the Urban Area of the City of Clarence-Rockland (2021)

- **Section 4.24 Waste Management and Conservation**
  - Notes that the City of Clarence-Rockland has a recycling program, and that Council will continue to encourage good waste management practices and initiatives to make better use of resources.

Bourget Official Plan (2014)

- **Section 5.7 Waste Management**
  - Notes that development shall be reviewed to ensure that appropriate solid waste disposal services can be provided in a manner which is consistent with environmental considerations.

4.1.2 Collection of Waste Management By-law

By-law 2023-36 is the Municipality's Waste Management By-law. Key aspects of the by-law include:

- Definitions of the different types of waste allowed for collection or management within the Municipality's waste management system and acceptable collection containers.
- Container limits for curbside garbage collection (three plastic bags or two 90 litre containers) and a requirement for those that exceed the limit to use a bag tag.
- Description of materials not allowed for curbside collection (including construction/renovation/ demolition waste, boulders and concrete, fence and fencing material, electronics, and household hazardous waste, among other things).
- Requirement for all allowable recyclable waste placed for curbside collection to be segregated from garbage (either in a blue box or other acceptable form)[6].
- Acknowledgment that, as of July 1, 2023, the Blue Box Regulation made under the Resource Recovery and Circular Economy Act, 2016, mandates producers to operate and pay for the collection and reuse, refurbishment and recycling of blue box materials, and that Recyclable Material is not allowed to be set out in any of the waste stream collections provided by the City.
- Waste collection requirements for apartment buildings (i.e., buildings containing 4 or more rental units) and IC&I properties.
- Enforcement provisions.

4.1.3 Waste Disposal Site Management By-law

By-law 2018-48 is the by-law used by the City to regulate the management of the City's Waste Disposal Site. Key aspects of the by-law include:

- Definitions of the different types of waste regulated at the waste disposal site.

[6] The by-law notes that garbage set out for collection will not be collected if more than 10 percent of it is recyclable material .

- The site's hours of operation.
- Allocation of fee setting to the User Fees and Charges By- law.
- A list of materials prohibited from being deposited at the site, including (but not limited to):
  - Sludge from septic tanks or septage and hauled sewage;
  - Animal carcasses (other than what might typically be in kitchen waste);
  - Pharmaceuticals or dangerous chemical waste;
  - Sharps (i.e., needles);
  - Material originating from a material recovery facility (i.e., a MRF), unless authorized by the Director of Operations;
  - Any material under a landfill ban from any level of government to which the jurisdiction of the City of Clarence-Rockland is subject; and
  - Waste generated from outside the boundaries of Clarence-Rockland.
- Enforcement and penalties (including initial fines of up to $10,000 for a first offense and up to $25,000 for subsequent offenses for individuals, and up to $50,000 and $100,000 for first and subsequent offenses for businesses).

4.2 Provincial Legislation and Policies

Solid waste management in Ontario has, until recently, been regulated primarily through the Province's Environmental Protection Act (EPA) and Waste Diversion Act (WDA). This focus has shifted in recent years in response to the Province setting aspirational goals of achieving zero waste and zero GHG emission from the waste sector and moving towards a circular economy. These actions have resulted in significant change in the provincial regulatory framework including the introduction and repeal of several pieces of legislation that will have a direct impact on the Municipality's waste management system.

This section summaries important new legislation, provincial policy and guidelines that were considered in the development of the Municipality's new WMMP. The impacts of related Extended Producer Responsibility (EPR) programs and initiatives are also discussed. This action is intended to ensure the SWMS can effectively adapt and respond to future EPR programs and legislative changes.

4.2.1 The Waste-Free Ontario Act

In 2016, the Province passed the Waste-Free Ontario Act (WFOA), which repealed the WDA and replaced Waste Diversion Ontario with the Resource Productivity and Recovery Authority (RPRA). Despite the replacement of the WDA by the WFOA, regulations enacted under the WDA remain in force under the WFOA unless otherwise amended or repealed. Of significance, the WFOA includes two scheduled statutes known as the Resource Recovery and Circular Economy Act and Waste Diversion Transition Act. The WFOA was created to enact the details found within those two statutes. The WFOA provides further details on the responsibility of corporations that design, produce and market products or packaging to sell in Ontario, including that of convenience packaging and waste generated from the transportation of goods.

The Province also has broad discretion under the WFOA to create policies that support specific provincial interests outlined in the Act. Obligations described under the Food and Organic Waste Framework's Policy Statement, outlined below, highlight the fact that the Resource Recovery and Circular Economy Act (RRCEA) can, in some cases, override obligations under other Acts. Municipalities can, as is the case with the noted Policy Statement, be required to amend official plans, zoning by-laws and other by-laws to be consistent with the policy statements contained within the RRCEA.

4.2.2 The Resource Recovery and Circular Economy Act

The RRCEA replaced the previous EPR model developed under the WDA with a new 'individual producer responsibility' (IPR) framework for waste diversion and resource recovery where producers (i.e., a person or entity that supplies packaging, paper products or packaging-like products comprised of paper, glass, metal or plastic, or a combination thereof to consumers in Ontario) are individually accountable and financially responsible for their products and packaging once consumers dispose of them. The RRCEA provides the basis for the development of regulations, establishment of performance outcomes and operating standards. Like its predecessor, the aim of the act is to decrease the need for waste disposal through various methods such as recycling programs, extended product life cycle, decreased packaging and reduction of hazardous/toxic substances in products/packaging.

4.2.3 The Waste Diversion Transition Act

By comparison, the WDTA outlines the legislative framework for winding up and transitioning the existing waste diversion programs for tires, electronics, household hazardous waste and Blue Box recyclables to the new IPR framework. It also provides guidance for the operation of waste diversion programs, as well as outlines available funding. To date, the tire program operated by Ontario Tire Stewardship, Waste Electrical, Electronic Equipment program operated by Ontario Electronic Stewardship and the Municipal Hazardous or Special Waste program operated by Stewardship Ontario have been transitioned. Transition of Ontario's Blue Box Program has been initiated and is expected to be completed in 2026.

4.2.4 Blue Box Transition

Arguably, the most significant legislative change in recent years has been the Province's announcement June 3, 2021 that it had finalized O. Reg. 391/21 "Blue Box" (gazetted June 19, 2021). This new regulation triggered the transition of Ontario's Blue Box Program to an Individual Producer Responsibility (IPR) scheme for the management of printed paper and 'packaging-like' products. Under the new system, municipalities will no longer be responsible for the provision of Blue Box recycling services and the current funding system will end when municipalities transition to the new program. Instead, producers became obligated to develop and operate a new system to manage this designated waste. The new regulation includes a three-year transition of the current Blue Box Program to the new scheme between 2023 and 2025 (depending on the municipality) and will have direct impacts on municipal waste management services.

In Clarence-Rockland, management of the City's Curbside Blue Box Recycling program transitioned to Circular Materials Ontario (CMO) in July 2023.

It should also be noted that, in preparation for transition of the province's Blue Box Program, Minister of Environment, Conservation and Parks, Jeff Yurek, issued direction on August 15, 2019 that municipalities not reduce or expand their existing level of fundable Blue Box services except to deal with natural growth (i.e., new residential development). After the transition of the province's Blue Box program, it will be up to the producers to determine what Blue Box materials are diverted and how.

4.2.5 Food and Organic Waste Framework

Ontario's Food and Organic Waste Framework (the Framework) was developed as a key component of the Province's Strategy for a Waste Free Ontario. The Framework is structured in two parts including the Food and Organic Waste Framework Action Plan (Action Plan), and the Food and Organic Waste Policy Statement (Policy Statement). As implied by its title, the Action Plan lays out a series of 17 proposed initiatives intended to:

- Reduce food and organic waste;

- Recover resources from food and organic waste;
- Support resource recovery infrastructure; and
- Promote beneficial uses of recovered organic resources.

The majority of the action items focused on immediate opportunities to work with federal and provincial partners to facilitate the goals of the framework. Longer term objectives of significance include commitments to:

- Amend the 3Rs Regulations to include food and organic waste to increase recovery from the IC&I sector;
- Ban food and organic waste from disposal sites;
- Support recovery from multi-unit residential buildings;
- Promote on and off-farm end-use soil amendments from recovered organic resources; and
- Support development of renewable natural gas including consideration for linkages to food and organic waste.

The associated Policy Statement, issued pursuant to Section 11 of the RRCEA, 2016, supports the provincial vision of a circular economy and is an important tool to help move the province towards its aspirational climate change goals. Section 2 of the Policy Statement sets out specific obligations and targets for the diversion of food and organic waste from various persons or entities including certain municipalities, industrial and commercial facilities, multi-unit residential buildings, educational institutions and hospitals. Of particular note, policy 4.2 requires the following:

> *4.2 Municipalities in Southern Ontario that, as of the effective date, do not provide curbside collection of source separated food and organic waste shall provide:*
>
> > *i. Curbside collection of food and organic waste to single-family dwellings in an urban settlement area within a local municipality if the population of the local municipality is greater than 50,000 and the population density of the local municipality is greater than or equal to 300 persons per square kilometre.*
> >
> > *ii. Collection of food and organic waste to single-family dwellings in an urban settlement area within a local municipality if:*
> >
> > a. *The population of the local municipality is greater than 50,000 and the population density of the local municipality is less than 300 persons per square kilometre; or*
> >
> > b. *The population of the local municipality is greater than 20,000 but equal to or less than 50,000 and the population density of the local municipality is greater than or equal to 100 persons per square kilometre.*

As of the 2021 census, the City's population is 26,505, which is less than the population threshold noted Policy 4.2.i or in Policy 4.2.ii.a, but greater than the population threshold noted in Policy 4.2.ii.b. However, the population density of the City is 89 people per square kilometre. While this is slightly lower than the threshold of 100 people per square kilometre, the City will reach this density once it has a population of 29,747. According to the City's 2024 Development Charges Background Study, the estimated population of the City in 2023 was 27,153, with a projected population of 30,435 by 2033. As such, ***Policy 4.2 will likely be applicable to the City within the next five years***.

Furthermore, Section 2.1 requires that Municipalities in Southern Ontario that are subject to policy 4.2ii achieve a:

> *50% waste reduction and resource recovery of food and organic waste generated by single-family dwelling in urban settlement areas by 2025.*

The Policy Statement also addresses food and organic waste from multi-unit residential buildings. Specifically, Policy 4.10 requires that:

> *Multi-unit residential buildings shall provide collection of food and organic waste to their residents.*

Additionally, Section 2.1 requires that such buildings achieve a:

> *50% waste reduction and resource recovery of food and organic waste generated at the building by 2025.*

The Policy Statement also requires that municipalities and other planning authorities ensure that official plans are consistent with the Policy Statement with amendment of official plans occurring within the next scheduled update. Municipal zoning by-laws must also be amended within three years after the related official plan amendment. By-laws made under other acts related to waste reduction and resource recovery, as well as relevant prescribed instruments, must also be made consistent with the proposed Policy Statement within two years of the proposed Policy Statement coming into effect.

4.2.6 The 'Made-in-Ontario Environment Plan'

The 'Made-in-Ontario Environment Plan' was announced by the Province in 2018 to supersede the former government's 'Waste-Free Ontario Strategy'. While it continues to support the notion of achieving zero waste and GHG emissions reduction, it places particular emphasis on moving to a circular economy, addressing litter, reducing plastic waste and preparing for climate change. The government envisions taking steps to, amongst other things, update the Strategy for a Waste-Free Ontario, continue to focus on diverting food and other recoverable waste from landfill, address compostable packaging and improve opportunities for landfill gas capture.

At the time of this study, no direct action is required of the Municipality beyond the program and service changes already under consideration in the development of the SWMP.

5 Waste Composition

This section provides an overview of what type of solid waste materials are being generated, disposed and diverted in Clarence-Rockland. Section 5.1 focuses on residential garbage and recycling, followed by a profile of the City's entire solid waste management system in Section 5.2. This is followed by Section 5.3, which summarizes the list of materials that have the greatest potential for increasing the amount of solid waste diverted in Clarence-Rockland.

5.1 Residential Garbage and Blue Box Composition

Garbage

As noted previously, the City collected about 6,063 tonnes of curbside garbage in 2024, which includes both residential garbage as well as from bagged commercial garbage (i.e., the small IC&I generators that set out 10 bags or less of garbage for municipal collection). The amount of garbage generated by the small IC&I customers is about 1,500 tonnes annually, with the remaining 4,563 tonnes of garbage coming from the residential sector. This waste is disposed at the City's landfill. The composition of this waste was estimated based on a proxy waste composition profile based on waste audit data collected through the CIF/SO Waste Composition Study program. The profile was built using waste audit data from Rural Collection-South municipalities that participated in years 4, 5 and 6 of the program. Data from other municipalities were also used to prepare estimates of household organics and textiles in the City's waste stream. As the following chart shows, nearly half (52%) of the remaining waste in the garbage stream is estimated to be household organics[7], such as kitchen waste and tissue and toweling. About 14% is comprised of Blue Box recyclable materials, including printed paper, paper packaging, plastics, metals, and glass.

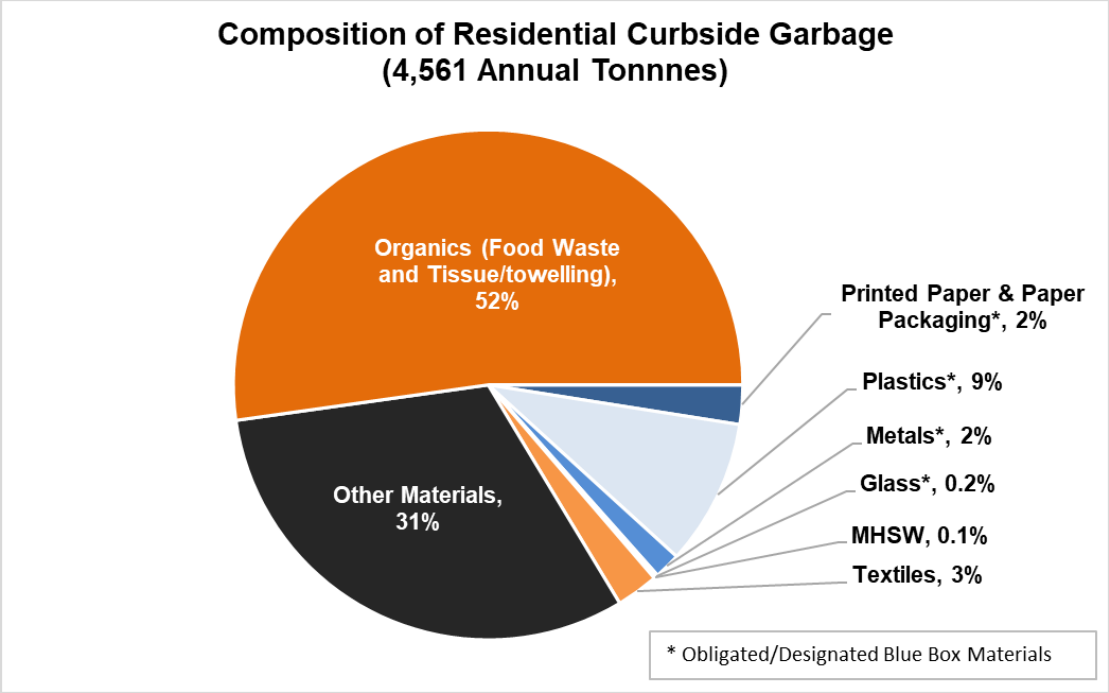


Figure 4: Typical Composition of Curbside Residential Garbage

***** *Refers to Blue Box materials*

[7] Does not include yard waste.

Curbside Blue Box Recycling

As noted previously, about 1,782 tonnes of residential Blue Box material was collected for recycling in 2023. Based on the available data, this includes:

- 331 tonnes of printed paper;
- 654 tonnes of paper packaging, such as corrugated cardboard, boxboard and polycoat materials;
- 353 tonnes of plastics (including PET, HDPE, plastic film, tubs and lids, polystyrene and mixed plastic);
- 150 tonnes of metal (including steel and aluminum); and
- 294 tonnes of glass (including flint and coloured glass).

5.2 Clarence-Rockland Solid Waste Profile

Based on the City's available waste management data and waste audit data from the CIF/SO Waste Composition Study program, a profile that describes the amount of solid waste generated in Clarence Rockland (2023) was prepared. This profile is presented in the following table and estimates how much of each material is generated as municipal solid waste in the City. The table also indicates how much of this material is diverted, what the resulting capture rate is (i.e., what percentage of the material is captured for diversion), and how much is therefore available for additional diversion.

Table 5: Municipal Solid Waste Composition Profile for the Municipality of Clarence-Rockland (2023)

Waste Material	Composition (%)	Waste Material Generated (tonnes)	Current Diversion (tonnes)	Capture Rate (%)	Available for Additional Diversion (tonnes)
Blue Box Paper and Paper Packaging	5.7%	1,098	985	90%	114
Blue Box Metals	1.3%	252	176	70%	76
Blue Box Plastics	4.1%	781	359	46%	422
Blue Box Glass	4.6%	874	865	99%	9
WEEE	0.1%	20	20	100%	0
Household Special Waste	0.3%	55	52	94%	3
Household Organics *(Food Waste and Tissue/Toweling)*	14.0%	2,678	296	11%	2,382
Yard Waste	13.0%	2,477	2,477	100%	0
Textiles	0.7%	128	6	5%	122
Scrap and Other Metal	1.0%	196	154	78%	42
Bulky Item Collection	0.01%	2	-	-	-
Residue in Curbside Garbage *(This includes the remaining material in residential curbside garbage)*	7.3%	1,396	-	-	-
Tires	0.2%	42	42	100%	0
Propane Tanks	0.0%	2	2	100%	0
Mattresses	0.4%	77	77	100%	0
C&D Waste	6.0%	1,143	-	-	-
Garbage (bagged commercial)	8.9%	1,500	-	-	-
Garbage (binned commercial)	7.4%	1,058	-	-	-
Garbage (landfill drop-off)	27.9%	5,339	-	-	-
Total	**100.0%**	**19,118**	**5,515**	**28.8%**	**3,166**

5.3 Diversion Opportunity Summary

In 2024, an estimated 19,118 tonnes of residential and other solid waste was generated in Clarence-Rockland and managed by the City. Of this, about 28.2% was diverted from landfill disposal through City and stewardship programs and on-site residential practices. Key opportunities for increased waste diversion include:

- **Source-separated organics (SSO)** - approximately 2,382 tonnes of residential household organics is available for diversion, as well as any other organics that are generated by (but not quantified here) with solid waste commercial properties (such as restaurants). Capturing 50% of this residential material would divert about 1,191 tonnes of additional material from disposal annually. Mature municipal SSO programs in Ontario capture between 40% to 65% of residential household organics from households, based on available data from the CIF/SO waste composition program.
- **Blue Box materials** – Approximately 621 tonnes of obligated Blue Box materials are available for diversion from the residential garbage, and likely more from the commercial waste.
- **Textiles** – Clarence-Rockland's residential garbage includes approximately 122 tonnes of textiles annually.
- **Scrap metal** – Approximately 42 tonnes of scrap metal may be available for diversion annually from residential solid waste.

Other opportunities for diversion likely exist within the City's commercial waste and garbage dropped off at the landfill, the composition of which has not been assessed.

Options for diverting these and other wastes - as well as options for waste reduction and reuse - are discussed in the following section.

6 Screening of Solid Waste Management Options Long List

There are a number of options available to Clarence-Rockland to reduce and divert waste from disposal. The options have been preliminarily screened for the development of an options short-list. The options were screened based on the following criteria:

- Diversion Potential / Critical for Supporting Diversion – this considers what potential the options have for diverting waste from the City's landfill[8], if they improve the management of toxic or hazardous wastes, or if they are a policy or other element critical or otherwise very beneficial in supporting waste diversion.
- Cost Efficiencies/ Savings Potential – if the option has the potential to improve program efficiencies or otherwise contribute to program cost savings.
- Implementation Cost – the relative magnitude of the cost of implementing the option.
- Approach Innovation and/or Reliability – whether the approach is innovative or has otherwise been shown to be a reliable or well-established solid waste management option.

The results of the screening are provided in Appendix B. Table 6 describes the options being considered and indicates their recommendation for inclusion on the short-list.

Table 6: Review of Solid Waste Management Options and Recommendations for Short List Evaluation

No.	Option and Description	Recommended for Short List Evaluation?
	WASTE REDUCTION AND REUSE	
1.	**Promote on-site management of organics** Foster greater uptake of backyard composting and grasscycling through the increased promotion of backyard composting and grasscycling.	**Y**
2.	**Supporting Waste Minimization and Diversion at Special Events** Develop resources and opportunities for events hosted by the City or at City facilities that encourage waste minimization and diversion. This may include toolkit, partnership/vendor opportunities that result in waste minimization, and other promotion/education initiatives.	**Y**
3.	**Support Community Reduce and Reuse Programs** Develop and implement a policy that will provide greater support for programs led by community groups and non-profit organizations that drive reuse and waste reduction. This may include repair cafes, which are free events that bring together those with broken items and those who can fix them.	**Y**
4.	**Establish a Lendery Program** A Lendery is like a library where you sign out items rather than books. These items are things needed at the moment but are not required to be owned. Lendery membership entitles one to borrow a wide range of items, such as camping equipment, party supplies, small kitchen appliances, sports equipment, tools, toys and games, and yard/garden tools.	**N**

[8] This includes redirecting waste from the City's landfill to a private facility for disposal or other management there.

No.	Option and Description	Recommended for Short List Evaluation?
5.	**Curbside Give Away Weekends** Expand use of the existing Curbside Give Away Weekends, where residents are invited to place unwanted items, labelled FREE, at the curb for other residents and community members to browse and take for their own use, free of charge. Tools, such as posters and other promotional material, could be developed to help residents promote the material.	Y
6.	**Subsidies, Rebates, Grants for Actions that Avoid, Reduce, or Reuse Waste** A subsidy, rebate or grant to local residents, resident groups or non-profit organizations could be provided for actions, ideas or programs that avoid, reduce or reuse waste.	N
	RECYCLING	
7.	**Increase the number of waste diversion special events.** Increase the number of special events (held either by the Municipality or by Producer Responsibility Organizations) to increase the capture of steward materials (e.g., electronics, household hazardous waste, used oil, etc)	Y
8.	**Add additional materials to the municipal recycling program** Consider the feasibility of adding additional items to materials accepted for recycling by the Municipality (outside of the Blue Box program). The assessment should consider whether the material(s) would be collected at curbside, landfill site, or via depots.	Y
9.	**Textile recycling** Consider opportunities for collection, and recycling or reuse of textiles. This could include collaboration with local textile reuse organizations or the recovery of textiles for recycling into new textiles.	Y
10.	**Agricultural waste diversion** While not a waste stream currently managed by the Municipality, it could work with the local agricultural community to help identify and act on opportunities for the recycling of agricultural wrap and diversion of other materials.	N
11.	**Curbside battery recycling** Work with stewardship organizations to undertake curbside battery collections[9].	Y

[9] As of July 1, 2020, following the wind up of Stewardship Ontario's battery recycling program on June 30, 2020, battery producers are individually accountable and financially responsible for collecting and reusing, refurbishing or recycling their batteries when consumers discard them. Some municipalities have partnered with stewardship organizations (such as Environmental 360 Solutions or Call2Recycle) for curbside battery collection programs.

No.	Option and Description	Recommended for Short List Evaluation?
	ORGANICS MANAGEMENT	
12.	**Introduce household (food and kitchen waste) organics collection and composting** Implement a household (food and kitchen waste) organics collection and composting program. This would include development of a multi-pronged curbside organics diversion strategy to maximize the capture of household organics through a source-separated organics program. The strategy could include: • Research on behaviour and barrier identification (waste audits, behaviour and attitude research, etc.); • Identification of methods for removing or addressing the identified barriers (e.g., promotion and education, tools etc.); and • Implementation.	**Y**
13.	**Conduct further pilot testing of foodcycler-style home composting appliances.** A broader foodcycler test pilot could be conducted on a street, neighbourhood or community level (or census area). The pilot should include a methodology for: • Quantifying/measuring participation of households; • Quantifying/measuring the amount of organics diverted; • Surveying participants on their attitudes toward use of the appliance; and • Comparison of measured results against baseline or control data.	**Y**
14.	**Implement a Food Waste Reduction Strategy** Develop and implement a food waste reduction strategy, either by licensing a program such as WRAP UK's *Love Food, Hate Waste*[10] or creating a unique program to educate residents about food waste reduction. WRAP UK's Love Food Hate Waste campaign has expanded internationally to places like Australia and has been licensed for use in Canada[11] by Metro Vancouver, the City of Toronto and other project partners. Sustain Ontario has also developed a municipal toolkit for reducing household food waste[12]. Collaborate with the food industry, Public Health and non-profit agencies to direct food to charities and food banks and to provide educational programs geared towards supporting residents in changing food waste behaviour. As an example, Foodsharing Ottawa was founded in 2015 to reduce the amount of food that gets thrown away by providing and promoting alternative local uses. This includes providing surplus food rescue services to local grocery stores and restaurants and donating the food back to the community where it is needed[13]. This could also include food waste reduction initiatives to educate residents and build awareness of food waste and its impact. Examples of initiatives include virtual or in-person waste-free cooking classes or events, rapid messaging about food waste and Green Bin use at events such as Farmers' Markets, expanding existing P&E campaigns and materials, creating educational material regarding meal planning, how to tailor grocery shopping to avoid impulse buys, and how to properly transport and store perishable food.	**Y**

[10] https://www.wrap.ngo/take-action/love-food-hate-waste
[11] https://lovefoodhatewaste.ca/
[12] https://sustainontario.com/greenhouse/resource/reducing-household-food-waste-a-municipal-regional-toolkit/
[13] https://foodsharingottawa.com/

No.	Option and Description	Recommended for Short List Evaluation?
	WASTE COLLECTION/RECEIVING	
15.	**Assess garbage collection frequency (every other week collection)** Collect garbage every other week (EOW) rather than every week.	**Y**
16.	**Assess collection using carts** Assess the feasibility of converting to a cart-based collection system for garbage and (when applicable) source-separated organics recyclables. The assessment could consider the feasibility of introducing automated or semi-automated curbside cart collection (for inclusion in future collection contract).	**Y**
17.	**RFID Technology on Waste Collection Containers** Equip waste collection containers with radio-frequency identification (RFID) capabilities to gain information about collection services and performance and ensure systems are in place to capture information on vehicles or programs (for inclusion in future collection contract).	**Y**
18.	**Pilot-test Alternative Collection Containers in Public Spaces** Review the use of alternative waste collection containers in parks and public spaces across the City. This could include containers such as in-ground collection, plastic front-end load containers, multi-stream containers, and waste bins with solar compactors to improve collections efficiency and/or aesthetics and is applicable to City parks, including for dog waste, other public spaces. In-ground collection containers could also be installed at multi-residential properties; however, this would be at the discretion of property owners/developers.	**N**
19.	**Zero or Low Emissions Solid Waste Fleet** Identify opportunities for incorporating requirements for a zero or low emissions solid waste fleet in future collection contract.	**Y**
	PROMOTION AND EDUCATION	
20.	**Conduct targeted/expanded promotion and education** Develop/implement targeted promotion and educational campaigns, and expand the municipality's current educational activities through a Promotion and Education Strategy. This could include: • Improving diversion of specific items through targeted campaigns; • Implementing incentive/recognition programs for exceptional recycling by households, businesses or organizations; • Enlisting the help of "community champions"; • Enhancing the existing municipal website with online waste management information tools such as an environmental impact calculator; • Increasing education and presentations to schools and other organizations; • Enhancing targeted promotion and education in multi-residential buildings; and • Expanding waste management promotions at public events.	**Y**
21.	**Develop branding for the Solid Waste Management Section / Program** Develop a brand that provides a consistent program look and messaging throughout municipal waste reduction initiatives.	**Y**

No.	Option and Description	Recommended for Short List Evaluation?
22.	**Enhance Social Media Presence and use of Apps** Provide greater use of solid waste messaging in the City's social media. Investigate SmartPhone apps that can help to remind residents of waste management services and diversion opportunities. Enhance The City's website to provide more information related to the City's waste reduction and waste management services, and incorporating more interactive features.	Y
23.	**Promote "Green" purchasing and Green Procurement** Promote green purchasing / procurement practices among municipal departments, local businesses and the general public. This may include: promotion of precycling; promotion of the link between purchasing decisions and waste/the environment; educating businesses on green purchasing practices for their sector, etc.	Y
24.	**Encourage Extended Producer Responsibility** Encourage greater EPR. Participate in lobby efforts at the provincial and federal level to increased EPR. Promote existing EPR opportunities, such as existing take-backs, and provincial EPR programs (e.g., Orange Drop, WEEE, MHSW, etc.)	Y
25.	**Toolkit for Waste Diversion in Multi-Residential Buildings** Develop a toolkit to help residents and building managers implement or improve waste diversion programs for apartment buildings and condominiums.	N
26.	**Conduct periodic multi-season waste audits** Multi-season waste audits conducted periodically (e.g., every 2 to 4 years) would provide the Municipality with quantifiable data that would help it better understand what wastes are going to landfill that could otherwise be diverted. This information would allow the Municipality to assess the diversion performance of the Blue Box stewards and to adjust other aspects of its solid waste management program.	Y
	MUNICIPAL POLICY	
27.	**Introduce / reduce maximum bag limit** Limit or reduce the total number of garbage bags that households can set out at the curb for collection, including the number of bags with garbage tags.	Y
28.	**Increase the cost per bag tag** Increase the cost per bag tag.	Y
29.	**Shift to full user pay** Reduce the number of garbage bags or bins that can be set out at the curb without a garbage tag.	Y
30.	**Enforcement of Waste Collection By-Law** Update and enforce the applicable elements of the existing Waste Collection By-Law. Add guidelines to encourage diversion and provide municipal staff with the legal means to enforce desired behaviours (e.g., source separation) and curtail undesired behaviours (e.g., scavenging).	Y
31.	**Differential tipping fees** Increase financial incentives for increasing segregation and diverting recyclable and compostable materials through a system of differential tipping fees at the landfill site.	Y

No.	Option and Description	Recommended for Short List Evaluation?
32.	**Clear Garbage Bags** Switch from opaque to clear garbage bags, which has been shown to increase the amount of waste diverted through recycling and composting programs. Clear bag garbage programs are increasingly common in Ontario and other Canadian municipalities.	Y
33.	**Reduction Strategies and Bans for Single-use Items** Develop a strategy to eliminate or reduce single-use plastics (SUPs), which may include banning items such as plastic shopping bags and polystyrene foam cups and takeout containers.	Y
34.	**Preparation of Multi-Residential development standards** Consider updating existing multi-residential development standards or other related guidelines to ensure multi-residential developments or retrofits include consideration of waste diversion.	N
35.	**Update Waste Performance Metrics** Consider new metrics for measuring the success of the waste management programs, such as carbon footprints of different waste streams.	Y
36.	**Mandatory Waste Diversion in all City Facilities** Implement mandatory waste diversion in all City facilities, including diversion of recyclables, organics, electronics, hazardous waste (e.g. batteries, hazardous waste from City operations), and other materials such as textiles and C&D materials. This could be implemented through a by-law or administrative policy.	Y
	IC&I	
37.	**Promotion of waste minimization/diversion in the IC&I sector** Develop a strategy to encourage the local Industrial, Commercial and Institutional community to increase waste minimization/diversion. Possible strategy elements may include: a recognition program; incentives for environmental leadership (e.g., becoming registered in RCO's #3RCertified program); forming a sector-specific waste minimization working group; form partnerships with local NGO's to help deliver outreach; distribute/promote already existing tools and resources; include waste diversion/management clauses in municipal permits, etc.	N
38.	**Further or complete reduction in provision of waste collection services to IC&I sector (or portions of it)** Require all businesses to obtain private waste collection services.	Y
39.	**Establish a system for Construction and Demolition (C&D) recycling** Develop a strategy for C&D recycling. Elements of the strategy could include partnering with private sector facilities or establishing a depot to receive/sort/process C&D waste for diversion; policy instruments to encourage C&D recycling; promotion of a municipal program, and implementation of C&D waste diversion best practices.	Y
40.	**Divert C&D Materials from Landfill Site either through landfill fees or bans** Encourage diversion of C&D materials from the landfill site to private facilities through banning their disposal at the landfill by contractors or by increasing their relevant tip fees.	Y

No.	Option and Description	Recommended for Short List Evaluation?
41.	**Partnership with COIL Zero Waste Economic Transformation Lab** The City of Guelph, Wellington County and the Guelph Smart Cities Office launched the Zero Waste Economic Transformation Lab, a new initiative under the Circular Opportunity Innovation Launchpad (COIL). It will apply place-based circular economy strategies to develop and test new opportunities to reduce or redirect waste from sectors across the economy, starting with construction, renovation and demolition (CRD) materials. COIL is looking to develop and test system changes that will create a more circular CRD industry	**N**
	OTHER OPPORTUNITIES	
42.	**Explore multi-municipal partnerships for waste management services** Explore opportunities for partnerships with other municipalities/regionalization of services that will make waste management activities more effective and efficient. This may include shared collection and processing contracts or facilities.	**Y**
43.	**Assisted Waste Collection Services** Assisted waste collection services are municipal support services provided to residents who have temporary or physical disabilities and are unable to set waste at the curb for collection. These programs help to promote independent living and reduce the risk of injury to those who need such physical assistance.	**N**
	DISPOSAL/PROCESSING	
44.	**Future Expansion of Landfill Site** The City's landfill site has an approved capacity of 974,000 m^3. The City's 2024 annual monitoring report estimates that it has about 478,000 m^3 of disposal capacity remaining, or about 41years of estimated site life. Future expansion of the landfill would extend its lifespan, which may either require or be benefited by acquisition of the landfill site's adjacent properties. The approximate cost of obtaining the necessary approvals for this expansion (excluding construction) would be in the order of $100,000 to $150,000.	**Y**
45.	**Develop a new landfill site** Site and build a new landfill to secure long-term disposal capacity for the municipality. The new landfill could be exclusively for the Municipality's own use, or it could be designed for use as a regional landfill that accepts waste from other municipalities in the region. Establishing a new landfill would require an Environmental Assessment (EA) to be completed, which would consider a variety of technical, social, environmental and economic factors. The EA and subsequent design and approvals process would likely be about a decade to complete before construction could begin. This planning process could be extended if the new landfill project is contentious. The cost to identify, design, approve, and construct a new landfill site may be in the order of $15 million to $25 million, depending on the facility's size, use, and complexity.	**N**

No.	Option and Description	Recommended for Short List Evaluation?
46.	**Develop an Energy from Waste facility** While Energy-from-Waste (EfW) facilities are not very common in Canada, they are regularly used in waste management systems in the United States and other countries. While EfW does not replace the need for a landfill, it significantly reduces the volume of waste requiring disposal, thereby minimizing landfill space. Examples of EfW facilities in the GTA include the Durham York Energy Centre in Clarington and the Emerald Energy from Waste facility in Brampton. There are two broad categories of existing thermal treatment: conventional combustion technologies and advanced thermal treatment technologies. Conventional combustion technologies include mass burn incineration, controlled air systems, and others, with mass burn being the most common. Advanced thermal treatment technologies, which are generally less proven and more technologically complex, include gasification, pyrolysis and plasma arc gasification. Clarence-Rockland would have insufficient annual tonnages to achieve any economy of scale for an EfW facility. Therefore, the Municipality's participation in EfW would need to be done so in partnership with other municipalities.	**N**
47.	**Develop a Mechanical Biological Treatment facility** Develop a Mechanical Biological Treatment facility within the Municipality to process and stabilize its solid waste. Recyclable materials are sorted out of the garbage stream, which then goes through a stabilization process where the organics are rendered essentially inert. This reduces the volume of the waste requiring disposal and removes most if not all of its water content. This in turn reduces the quantity of leachate generated by the waste once disposed. Clarence-Rockland would have insufficient annual tonnages to achieve any economy of scale for such a facility.	**N**
48.	**Export garbage to a different landfill** When the municipal landfill is nearing capacity, the Municipality could investigate disposal of its waste at a private disposal facility or at the disposal facility of another municipality.	**Y**

7 Solid Waste Management Options Discussion and Recommendations

The previous section identified a suite of options to be include di the short list of options considered for the City's Solid Waste Management Strategy. This section includes a discussion on the various options and recommendations on whether or how they should be implemented and suggested steps for implementation. Table 7 provides a summary of the recommendations.

Table 7: Summary of Solid Waste Management Strategy Recommendations

Option and Description	Recommendations Arising from Option	Short Term 1-5 Year	Mid Term 5-10 Year	Long Term 10-25 Year	Revisit Next SWMS
Waste Reduction and Reuse					
Promote on-site management of organics	1. Reintroduce the sale of subsidized backyard composters and associated products, including compost aerators and digesters. 2. Include promotion and education of backyard composting within the City's Waste Diversion Promotion and Education Strategy.	✓			
Supporting Waste Minimization and Diversion at Special Events	3. Work with the City's facility managers to develop and implement a protocol to be used in helping event organizers at City facilities incorporate waste minimization into their planning. This would include: a. Identify an existing Zero Waste Event (or similar) planning guide suitable for use in Clarence-Rockland to include in the protocol. b. Develop (or identify) a directory of providers that provide goods and services suitable for Zero Waste Events at City facilities. This effort could potentially be undertaken by a non-governmental organization in the Ottawa or eastern-Ontario area. 4. Incorporate these items into a Waste Management Promotion and Education Strategy.	✓			
Support Community Reduce and Reuse Programs	5. Promote Community Reduce and Reuse Programs through the City's solid waste communications. This could include a searchable directory of programs and drop-off locations.	✓			
Curbside Give Away Weekends	6. Continue and expand the Curbside Give-away event.	✓			

Option and Description	Recommendations Arising from Option	Short Term 1-5 Year	Mid Term 5-10 Year	Long Term 10-25 Year	Revisit Next SWMS
Recycling					
Increase the number of waste diversion special events	7. In lieu of holding waste diversion special events, promote the use of existing retail and depot drop-off locations.	✓			
Add additional materials to the municipal recycling program	8. Continue to be open to opportunities for diverting additional materials from disposal. Assess the opportunities based on their logistical and economical sustainability and diversion potential. 9. Once sufficient time has passed with management of the Blue Box program under management by Circular Materials and an organics diversion program is in place, actively pursue new opportunities and innovations for waste diversion.		✓		
Textile recycling	10. Actively promote community textile reuse and recycling programs through the City's solid waste communications. This could include a searchable directory of programs and drop-off locations. 11. Undertake a pilot program for the curbside collection of textiles, based on the experiences of the pilot in the Kawartha Lakes.	✓	✓		
Curbside battery recycling	12. Include curbside battery collection as an option within the next solid waste collection tender.	✓			
Organics Management					
Introduce household (food and kitchen waste) organics collection and composting	13. Initiate the planning process for curbside SSO collection in the first 5-year timeframe. 14. Implementation of the program in the subsequent 5-year timeframe	✓	✓		
Conduct further pilot testing of foodcycler-style home composting appliances.	15. Run a focused pilot using Foodcycler-style appliances within a measurable area, with support from a provider of the appliance or other funding source.	✓			
Develop and Implement a Food Waste Reduction Strategy	16. Continue to follow the food-waste reduction programs underway in Ontario. 17. As necessary, incorporate messaging into the on-going promotion and education. 18. Develop a strategy in the mid-term to coincide with organics roll-out.		✓		

Option and Description	Recommendations Arising from Option	Short Term 1-5 Year	Mid Term 5-10 Year	Long Term 10-25 Year	Revisit Next SWMS
Waste Collection/Receiving					
Assess garbage collection frequency (also includes assessment of collection using carts, RFID Technology on Waste Collection Containers, and Zero or low emissions solid waste fleet)	19. Assess EOW garbage collection as well as use of carts and fleet considerations in greater detail as part of the implementation of the SSO program development. 20. Either implement in concert with an SSO program or incorporate as required into a future solid waste collection contract.		✓		
Promotion and Education					
Solid Waste Management Promotion and Education Strategy (includes branding for the Solid Waste Management Section / Program, Enhance Social Media Presence and use of Apps, and Promote "Green" purchasing and Green Procurement)	21. Develop and implement a comprehensive Solid Waste Management Promotion and Education Strategy.	✓			
Encourage extended producer responsibility	22. Continue to monitor and participate in product stewardship and EPR activities. 23. Monitor for potential gaps in how stewardship waste diversion programs are promoted in Clarence-Rockland and address through the City's communications initiatives.	✓			
Conduct periodic multi-season waste audits	24. Undertake sorted waste audits every two to four years. 25. Undertake visual waste audits as required for issue areas.	✓			
Municipal Policy					
Introduce maximum bag limits	26. Introduce a maximum bag limit for how many bags or containers of waste can be set out for collection.	✓			
Increase Cost of Bag Tags	27. Monitor need for bag tag cost increases annually with operational and capital budget reviews. 28. Obtain curbside set-out data assessing the number of households that set out 1, 2, 3, and 4 or more bags/containers of garbage. 29. Decrease the limit of garbage bags allowed for set out without a bag tag, from three bags to two. 30. Annually review the suitability of the garbage tag fee in conjunction with a review of the number households setting out 1, 2, 3 and 4 or more garbage bags out for collection per week.	✓			

Option and Description	Recommendations Arising from Option	Short Term 1-5 Year	Mid Term 5-10 Year	Long Term 10-25 Year	Revisit Next SWMS
Transition to full user pay	31. Undertake feasibility assessment for full user pay for garbage collection. Assessment should consider: • Implementation timing with garbage collection contract and curbside organics collection. • Fee structures for cost recovery. • Recommendations for implementation. 32. Depending on results from feasibility assessment, prepare implementation plan for transition to full user pay.		✓		
Enforcement of Waste Collection By-Law	33. Monitor waste collection bylaw semi-annually to ensure bylaw clauses align with desired waste management practices and provincial legislation. 34. Update the Waste Collection By-Law to ensure it accurately describes how solid waste should be segregated and set out for collection. The update should ensure there are adequate provisions and penalties to allow for the bylaw's enforcement. 35. Supply bylaw enforcement staff with guidelines to encourage diversion. Provide municipal staff with the legal means to enforce desired behaviours (e.g., source separation) and curtail undesired behaviours (e.g., scavenging). 36. Review and coordinate solid waste related-fee schedules.	✓			
Clear garbage bags	37. Initiate the transition of the City's garbage collection program to require use of clear garbage bags. Prepare an implementation plan that considers: • Preferred timing of the transition to clear bags, in consideration of other changes to the City's solid waste management system (e.g., implementation of weekly organics collection and EOW garbage collection). • Use of a transition period that allows for promotion and education about the change and allows residents to use up stockpiled black garbage bags. • Engagement of retailers and bag suppliers.	✓			

Option and Description	Recommendations Arising from Option	Short Term 1-5 Year	Mid Term 5-10 Year	Long Term 10-25 Year	Revisit Next SWMS
Reduction Strategies and Bans for Single-use Items	38. Develop a strategy to eliminate or reduce single-use plastics. 39. Ensure the Solid Waste Management Promotion and Education Strategy supports activities and initiatives related to reduction strategies and bans for single-use items.	✓			
Update waste performance metrics	40. Identify a suite of key performance indicators (KPIs) for evaluating the City's solid waste management program. 41. Incorporate the KPI into the City's waste management evaluation and reporting.	✓			
IC&I					
Reduction in Provision of Waste Collection Services to IC&I sector	42. Extract the City from providing solid waste collection services to IC&I sector clients. As feasible, assist the clients with transitioning to alternative private sector service providers.	✓			
Establish a system for Construction and Demolition (C&D) recycling	43. Develop a strategy for C&D recycling. Elements of the strategy could include: • Partnering with or promoting of private sector facilities. • Establishment of a specialized depot to receive, sort and process C&D waste for diversion. • Policy instruments to encourage C&D recycling. • Implementation of C&D waste diversion best practices. • Disposal bans for C&D waste at the City's landfill, or discouragement of their disposal at the City's landfill through increased tip fees.		✓		
Other opportunities					
Explore multi-municipal partnerships for waste management services	44. Continue exploring multi-municipal partnerships for the collection and processing of waste, as well as other aspects of managing solid waste in Clarence-Rockland.	✓			
Disposal					
Future Expansion of Landfill Site	45. Review options for purchasing land adjacent to the landfill boundaries. 46. Review the need for and suitability of landfill expansion in subsequent SWMS updates.	✓			✓
Export garbage to a different landfill	47. Review the need for and suitability of waste export for disposal in subsequent SWMS updates.				✓

7.1 Waste Reduction and Reuse

7.1.1 Promote on-site management of organics

Centralized organics programs such as the composting of household source separated organics (SSO) and leaf and yard waste yard waste organics can divert significant amounts of solid waste from disposal and provide environmental benefits. Another staple approach in Ontario for diverting organics is backyard composting (BYC) and grasscycling. These programs have the benefit of diverting organics from landfill without incurring any collection or processing costs.

Backyard Composting

Backyard composting is, essentially, the composting of home and kitchen organics (such as fruit and vegetable peelings, coffee grinds and eggshells) in a backyard composter (BYC). This is a voluntary activity, and many municipalities try to encourage it through promotion and education, and by offering subsidized or free backyard composters. Various municipalities find that residents still utilize their green bins, as meat and dairy products should not be placed in a BYC for composting due to the potential for odour and pests.

While the City did offer backyard composters in the past, it no longer does so.

An example of a comprehensive backyard composting promotion and education program can be found with the Township of Langley in British Columbia (https://www.tol.ca/en/services/backyard-composting.aspx). The Township conducted a Community-Based Social Marketing backyard composting study in 2010 and identified the following as potential barriers to participation:

- The convenience of other disposal methods, such as the garbage or a garburator;
- Lack of a perceived benefit;
- Lack of understanding on how to backyard compost;
- Inconvenience of going out and purchasing a backyard composter;
- Concern over odours and pests;
- Belief that backyard is too small; and
- Perception that composting is messy, among others[14] .

To counter these barriers, the Township developed a webpage hosting composting videos and other information about backyard composting, sold subsidized backyard composters and aerators, and offered vermicomposting (i.e., composting with worms) workshops and garden parties. The Township continues to include information about backyard composting on their website and offer subsidized composters and aerators for sale (see figure 5).

At the time of the 2010 study, the Township did not have a household organics Green Bin program. However, in 2013, the Township launched their “Green Can” program, where residents were able to place food scraps with yard waste in a curbside collection can. In 2016, this program was modified through the introduction of wheeled carts to collect organic waste.

[14] Lura Consulting. *Township of Langley Backyard Composting Community-Based Social Marketing Study*. November 1, 2010.



Figure 5: Screengrab from Township of Langley Backyard Composting Webpage

In another example, the City of Red Deer, Alberta, had implemented a program called "Composting at Home." The purpose of the initial four-year backyard composting program was to provide the residents of Red Deer with the knowledge and tools they require to backyard compost. The program used Community Based Social Marketing to change behaviour by identifying the barriers to backyard composting, designing a strategy to address them, and then running a pilot program. The program began in March 2012, ran for seven years and trained more than 1,800 people[15].

Additionally, some municipalities also include the sale of digesters, such as the Green Cone Digester. For example, the Township of Selwyn[16] and the Essex Windsor Solid Waste Authority[17] sell and offer information on the Green Cone Digester. The Green Cone Digester turns food scraps into a nutrient-rich liquid and can digest material not suitable for backyard composting, such as raw and cooked meat or fish and dairy products. While the digester does produce a small amount of digested food waste, it takes about five years before the digester backet needs to be emptied.

[15] City of Red Deer. Composting. https://www.reddeer.ca/city-services/environment-and-conservation/your-yard/composting/.
[16] https://www.selwyntownship.ca/en/township-hall/resources/Public_Works/Composter-vs-Digester-FULL.pdf
[17] https://www.ewswa.org/composting-food-waste/composting-and-digesting/



Figure 6: Extract from Township of Selwyn Composters vs. Digesters Brochure

Grasscycling

Grasscycling is the practice of leaving grass clippings on the lawn so they can decompose and return to the soil. Many municipalities do not accept grass clippings in their yard waste program because they can cause odour issues during the yard waste composting process. Instead, they encourage the practice of grasscycling through promotion and education. Examples of municipalities with grasscycling webpages include:

- City of Winnipeg (www.winnipeg.ca/waterandwaste/recycle/grasscycling.stm);
- City of Hamilton (https://www.hamilton.ca/home-neighbourhood/garbage-recycling/yard-waste);
- City of Vaughan (https://www.vaughan.ca/residential/garbage-and-recycling/leaf-and-yard-waste/grasscycling); and
- Halifax Regional Municipality (www.halifax.ca/home-property/garbage-recycling-green-cart/green-carts-leaf-yard-material/grasscycling).



Figure 7: Frame for HRM's "Grasscycling: Keep it on the Lawn" Instruction Video

To encourage grasscycling, some municipalities have also offered rebates for mulching lawnmower blades or mulching mowers. Typically, residents would submit a form with the receipt for the mulching blade or mulching mower to obtain the rebate. Examples of such programs[18] are provided in Table 7.

[18] Note – Some programs may not be currently offered.

Table 8: Examples of Past Grasscycling Incentive Programs

Municipality	Type of Incentive
Winnipeg, MB	• Issued EOI in August 2014 for point-of-sale rebates at participating retailers. • EOI proposes point-of-sale rebates of $30 on lawnmowers and reel mowers and $5 for replacement blades. • Would also include rebates for tune-ups and blade sharpening on mulching lawnmowers and manual reel lawnmower blades.
Folsom, CA	• Residents could sign up for a workshop teaching how to recycle yard waste through composting and recycling through their Minimizing Organic Waste with Education and Recycling (MOWER) Program. • At end of workshop, participants had a choice of a subsidized composted bin ($30) or a mulching lawnmower rebate of $25.
Glendale, CA	• Brush chipper/shredder - $100 rebate (maximum of 15 chipper/shredder rebates are issued each year). • Mulching mower retrofit blade - $5 rebate.
City of Northglenn, CO	• $5 rebate on utility bill on purchase of mulching lawnmower blade or new mulching lawnmower.
Hastings Utilities, Hastings, NE	• New mulching blades were eligible for a $10/blade rebate, limit three blades. • New mulching mowers were eligible for a $50 rebate.
Hutchinson, MN	• During backyard composting program rollout, residents provided with five-dollar rebate coupon and a free backyard composter for attending workshop on backyard composting and grasscycling.
La Verne, CA	• $10 rebate for mulching mower blades and compost bins • $25 rebate for chipper shredders. • Residents who purchase these items brought receipt or proof of purchase to City Hall for rebate. • Program first come/first served with a ceiling of $2,000.
Woodland, CA	• Rebate to residents who purchase a mulching mower and/or chipper and/or compost bin. • Funding for the program limited. Receipt of a rebate depends on availability of funds when applications are received. • Rebate is for $100 per item, or if the item costs less than $100, then rebate is for the purchase price of the item. Maximum amount for rebate is $300.
King County, WA	• King County (Washington) Natural Lawn Care program in the late '90s featured a limited (19 households in a single neighbourhood) distribution of free mulching mowers as part of campaign.

Recommendations	Planning Horizon
1. Reintroduce the sale of subsidized backyard composters and associated products, including compost aerators and digesters. 2. Include promotion and education of backyard composting within the City's Waste Diversion Promotion and Education Strategy.	Short-term 1-5 YR

7.1.2 Supporting Waste Minimization and Diversion at Special Events

Special events or public events can generate large quantities of various waste. The City can provide tools and resources to help ensure event organizers send as little waste for disposal as possible. Other mechanisms such as permit / facility requirements and graduated waste disposal fees can also be used.

There are a number of "Zero Waste" event guides available that could be used as a resource "off the shelf" with supportive materials from the City. Examples include:

- City of Toronto Special Events Waste Diversion Handbook (https://www.toronto.ca/wp-content/uploads/2018/01/9510-9980-Special-Events-Hand-Book-AODA.pdf)
- RRFB Nova Scotia Event Greening Guide (https://divertns.ca/sites/default/files/2021-09/rrfb-event_greening_guide.pdfhttp://divertns.ca/assets/files/Guides/rrfb-event_greening_guide.pdf)
- Town of Squamish, BC Zero Waste Events Guide For Event Organizers (https://squamish.ca/assets/solid-waste/Organics-Guides/Zero-Waste-Events-Guide.pdf)
- Zero Waste DC Guide To Waste Reduction at Events (https://zerowaste.dc.gov/sites/default/files/dc/sites/zerowaste/page_content/attachments/zerowaste-guide_101421.pdf)
- Sonoma County, California Zero Waste Event Guide (https://www.recology.com/wp-content/uploads/2023/04/Zero-Waste-Event-Guide_ZWS.pdf)

Numerous other guides can be found online using the search terms "zero waste event guide".

Another aspect of this would be to develop a directory of service and product providers that may help event organizers (and the general public) help event organizers achieve their waste minimization and zero waste goals. A vendor list of pre-approved products could be generated through a request-for-information process by the City. Two examples of online directories include:

- Burlington Green's 'Shop Local Buy Green' directory (https://www.burlingtongreen.org/shop-local-buy-green/directory/); and
- Toronto's 'Reducing Single-Use' Directory of Service Providers (https://www.toronto.ca/services-payments/recycling-organics-garbage/waste-management/reducing-single-use-takeaway-items/reducing-single-use-directory-of-service-providers/)

Promotion and/or development of materials to encourage events shift toward zero waste could be included within the City's waste diversion promotion and education strategy and budget. The cost of the promotion would depend on its extent.

Recommendations	Planning Horizon
3. Work with the City's facility managers to develop and implement a protocol to be used in helping event organizers at City facilities incorporate waste minimization into their planning. This would include: • Identify an existing Zero Waste Event (or similar) planning guide suitable for use in Clarence-Rockland to include in the protocol. • Develop (or identify) a directory of providers that provide goods and services suitable for Zero Waste Events at City facilities. This effort could potentially be undertaken by a non-governmental organization in the Ottawa or eastern-Ontario area. 4. Incorporate these items into a Waste Management Promotion and Education Strategy.	Short-term 1-5 YR

7.1.3 Support Community Reduce and Reuse Programs

There are a variety of initiatives in various communities that promote waste reduction through the reuse or repair of items. Providing promotional or other support for such programs could help the City prevent the premature disposal of items that may still have use. This type of initiative would also provide other community benefits such as local skill development, goods affordability, and economic development.

Thrift stores and pawn shops are two common types of organizations that facilitate local reuse. Other community groups and non-profit organizations may host events like repair cafes, which bring together owners of broken items and those who can either fix the item and/or teach the owner how to repair it. For example, the Ottawa Tool Library is a non-profit tool lending library located in the City of Ottawa's Laurentian neighbourhood and includes repair cafes among its offered events[19]. The Repair Café concept was reportedly initiated in 2007 in Amsterdam and can be found in countries around the world. RepairCafe.org provides promotional and educational material about Repair Cafés, including information on where repair cafes are available, how to start one, and information on how to repair various goods[20]. A search on their webpage shows that there are about 27 such cafes operating in Ontario, including the one mentioned above in Ottawa.

[19] https://ottawatoollibrary.com/repair-cafes/
[20] https://www.repaircafe.org/en/

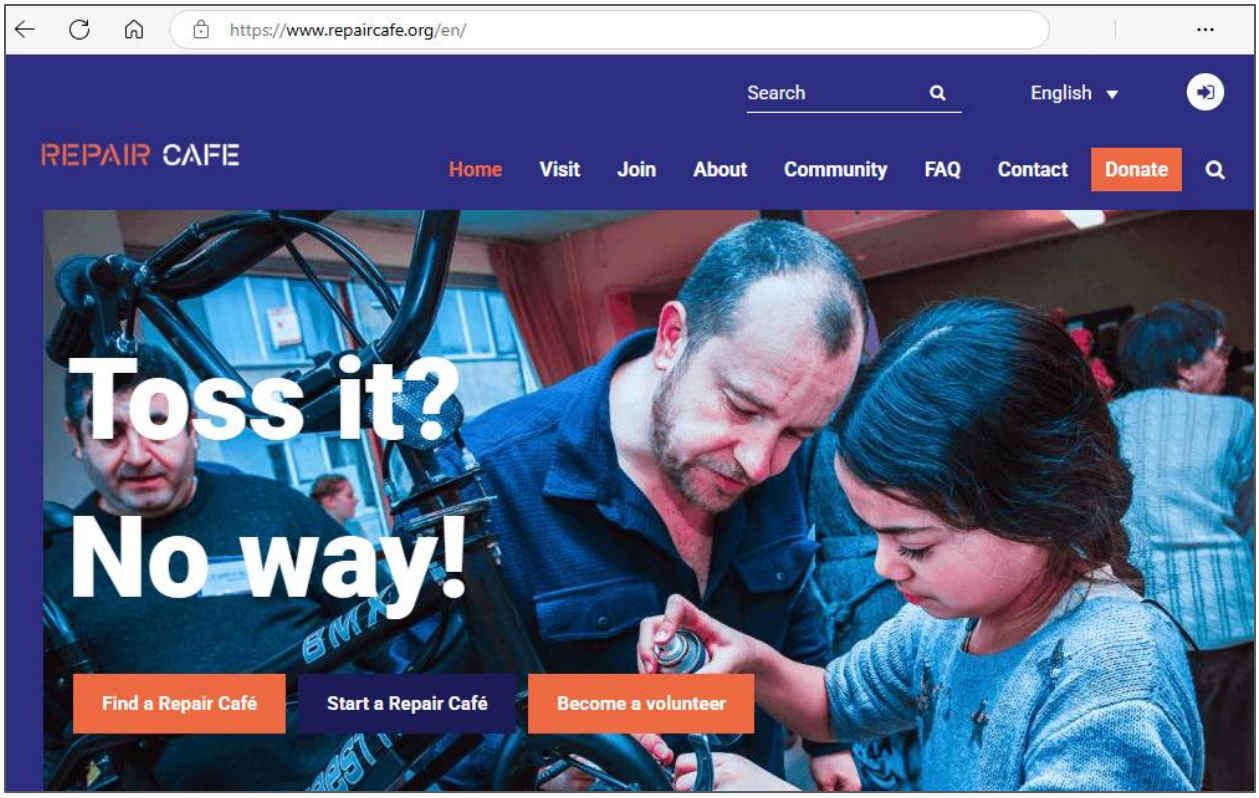


Figure 8: Screengrab from RepairCafe.org homepage

Recommendations	Planning Horizon
5. Promote Community Reduce and Reuse Programs through the City's solid waste communications. This could include a searchable directory of programs and drop-off locations.	Short-term 1-5 YR

7.1.4 Curbside Give Away Weekends

Curbside Giveaway events are a method municipalities use to encourage the reuse of unwanted goods that still have useful life. Clarence-Rockland could continue and expand the use of this program and incorporate its promotion within a Waste Management Promotion and Education Strategy.

Recommendations	Planning Horizon
6. Continue and expand the Curbside Give-away event.	Short-term 1-5 YR

7.2 Recycling

7.2.1 Increase the Number of Waste Diversion Special Events

Holding irregular events for the collection of special wastes have been mainstays of municipalities for decades. However, given the abundance of drop-off locations now available for consumers, special collection events are not specially recommended in this strategy. Rather, it is recommended that the City promote and encourage the use of existing drop-off locations. For example, RPRA's Where to Recycle Map (https://rpra.ca/where-to-recycle/) allows users to search for depot, retail and date-specific event-based locations where materials can be dropped off. Figure 9 depicts locations for various materials based on a search for depot and retail locations within 25 km of Clarence-Rockland's geographic centre (approximately).

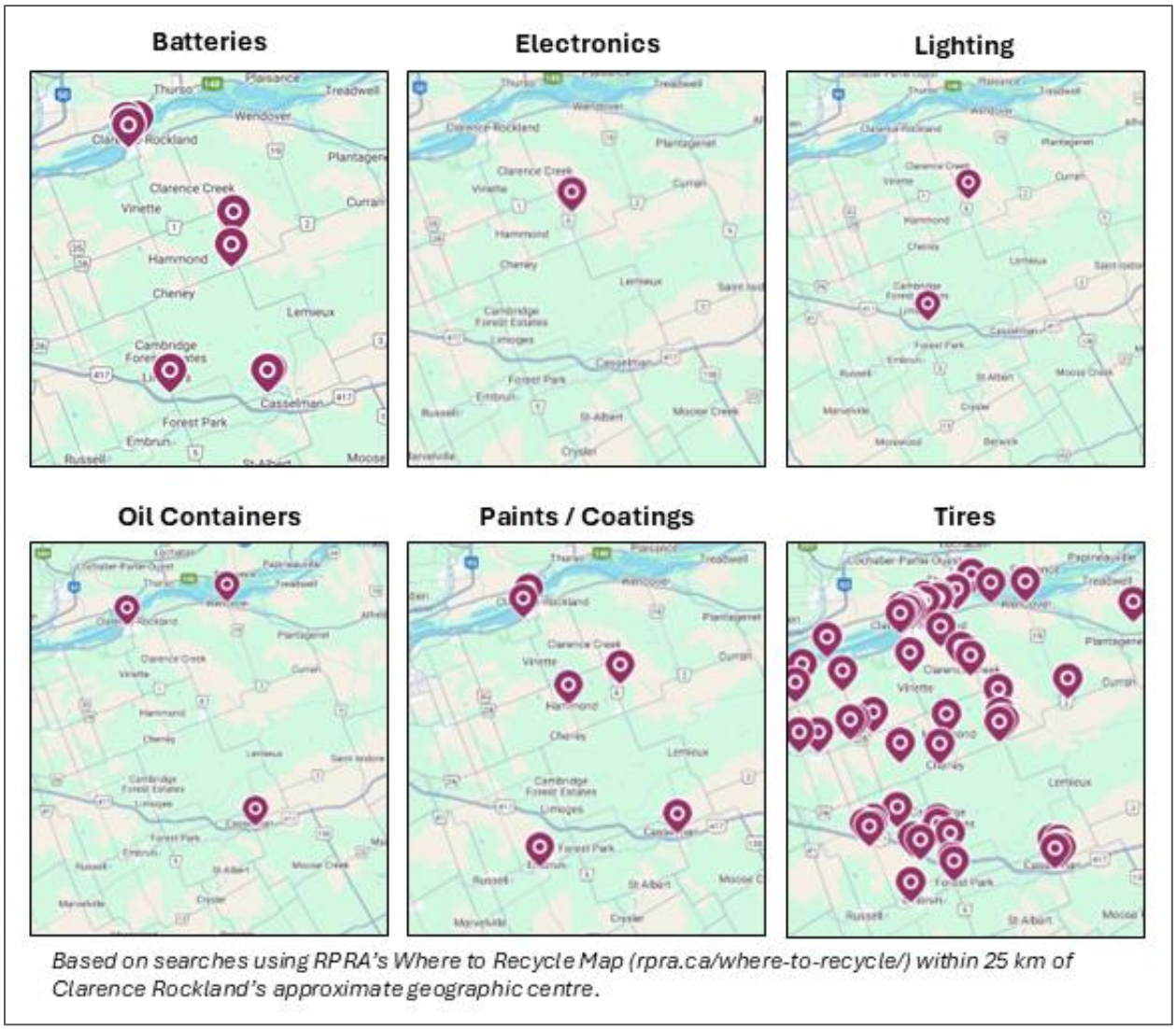


Figure 9: Drop-off locations for various special wastes in Clarence-Rockland

Recommendations	Planning Horizon
7. In lieu of holding waste diversion special events, promote the use of existing retail and depot drop-off locations.	Short-term 1-5 YR

7.2.2 Add additional materials to the municipal recycling program

The waste management landscape is continuously changing, and the City will remain open to capitalizing on new opportunities for materials that currently are being disposed.

One example of a material of some interest in Ontario is Carpet, although it is a material with limited available recycling opportunities. A desktop search for service providers found a single company: Viking Recycling. According to the company's website (https://www.vikingrecycling.ca/), the company offers removal and recycling services for carpet and ceiling tile. The company provides a line of products made from recycled carpet and ceiling tiles, such as carpet reuse, processed fibres (e.g., nylons, PET), equestrian footing for use in equestrian rings and arenas, and punching bags. The company has locations in Toronto and Montreal.

As the City explores these opportunities, considerations should include:

- Available markets or processors for the material under consideration;
- Collection and handling logistics for the material and associated capital and operational costs; and
- Longevity / sustainability of the program.

Recommendations	Planning Horizon
8. Continue to be open to opportunities for diverting additional materials from disposal. Assess the opportunities based on their logistical and economical sustainability and diversion potential. 9. Once sufficient time has passed with management of the Blue Box program under management by Circular Materials and an organics diversion program is in place, actively pursue new opportunities and innovations for waste diversion.	Mid-term 5 to 10 year

7.2.3 Textile Recycling

The waste composition analysis prepared for this strategy estimates that approximately 120 tonnes of textiles are disposed by City residents each year. In Ontario, diversion of textiles from disposal is commonly conducted through non-profit and thrift organizations, such as the Salvation Army or Value Village, or through textile diversion programs run in partnerships with such organizations, for instance by providing drop-off locations in municipal areas. Examples of municipal programs include:

- Region of Peel residents can take waste clothing and footwear to their Community Recycling Centre (CRC) reuse drop-off areas. Some CRC's have Salvation Army Thrift Store Donor Welcome Centres or Diabetes Canada Textile Sheds (https://peelregion.ca/waste/sorter/crc/clothing-footwear).
- The City of Markham has a clear bag program and since 2017 has banned textiles from being placed in the garbage. It has placed Markham-branded textile donation bins in 160 public access locations and 63 multi-residential properties. Its textile program includes partnerships with licensed, registered charities such as The Salvation Army, Diabetes Canada, Cornerstone to Recovery, Ontario Federation of Cerebral Palsy, and B'nai Brith Canada. The partners sort donated textiles based on whether they can be re-worn, reused, or recycled. Textiles unable to be re-worn are turned into

industrial rags, furniture padding, insulations, car seats, and recycle fabrics, among other things[21]. See Figure 8 for an example of the program's communication material.

- York Region provides textile collection bins at select York Region waste depots. The program is run in partnership with Diabetes Canada and B'nai Brith. The Region also lists other locations where used textiles can be donated.

Use of curbside collection of textiles is limited. Municipalities such as the Town of Aurora, Town of Whitchurch-Stouffville, and the Township of Muskoka Lakes have piloted curbside collection of textiles but currently operate bin or depot-based programs. The City of Kawartha Lakes, however, piloted a textile curbside collection in 2021 in collaboration with Talize/Recycling Rewards and as of the fall of 2024 continues to offer it as a special collection for which residents must register.[22] Residents place unwanted textiles in a clear bag at curbside for collection. Reusable clothing was provided to a charity while the remaining fabrics were recycled. A June 2023 staff report describes how in 2021 Talize/Recycling Rewards was awarded a contract with the City through a Request for Proposal procurement to provide textile collection and reuse/recycling services for a one-year pilot project, which had been extended. Collections were held typically in October and June. The program collected 25 tonnes at curbside in 2021 11 tonnes in 2022[23].

Recommendations	Planning Horizon
10. Actively promote community textile reuse and recycling programs through the City's solid waste communications. This could include a searchable directory of programs and drop-off locations.	Short-term 1 to 5 year
11. Undertake a pilot program for the curbside collection of textiles, based on the experiences of the pilot in the Kawartha Lakes.	Mid-term 5 to 10 year

[21] City of Markham. Textiles. https://www.markham.ca/neighbourhood-services/recycling-garbage/textiles. 2025.
[22] City of Kawartha Lakes. Register by October 3 for Fall 2024 curbside textile (clothing, footwear, and linen) pick-up - City of Kawartha Lakes. September 27, 2024.
[23] Jones, Leanna. Textile Recycling Pilot Program Update: Committee of the Whole Report. Report Number: WM2023-008. June 6, 2023.



Figure 10: Page from the City of Markham Textile Recycling Brochure

7.2.4 Curbside Battery Recycling

In years past, curbside battery collection events were operated in conjunction with Blue Box recycling programs, in that residents were able to place batteries in a bag on top of their blue box materials, and the collection contractor would collect and handle the batteries separately. With Blue Box collection now transitioning to management by product stewards, there is some uncertainty how curbside battery collection would now proceed. However, a number of municipalities continue to operate curbside battery collections. For example:

- The City of Orillia provided curbside collection for its residents in November 2024. Residents were asked to set out spent household batteries in a sealed clear plastic bag (e.g., a Ziploc bag) and place it on the ground with the rest of their curbside waste items (see Figure 11). This had changed from previous years when batteries were placed in a bag on top of a household's recycling bin.[24] A request for pricing for curbside battery collection was included on the price proposal form in the City's 2019 solid waste collection RFP[25].

[24] City of Orillia. Orillia's special curbside battery collection runs Nov. 4-8, 2024. https://www.orillia.ca/en/news/orillias-special-curbside-battery-collection-runs-nov-4-8-2024.aspx.
[25] City of Orillia. Request for Proposal for Solid Waste Collection Programs & Recycling Processing & Marketing. October 8, 2019.

- Quinte Waste Solutions held curbside battery collection events in its participating municipalities in March 2025. Residents were asked to place batteries in a resealable bag and place the bag on top of their Papers Blue Box for pickup[26]. At the time of the collection, responsibility for Blue Box collection had not yet transitioned from Quinte Waste Solutions to Circular Materials Ontario, which is scheduled for July 17, 2025[27].
- The County of Simcoe partnered with Call2Recycle to undertake curbside battery collection from November 4 to 7, 2024, which the Conty referred to as its Battery Collection Week. The County reported that it collected over 50,000 kg during the collection[28].



Image source: City of Orillia. https://www.orillia.ca/en/news/orillias-special-curbside-battery-collection-runs-nov-4-8-2024.aspx

Figure 11: Placement of Batteries for Curbside Colelction (City of Orillia)

While there are many opportunities for residents across Ontario to take their used batteries to drop-off locations, data from the RPRA indicates that recovery rates for single-use batteries ranged between 22% and 35% from 2020 to 2023, and recovery rates for rechargeable batteries ranging between 37% to 63% for the same period (see Table 8). This suggests that there is still a considerable proportion of such batteries making their way into Ontario landfills. Offering curbside collection could potentially increase the diversion of batteries by making it more convenient to do so.

[26] Quinte Waste Solutions. Battery Recycling Program. https://quinterecycling.org/battery-recycling-program/
[27] Quinte News. Recycling changes coming in 2025. https://www.quintenews.com/2025/01/02/recycling-changes-coming-in-2025/. January 2, 2025.
[28] County of Simcoe. County of Simcoe and Call2Recycle Canada achieve unprecedented curbside battery recycling success in 2024. https://simcoe.ca/news-releases/county-of-simcoe-and-call2recycle-canada-achieve-unprecedented-curbside-battery-recycling-success-in-2024/. December 11, 2024.

Table 9: Reported Supply and Recovery of Single-Use and Rechargeable Batteries in Ontario

Supply year *(battery type)*	Recovery year	Tonnes supplied to Ontario	Tonnes recovered	Recovery rate
Single-use				
2021	2023	5,882	1,444	22%
2020	2022	6,925	807	12%
2019	2020-2021	6,977	3,686	35%
Rechargeable				
2020	2023	1,554	913	63%
2019	2022	1,475	761	52%
2018	2020-2021	1,762	874	37%

Source: RPRA. https://rpra.ca/wp-content/uploads/Supply-and-recovery-of-batteries-in-Ontario_published-3-25.xlsx. March 20, 2025.

Recommendations	Planning Horizon
12. Include curbside battery collection as an option within the next solid waste collection tender.	Short-term 1 to 5 year

7.3 ORGANICS MANAGEMENT

7.3.1 Introduce Household (food and kitchen waste) Organics Collection and Composting

As noted in Section 5, household organics provides the major opportunity for the City to increase diversion of waste from its landfill. Based on the requirements of Ontario's Food and Organic Waste Framework, the City will be required to implement a program for the collection of food and organic waste to single-family dwellings in urban settlement areas within the next five years. Providing this service to the residents and diverting organics from disposal will benefit the City by preserving landfill space, reducing the generation and toxicity of landfill leachate, and reducing the amount of greenhouse gas emissions that may emanate from the landfill.

Implementing a household (food and kitchen waste) organics collection and composting program generally requires a multi-pronged approach. This approach would include the following:

- Prepare an implementation plan for a household organics collection and composting program. The implementation plan should consider the following:
    - Update on the regulatory environment concerning household organics, in particular updates to timelines, thresholds and targets in the Province's Food and Organic Waste Policy Statement.
    - The status of the City's existing and future collection contracts.
    - Estimated annual generation of food and organic wastes and anticipated capture.
    - Collection service levels for organics, garbage and other applicable waste streams.

  - Review and evaluation of processing options, including consideration of municipally owned and/or operated as well as contractor facilities.
  - Feasibility assessment of anticipated capital and operational costs.
  - Identification of a critical path for the development of the program and its delivery.
- Preparation and implementation of a promotion and education strategy for the household organics collection and composting program. This should include:
  - Research on barriers and incentives for correct participation in household organics collection and composting programs.
  - Identification of methods for addressing the identified barriers and capitalizing on incentives.
  - Development of the strategy, including actions and steps for implementation.

The table below presents the net 20-year costs for two household organics collection scenarios. Scenario 1 includes collection of SSO focused on urban areas, while Scenario 2 represents a City-wide program. With an assumed capture rate of about 65%, the estimated annual cost for Scenario 1 is $160,438 and $331,024 for Scenario 2. The estimated annual cost includes capital replacements (e.g., carts), collection, processing, and an offset for avoided garbage collection. In both scenarios, the overall anticipated 20-year cost per tonne is 12 to 13 dollars.

Table 10: 20-Year Net Cost Per Tonne - Curbside SSO Scenarios

	Year 1	Each Subsequent Year	20-Year Net Totals
Scenario 1			
Capital	$552,335	$55,234	$1,601,773
Collection	$117,116	$117,116	$2,342,318
Transfer/Processing	$118,218	$118,218	$2,364,355
Garbage Collection Cost Offset	($130,129)	($130,129)	($2,602,576)
Net Cost	$657,540	$160,438	$3,705,870
Tonnes Processed	739	739	14,777
20-Year Net Cost per Tonne			**$13**
Scenario 2			
Capital	$1,024,870	$102,487	$2,972,123
Collection	$268,334	$268,334	$5,366,688
Transfer/Processing	$228,537	$228,537	$4,570,744
Garbage Collection Cost Offset	($268,334)	($268,334)	($5,366,688)
Net Cost	$1,253,407	$331,024	$7,542,867
Tonnes Processed	1,524	1,524	30,472
20-Year Net Cost per Tonne			**$12**

Recommendations	Planning Horizon
13. Initiate the planning process for curbside SSO collection in the first 5-year timeframe.	Short-term 1 to 5 year
14. Implementation of the program in the subsequent 5-year timeframe.	Mid-term 5 to 10 year

7.3.2 Further Pilot Testing of Foodcycler-Style Home Composting Appliances

Like backyard composting, Foodcycler-style home composting appliances have the potential for managing a portion of the City's household organics, or they may complement a curbside organics collection program. However, it is unclear at this time whether such a product could provide a consistent level of diversion of organics from disposal, or to what price point the City would need to subsidize the product to provide comprehensive coverage.

The following table provides a summary of estimated costs and diversion in three scenarios using the Foodcycler appliance for household organics diversion. These scenarios include:

- Scenario 1: The City provides a $100 subsidy for FoodCycler appliances, with 25% of the City's households (including both single-family and multi-residential) purchasing and using the appliances.
- Scenario 2: The City provides a larger subsidy of $300 for FoodCycler appliances, with 40% of households purchasing and using the appliances.
- Scenario 3: The City provides a full subsidy ($469) for the FoodCycler appliances, with 75% of households purchasing and using the appliances.

While Schenario 1's net cost per tonne appears to operate on a neutral revenue basis (when garbage collection offset costs are considered), the estimated cost to achieve more comprehensive diversion in Scenario 3 surpasses the estimated cost of curbside collection. However, it should be noted that the project team is not aware of any wide-scale implementation data to indicate either what proportion of a population would be willing to purchase a FoodCycler at this level of subsidy, not whether participants would continue using the appliance for the long term and with repeat-purchases.

Table 11: 20-Year Net Cost Per Tonne - FoodCycler-style Appliance Scenarios

	Year 1	Each Subsequent Year	20-Year Net Totals
Scenario 1			
Capital	$176,385	$25,198	$655,144
Collection / Transfer/ Processing	$0	$0	$0
Garbage Collection Cost Offset	($53,545)	($53,545)	($1,070,901)
Net Cost	$122,840	($28,347)	($415,757)
Tonnes Processed	304	304	6,080
20-Year Net Cost per Tonne			($3)
Scenario 2			
Capital	$1,411,080	$201,583	$6,551,443
Collection / Transfer/ Processing	$0	$0	$0
Garbage Collection Cost Offset	($142,787)	($142,787)	($3,569,671)
Net Cost	$1,268,293	$58,796	$2,385,418
Tonnes Processed	811	811	16,215
20-Year Net Cost per Tonne			**$7**
Scenario 3			
Capital	$4,136,228	$590,890	$15,363,134
Collection / Transfer/ Processing	$0	$0	$0
Garbage Collection Cost Offset	($267,725)	($267,725)	($5,354,506)
Net Cost	$3,868,503	$323,164	$10,008,627
Tonnes Processed	1,520	1,520	30,402
20-Year Net Cost per Tonne			**$16**

A focused foodcycler pilot project could help to provide additional data that may help assess the suitability of Foodcycler-style appliances for broader, reliable diversion of household organics. A pilot

project conducted at the street, neighbourhood or community level (or perhaps or census area) would allow the City to assess what percentage of the population may be willing to purchase and use the units and at what price-point. The pilot should include a methodology for:

- Quantifying/measuring participation of households within the pilot area;
- Quantifying/measuring the amount of organics diverted (either through waste audits and/or comparison of garbage tonnage collected per household against a control group);
- Surveying participants on their attitudes toward use of the appliance; and
- Comparison of measured results against baseline or control data.

The estimated cost for such a pilot would be in the order of $40,000 to $60,000. A major factor in the cost of the pilot would be the average cost per appliance and the number of appliances. The feasibility of the pilot may depend on the participation of an appliance provider and the degree to which the appliances are discounted.

Recommendations	Planning Horizon
15. Run a focused pilot using Foodcycler-style appliances within a measurable area, with support from a provider of the appliance or other funding source.	Short-term 1 to 5 year

7.3.3 Implement a Food Waste Reduction Strategy

Avoidable food waste is considered food waste that could have otherwise been consumed (i.e., edible food-loss waste). For example, this may include food that has spoiled or that has been cooked but not eaten. Unavoidable food waste would include items such as carrot top trimmings, peelings from food preparation, or the inedible parts of food (e.g., apple cores). Awareness surrounding avoidable food waste has increased in recent years. For example:

- From a global perspective, the Food and Agriculture Organization (FAO) of the United Nations reports that approximately 14 percent of the world's food ($400 billion value) is lost on an annual basis between harvest and the retail market, and 17 percent of food is wasted at retail and consumer levels[29].
- In Canada, the National Zero Waste Council has developed a National Food Waste Reduction Strategy[30].
- A study in Quebec estimates that the annual amount of edible food-loss waste in the home is about 40 kg per person per year[31].
- The National Zero Waste Council and Love Food Hate Waste Canada undertook a survey in 2020 to better understand the impact of COVID-19 on consumer behaviours and attitudes related to food and food waste. It reported the top three reasons given by survey respondents for wasting food were:
    - Food left too long so it is unappetizing or may not be safe to eat;

[29] Food and Agriculture Organization of the United Nations. Nutrition. https://www.fao.org/nutrition/capacity-development/food-loss-and-waste/en/. 2025.
[30] National Zero Waste Council Food Weaste Webpage: https://nzwc.ca/focus-areas/food/Pages/default.aspx.
[31] RECYC-QUÉBEC. Quantification Study of Food Loss and Waste in Quebec. June 2022.

- Not used by the "best before" or "expiry" date; and
- Household members don't finish their meals (most common in families)[32].

Other jurisdictions have begun acting to promote local actions to address this issue. For example:

- WRAP UK has developed a successful food waste reduction campaign titled "Love Food Hate Waste" (www.lovefoodhatewaste.com). The UK campaign includes information on its website about how to avoid wasting food, such as using leftovers for lunches, food purchasing suggestions, and other information. The campaign has also developed an app for iPhones and Android devices to help users reduce food waste. The app includes leftover recipes, a portion planner, a meal planner, and other features[33].
- The campaign has expanded internationally to places like Australia and has been licenced in Canada by Metro Vancouver, the City of Toronto and other project partners. An example of a Waste-Free Summer Produce Guide from a past Metro Vancouver campaign is provided in Figure 12. The Love Food Hate Waste Canada program has reportedly reached over 20 million Canadians since 2018 with education on how to prevent food waste. In January 2025, FoodMesh assumed responsibility for management of the campaign[34].
- Sustain Ontario is a province-wide, cross-sectoral alliance that promotes healthy food and farming (sustainontario.com). In August 2016, it launched a municipal toolkit for reducing household food waste. The toolkit is intended to help municipal and regional government, food policy councils, community groups and other not-for-profit organizations strengthen food waste campaigns or policy initiatives in their region. The toolkit provides background information on food waste, guidance on how to address the issue of food waste, and examples of food waste reduction initiatives[35].
- The Region of Peel invites its residents to "Take the Peel challenge and reduce your food waste by the equivalent of a watermelon this year". The website notes that 40% of the food waste disposed is still good to eat and includes tips and suggestions for reducing avoidable food waste (https://peelregion.ca/waste/organics/food-waste).

A food waste reduction strategy would work to reduce avoidable food waste in Clarence Rockland. The City could develop and implement its own custom a food waste reduction strategy or work with an established program (such as Love Food Hate Waste Canada) to implement their available programming locally. This could include food waste reduction initiatives to educate residents and build awareness of food waste and its impact. Examples of initiatives include virtual or in-person waste-free cooking classes or events, rapid messaging about food waste and Green Bin use at events such as Farmers' Markets, expanding existing P&E campaigns and materials, creating educational material regarding meal planning, how to tailor grocery shopping to avoid impulse buys, and how to properly transport and store perishable food.

The City could also collaborate with the food industry, Public Health and non-profit agencies to direct food to charities and food banks and to provide educational programs geared towards supporting residents in changing food waste behaviour.

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[32] Mustel Group. Food Waste in Canadian Homes: A Snapshot of Current Consumer Behaviours and Attitudes. Prepared for the National Zero Waste Council and Love Food Hate Waste Canada. September 2020.
[33] https://www.lovefoodhatewaste.com/article/get-your-free-love-food-hate-waste-app
[34] LFHW Canada. About LFHW Canada. https://lovefoodhatewaste.ca/about/lfhw-canada/. 2025.
[35] Sustain Ontario. *Reducing Household Food Waste: A Municipal-Regional Toolkit*. August 2016.

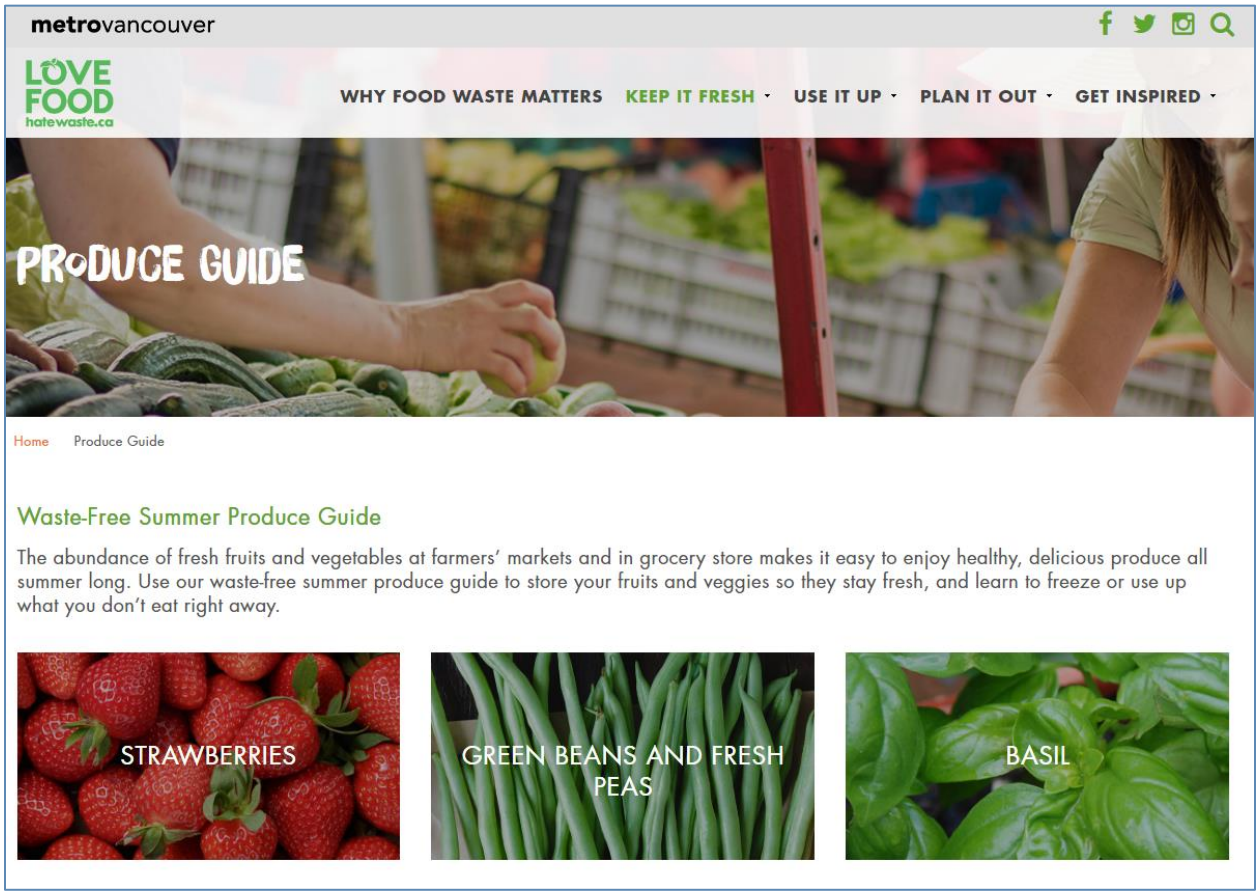


Figure 12: Metro Vancouver's Waste-Free Summer Produce Guide (screen capture)

Recommendations	Planning Horizon
16. Continue to follow the food-waste reduction programs underway in Ontario. 17. As necessary, incorporate messaging into the on-going promotion and education. 18. Develop a strategy in the mid-term to coincide with organics roll-out.	Mid-term 5 to 10 year

7.4 WASTE COLLECTION/RECEIVING

7.4.1 Assess Every-Other-Week Garbage Collection Frequency

Typically, municipalities in Ontario with SSO programs have transitioned from weekly residential garbage collection to Every-Other-Week (EOW) garbage collection. Diversion of recyclable and compostable materials from residential waste will leave a small portion of garbage remaining that requires collection. Collection efficiency increases if this material can be collected EOW instead of weekly. This approach also encourages residents to make greater use of available diversion programs.

EOW is considered a best practice in Ontario, and experience in Ontario jurisdictions demonstrates that it is an effective mechanism to increase diversion. Niagara Region is an example of an Ontario municipality that recently (i.e., 2020) switched from weekly to EOW garbage collection. Niagara Region provides weekly blue box and SSO collection and transitioned to EOW garbage collection in October 2020. In May 2021, the Region reported that, six months after the start of the program, the amount of organics and recycling collected from curbside increased by 47 to 46 per cent[36]. The Region also reported that EOW garbage collection provides opportunities for cost avoidance, as EOW collection on average was found to cost about $1.1M less than weekly collection[37].

Similarly, the Region of Waterloo achieved annual contract savings of $1.5M when implementing EOW garbage collection in 2017[38].

In British Columbia, municipalities in Metro Vancouver that have implemented both organics collection and EOW garbage collection have seen a 25 to 40% reduction in the residential garbage stream and an increase of diversion rates to over 70%[39].

A study prepared for the Alameda County Source Reduction and Recycling Board (United States) considered collection frequencies in 13 jurisdictions in Canada and the United States. It found that communities with EOW garbage collection had higher diversion rates that communities with weekly collection, and residents in EOW communities generated less overall waste materials. The study also notes that their background review and interviews conducted with EOW jurisdictions indicate that EOW collection can significantly lower the costs of waste collection services[40].

Despite the potential cost savings and diversion benefits of EOW collection, potential concerns include:

- Perception of reduced service levels - However, the actual reduction in collection service is minimal, as most of residents' waste would still being collected weekly through the weekly recycling and SSO collection.
- Additional holding time of garbage due to missed collections - Residents that miss an EOW garbage collection date would be required to hold on to their garbage for an additional two weeks. This may be a concern if the waste contains odourous wastes such as dog feces or used diapers. This could potentially be alleviated by providing convenient access for residents to drop off garbage.
- Potential for increased odour issues - Some residents may feel that collection of garbage EOW may increase odours. While compostable waste will be able to be collected weekly, some odour-

[36] Alison Powell, Niagara Region. Every Other Week (EOW) Garbage Collection Diversion Impact Analysis. PWC-C 19-2021. May 11, 2021.
[37] Alison Powell, Niagara Region. Considerations of City of Niagara Falls Withdrawing from Regional Waste Management Services. PW 14-2020. March 10, 2020.
[38] Brad Whitelaw, Niagara Region. 2019.
[39] Tetra Tech. Review of Solid Waste Collection Programs. Prepared for the Township of Langley. July 2015.
[40] SAIC and SERA. 2012 Five Year Program Audit. Prepared for the Alameda County Source Reduction and Recycling Board. July 2013.

generating wastes such as pet waste and used diapers may have the potential to create odours and sanitation issues. When Durham Region switched to EOW collection in 2006 and 2009, it supported the new program with promotion and education on the program goals and how to package diapers and other potentially odour-generating materials (e.g., double-bagging the materials)[41]. The City of Ottawa addresses this issue through its Special Consideration waste program. The program was created for residents requiring collection of diapers and incontinence products on the weeks without scheduled garbage collection. The participating households can place one bag of waste diapers and incontinence products out for collection on the alternating week from garbage collection. Participants are required to register and renew annually[42].

As EOW garbage collection is being reviewed, the assessment should also include other options for streamlining collection activities, enhancing data collection, and managing costs, among other things. These would include the collection items included in the shortlist:

- **Collection of garbage using carts:** This assessment would examine the feasibility of adopting a cart-based collection system for garbage and (as applicable) source-separated organics. The assessment could consider the feasibility of introducing automated or semi-automated curbside cart collection and providing the waste collection containers with radio-frequency identification (RFID) capabilities. The RFID capabilities would allow for the measuring data about collection services and their performance. They would also ensure systems are in place to capture information on vehicles or programs.
- **Incorporation of zero or low emission vehicles into the solid waste fleet:** The assessment could also examine the feasibility of incorporating requirements for a zero or low emission solid waste fleet in a future collection contract, including the anticipated impact on costs, availability of service providers offering this feature, and whether infrastructure upgrades to service the vehicles would be required or beneficial in the community. It would also help the City reduce its greenhouse gas emissions.

Recommendations	Planning Horizon
19. Assess EOW garbage collection as well as use of carts and fleet considerations in greater detail as part of the implementation of the SSO program development. 20. Either implement in concert with an SSO program or incorporate as required into a future solid waste collection contract.	Mid-term 5 to 10 year

[41] Peter Gorrie. Making The Move To Alternate Week Trash Collection. BioCycle August 2012, Vol. 53, No. 8, p. 25.
[42] City of Ottawa. Diapers and incontinence products collection. https://ottawa.ca/en/3-1-1/apply-or-register/diapers-and-incontinence-products-collection. Accessed April 22, 2022.

7.5 PROMOTION AND EDUCATION

7.5.1 Solid Waste Management Promotion and Education Strategy

An effective promotion and education strategy is key to ensuring waste diversion programs are used to their maximum potential through successful participation by residents. They work to identify and overcome both actual and perceived barriers that can discourage residents from fully participating. The overall goal of these promotion and education efforts is to influence sustainable behaviour change within the community.

The City could build upon the successes and lessons learned from the previous communications activities to develop a comprehensive Waste Diversion Promotion and Education Strategy. Elements the strategy may include are:

- Waste Minimization, Reduction and Reuse Practices;
    - Promotion of opportunities for reuse and repair, such as community-based online exchanges;
    - A backyard composting promotion program; and
    - Targeted educational materials and initiatives that focus on specific materials, diversion programs, specific behaviour or attitude changes, or geographic areas. An emphasis could be placed on topics such as waste minimization (i.e., waste reduction and reuse), among others.
- Issue or topic-based campaigns;
- Improving diversion of specific items through targeted campaigns
    - Focusing on issues related to participation, including level of participation as well as how people participate (e.g., reducing contamination, segregating drop-off waste, etc)
    - Promote green purchasing and procurement practices among the general public, local businesses and municipal departments. This could include: promotion of precycling; promotion of the link between purchasing decisions and waste/the environment; educating businesses on green purchasing practices for their sector, etc.
- Audience-specific;
    - An emphasis or targeted campaign on diversion in multi-residential buildings;
    - Delivering presentations and education initiatives to schools and other organizations;
    - The establishment of a Community Liaison Committee to help provide input on and to deliver community-based education; and
    - Enlistment of community champions to help foster waste diversion behaviours in the community.
- Emphasis on Communications Tools and Approaches;
    - Developing a brand that provides a consistent program look and messaging throughout municipal waste reduction initiatives.
    - Enhancing the City's use of its Social Media Presence and use of Apps to deliver public communications and education;

- Capitalize on the City's website and public participation platform to provide more information related to the City's waste reduction and waste management services and facilitate interactive engagement with the public.
- Expanding waste management promotions at public events;
- Implementing incentive/recognition programs for exceptional recycling by households, businesses or organizations (e.g., Hamilton's "Gold Box" program);
- Fine-tuning (as required) of communication tools and materials, such as brochures, etc.

Recommendations	Planning Horizon
21. Develop and implement a comprehensive Solid Waste Management Promotion and Education Strategy.	Short-term 1 to 5 year

7.5.2 Encourage Extended Producer Responsibility

Ontario has a number of Extended Producer Responsibility (EPR) or other industry-funded product stewardship initiatives in place. These are generally in the form of retail take-back or other drop-off programs. As the landscape of EPR in Ontario continues to evolve, how it is implemented in Ontario affects the ability of Clarence-Rockland's residents to utilize these waste diversion services. Actions the City can do to influence how EPR is implemented and to help its residents use the services provided include:

- Provide the municipality's perspective on EPR and product stewardship during consultations or at other opportunities;
- Support municipal waste associations in their efforts to lobby for product stewardship; and
- Promote local recycling opportunities through existing provincial product stewardship programs, including a link to the RPRA's "where to recycle" searchable map[43] (https://rpra.ca/where-to-recycle/). Figure 13 presents the results of a search for depot and retail drop-off opportunities for batteries and electronics within 25 km of Rockland.

The level of additional diversion and long-term cost implications from this option are undetermined at this time, as they will depend heavily on the policy decisions made at the Provincial level. However, the operational cost of undertaking this option should not require any additional cost resources and should be covered under the waste management systems existing administrative and promotion/education costs.

[43] RPRA's "Where to Recycle" map displays locations across Ontario where you can drop off used materials, such as batteries, electronics, household hazardous waste, lighting and tires, for free to be recycled, reused or refurbished.

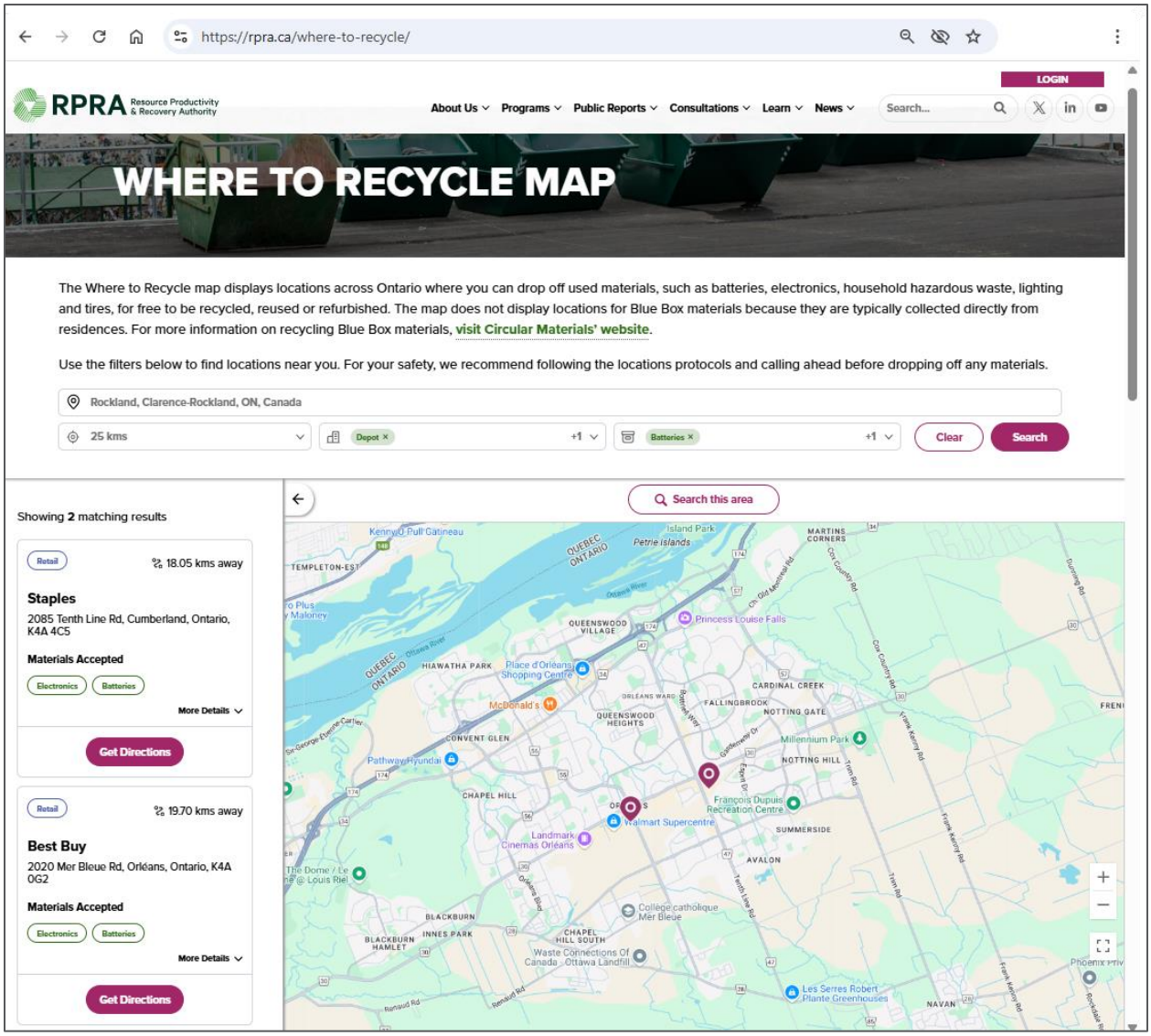


Figure 13: Screengrab from RPRA's Where to Recycle Map

Recommendations	Planning Horizon
22. Continue to monitor and participate in product stewardship and EPR activities. 23. Monitor for potential gaps in how stewardship waste diversion programs are promoted in Clarence-Rockland and address through the City's communications initiatives.	Short-term 1 to 5 year

7.5.3 Periodic Multi-season Waste Audits

Multi-season waste audits conducted periodically (e.g., every 2 to 4 years) would provide the City with quantifiable data that would help it better understand what wastes are going to landfill that could otherwise be diverted. This information would help the City to confirm which waste materials are avoiding diversion and therefore should be targeted, and which sectors require greater support or motivation to divert waste. It would also allow the City to assess the diversion performance of the Blue Box stewards and to adjust other aspects of its solid waste management program.

The waste audit should include a comprehensive review of the City's waste stream, including specific waste materials of interest, such as:

- Food waste, including avoidable food waste;
- Textiles;
- Blue box recyclables; and
- Any other materials that may be of interest to the City.

The waste audits should consider multiple sectors or locations, which could be completed in phases. Sectors and locations may include:

- Single-family households;
- Multi-residential households;
- IC&I sector; and
- Bulky waste collections.

In some cases, visual audits may also be completed if quantifiable data is not required. Visual audits require less rigour than full sort audits and could potentially be undertaken using municipal or summer staff.

The Continuous Improvement Fund (CIF) developed a guidance document to provide communities across Ontario with direction for planning and executing composition audits of waste, organics and litter streams. The guide identifies audit sources including waste from single-family homes, multi residential units, depots, and business improvement areas (BIAs)/ non-eligible sources. The purpose of the guide was to allow communities to easily compare or consolidate audit data across the province. The guideline is available to download at this address: https://thecif.ca/project/municipal-waste-composition-audit-guideline/.

Recommendations	Planning Horizon
24. Undertake sorted waste audits every two to four years. 25. Undertake visual waste audits as required for issue areas.	Short-term 1 to 5 year

7.6 MUNICIPAL POLICY

7.6.1 Introduce maximum bag limits

The City does not currently have a limit on the number of garbage bags or containers that can be set out for collection. Residents can set out three garbage bags each collection without a bag tag, with subsequent bags requiring bag tags.

Placing a limit on the maximum number of bags that can be set out at the curb and reducing the number of bags that can be set out without a bag tag may provide additional incentive to residents increase waste diversion by:

- Being more cognizant of properly segregating Blue Box recyclables from their garbage; and
- Separating other potentially recyclable waste materials from the garbage for diversion through other means.

For bulkier loads, it may also encourage residents to take segregated loads to the City's landfill site where it can be sorted for proper disposal, reuse or recycling.

Recommendations	Planning Horizon
26. Introduce a maximum bag limit for how many bags or containers of waste can be set out for collection.	Short-term 1 to 5 year

7.6.2 Increase Cost of Bag Tags

User pay programs, also known as Pay-As-You-Throw (PAYT), unit-based pricing, variable rate and user fee, are becoming an accepted method for financing residential waste management services. By directly charging residents for their waste generation, residents are more directly aware of their waste generation and disposal habits. User pay programs can be full or partial. In a full user pay program, residents pay for each unit (i.e. bag or container) of garbage set out for collection. In partial systems, residents only pay over a set limit (e.g., they can set out one bag without a tag, while subsequent bags must be tagged).

The City's current system operates as a partial user pay system, as residents only pay to set out garbage bags above the three-bag threshold. The cost per garbage tag is $2.50. The reported revenues from 2023 and 2024 from garbage tags was $2,594 and $2,712, respectively. This represents about 1,050 garbage tags sold each year, or roughly 19 used on average each week across the City. Increasing the cost per garbage tag would not have a significant effect on the City's revenues or diversion rate if they are continued to be applied for bags above the three-bag limit. For either to be affected, the cost per garbage tag would need to undergo a significant increase and/or be required after a lower threshold (for example, one or two garbage bags).

To help assess the potential reach of this option, setout data describing how many households set out 1, 2, 3 and 4 or more bags of garbage each week would be valuable. The benefit of this option would increase as the number of households setting out three or bags of garbage also increases. This information could be collected as part of a waste audit or on its own.

With respect to stickers for bulky items, their cost was increased in 2025 from $10 per item to $20.

Recommendations	Planning Horizon
27. Monitor need for bag tag cost increases annually with operational and capital budget reviews. 28. Obtain curbside set-out data assessing the number of households that set out 1, 2, 3, and 4 or more bags/containers of garbage. 29. Decrease the limit of garbage bags allowed for set out without a bag tag, from three bags to two. 30. Annually review the suitability of the garbage tag fee in conjunction with a review of the number households setting out 1, 2, 3 and 4 or more garbage bags out for collection per week.	Short-term 1 to 5 year

7.6.3 Transition to Full User Pay

Transitioning from a partial user-pay system to one that is full user pay could encourage residents to divert more of their waste to diversion programs and potentially reduce overall waste generation. However, shifting to full user pay from a partial user pay can be controversial, as residents may feel that waste collection is a service already paid for through property taxes.

Past studies have shown that municipalities introducing user pay programs generally see increased diversion and reduced disposal rates. A 2001 EnvirosRIS Ltd. study noted that, at that time, all user pay/PAYT programs in Canada and the United States were “volume based” systems. Most of the user pay/PAYT communities included in the study used one of two systems: either a tag system or a variable standardized container system. In general, most Canadian user pay programs were found to use the tag system, whereby residents are required to purchase tags that they attach to some or all of the bags/cans of garbage set out for collection. Municipalities included in the research were found to decrease the amount of waste disposed by up to 30% after implementation of their user pay system . However, they would have been shifting from a program that had no user pay, whereas the City currently operates a partial user pay system.

The Association of Municipal Recycling Coordinators (AMRC) conducted an analysis of User Pay system costs in Ontario in a project funded by Stewardship Ontario’s Effectiveness and Efficiency Fund (E&E Project 191). The analysis studied six municipalities in Ontario with user pay systems (four of which were not included in the 2001 EnvirosRIS study) and found increases in recycling tonnage ranged from 22% to 86% and that decreases in waste tonnage ranged from 6% to 61% after implementation of user pay.

Other, more recent studies continue to provide support for the applicability of user fees for facilitating waste diversion:

- A study from Wilfrid Laurier University in 2014 examined combined survey and panel data from a 10-year period to examine the efficacy and public perception of user pay schemes in Ontario. The study found that while the implementation of user pay schemes do increase municipal recycling rates, their effectiveness can be negatively impacted by inconsistent enforcement and inadequate recycling bin space. They also found that the public perception of user pay policy is largely negative[44].

[44] Calvin Lakhan, Evaluating the effects of unit-based waste disposal schemes on the collection of household recyclables in Ontario, Canada. Resources, Conservation and Recycling. Volume 95, 2015.

- A 2018 research paper by Christina Chiasson found that user-pay schemes are an among the most effective of policies to increase waste separation, although it did not find that such schemes had a significant effect on reducing the total tonnage of waste on a per capita basis[45].
- A 2020 study in the City of Toronto examined the type of impact that city's user pay system had on household food waste disposal. It was concluded that Toronto's user pay waste program has been effective at diverting food waste into the city's green cart program, but not at reducing the generation of food waste. The study's authors suggested that reduction of avoidable food waste could be achieved by increasing garbage cart fees, using a weight-based user pay system, or providing messaging to households on the monetary value of avoidable food waste, and working with food retailers to improve how households shop for their food[46].

This option would generate additional fees for the City, which could in turn be used to offset the City's operational and capital waste management costs. The table below estimates annual revenues based on three scenarios:

- Scenario 1: Scenario 1 assumes use of the City's existing garbage tag fee applied to an average of 1.5 garbage bags set out per week by the City's 9,525 single-family households.
- Scenario 2: This scenario is based on the City of Toronto's pricing scheme[47], which includes $306.36 per year for a small bin (75 litres) and $371.91 per year for a large bin. The scenario assumes 50% of single-family households use the small bin and 50% use the medium bin. The City also provides large (240 litres) and extra large (360 litres) bins, which this scenario has not included. The City of Toronto also allows the use of bagged excess garbage, which must have a garbage tag ($6.56 each).
- Scenario 3: This scenario is based on the Municipality of Central Elgin's garbage cart collection program[48]. Its annual fees include $75 for 80 litre cart collection service and $89.40 for 120 litre collection service. The scenario assumes 50% of single-family households use the 80-litre cart service and 50% use the 120-litre cart service. The municipality also provides collection services for 240 litre and 360 litre carts, which this scenario has not included. The municipality also allows the use of bagged excess garbage, which must have a garbage tag ($5.25 each for tags that never expire).

Table 12: Estimated Full User Pay System Revenues (Three Scenarios)

Scenario	Estimated Annual Revenue
1. Clarence-Rockland Existing Garbage Tag Pricing ($2.50 per bag, assuming 1.5 bags per weekly set-out)	$1,857,375
2. Scenario using City of Toronto Cart Pricing in Clarence-Rockland (50% of households using 75L cart fee and 50% using the 120L cart fee)	$3,230,261

[45] Chiasson, Christina. The price of garbage: an analysis of the effect of user-pay programs on waste diversion in Ontario municipalities. A research paper submitted in partial fulfillment of the requirements for the degree of Master of Science in Environmental Sustainability Institute of the Environment University of Ottawa. April 2018.
[46] van der Werf, Paul; Larsen, Kristian; Seabrook, Jamie A.; and Gilliland, Jason. How neighbourhood food environments and a pay-as-you-throw (PAYT) waste program impact household foodwaste disposal in the city of Toronto. 2020. Paediatrics Publications. 1389. https://ir.lib.uwo.ca/paedpub/1389
[47] City of Toronto. Garbage Bin Sizes and Fees. https://www.toronto.ca/services-payments/recycling-organics-garbage/houses/garbage-bin-sizes-fees/.
[48] Municipality of Central Elgin. Cart Collection. https://www.centralelgin.org/en/living-in-central-elgin/cart-collection.aspx.

3. Scenario using Central Elgin Garbage Cart Collection Pricing in Clarence-Rockland (50% of households using the 80L cart fee and 50% using the 120L cart fee)	$782,955

Recommendations	Planning Horizon
31. Undertake feasibility assessment for full user pay for garbage collection. Assessment should consider: • Implementation timing with garbage collection contract and curbside organics collection. • Fee structures for cost recovery. • Recommendations for implementation. 32. Depending on results from feasibility assessment, prepare implementation plan for transition to full user pay.	Mid-term 5 to 10 year

7.6.4 Update to and Enforcement of Waste Collection By-Law

Waste management bylaws provide municipalities with a tool to define and enforce how solid waste is to be managed in their community. The bylaw also provides a mechanism for setting fees for providing solid waste management services.

The current solid waste management bylaw does not contain the provisions for fees. Rather, this is contained within a separate bylaw. The bylaws should be coordinated so that fees related to garbage tags, stickers for bulky items and differential tipping fees at the landfill are consistent and accessible.

Recommendations	Planning Horizon
33. Monitor waste collection bylaw semi-annually to ensure bylaw clauses align with desired waste management practices and provincial legislation. 34. Update the Waste Collection By-Law to ensure it accurately describes how solid waste should be segregated and set out for collection. The update should ensure there are adequate provisions and penalties to allow for the bylaw's enforcement. 35. Supply bylaw enforcement staff with guidelines to encourage diversion. Provide municipal staff with the legal means to enforce desired behaviours (e.g., source separation) and curtail undesired behaviours (e.g., scavenging). 36. Review and coordinate solid waste related-fee schedules.	Short-term 1 to 5 year

7.6.5 Clear Garbage Bags

A 'clear bag' program refers to the use of a garbage bag that is transparent or see-through. Use of clear bags for garbage encourages waste diversion in several ways:

- Clear bag Programs improves worker safety and allows Transfer Station attendants the ability to conduct a quick assessment of the contents within the clear bag(s) to ensure that no recyclable or hazardous items are in the bag.

- Clear bags can serve as a reminder if people forget to separate out these materials from their garbage, as the clear bag allows residents to see what is being thrown out.
- Clear bags prompt people to reflect on their waste disposal habits and encourage them to consider waste diversion options.
- Clear bags can assist in with the enforcing of municipal material disposal bans by allowing waste collectors to monitor for compliance and reject any bags containing banned items.

Use of clear bags for garbage collection is becoming increasingly common in Ontario. For example, the CIF's Clear Bag Garbage Program Implementation Toolkit, which was released in 2015, notes that 40 municipalities in Ontario have implemented clear bag garbage collection programs, including the City of Markham and Dufferin County[49]. That number has grown since then, including the City of Orillia (implemented 2022), the City of Kawartha Lakes (implemented 2017), and Tay Valley (implemented 2016).

Clear bag programs have been found to increase diversion. For example:

- A Stewardship Ontario-funded study examined 22 municipalities with clear bag programs and concluded that this option could have a considerable increase on diversion rates. It noted that 13 Nova Scotia municipalities reportedly experienced, on average, a 41% decrease in residential waste, a 35% increase in residential recycling and a 38% increase in residential organics collection. One region from Nova Scotia experienced a 71% increase in tonnes of material collected for recycling. It is important to note that these averages were based on programs with existing recycling and organics diversion programs and therefore most of the gains can be directly attributed to clear bags[50].
- Halifax Regional Municipality (Nova Scotia) switched to clear garbage bags in 2015. A staff report in 2020 noted that the program resulted in an immediate 25% reduction in garbage tonnages from the residential sector that has been maintained in the following years[51].
- The Township of McMurrich-Monteith introduced a clear bag program in 2012. Recycling tonnage increased by 62% from 2011 to 2013[52].

The literature review identified a number of key considerations that would need to be included when designing and implementing a clear bag program. These include:

- **Privacy concerns** - Perceived lack of privacy can be a significant issue for some members of the public, as they have concerns about others being able to view the contents of their garbage. Privacy issues must be addressed before implementing a program. Most municipalities permit an opaque bag(s) of some sort, which is commonly referred to as a 'privacy bag'. Most clear bag programs allow placing of one or two privacy bags in the clear bags. Items going into privacy bags may include sanitary products, diapers, incontinence products, personal information that cannot be shredded and recycled, medical objects (not including sharps, or any other unsafe medical items, which should be disposed of in a sharps container provided by your pharmacy or medical professional).

[49] CIF. Clear Bag Garbage Program Implementation Toolkit: A municipal step-by-step guide. CIF Project 748. 2015.
[50] Quinte Waste Solutions. The Use of Clear Bags for Garbage as a Waste Diversion Strategy: Background Research on Clear Garbage Bag Programs across North America. 2008.
[51] Brad Anguish. Cart Based Garbage and Recycling Collection. Halifax Regional Council Information Report. March 11, 2020.
[52] CIF 2015.

- **Clarity of what is and is not acceptable in the clear bag** - An easily understandable \list of what materials are acceptable in the clear bags and what materials are not needs to be prepared and circulated amongst the residents,
- **Inadequate retailer supply of clear bags** - The insufficient supply of clear bags is a common concern. Retailers should be given sufficient notice to ensure that they have enough clear bag supplies to meet the demand (ideally, 8 to 10 months of lead time to deplete inventories of opaque bags and to stock clear bags). As an alternative, the City could also consider selling clear bags to address the initial bag shortage.
- **Stockpile of opaque bags** - Sufficient notice must be given to the public to help them with the transition and to give them a chance to use up their solid coloured / non-transparent bags. The recommendations vary from giving a transition of time of four to six months or to allowing the residents to finish their supply of solid-coloured bags during implementation of the clear bag program, before making the transition.
- **Enforcement concerns** - Residents may get concerned about overlooking residual recyclable materials remaining in the clear bags. Normally, an allowable level of 10 to 15% of recyclables is permitted in the clear bags. This determination is qualitative, and the curbside waste collector is typically the one who would make the determination of acceptable level (as is typically done for curbside collected materials).

For many programs, enforcement is a key element. Non-compliant bags are rejected at curbside for all clear bag programs surveyed with municipal-arranged curbside collection/ or refused to be dumped at transfer station. Recycling by-laws and/or a landfill bans that address recycling and other materials can help increase the success of clear bag programs, as the presence of a by-law may encourage residents to follow set-out requirements.

The capital costs associated with implementing a clear bag policy are minimal, as no major infrastructure investments are required. Most of the cost would be for promotion and education of the program.

Recommendations	Planning Horizon
37. Initiate the transition of the City's garbage collection program to require use of clear garbage bags. Prepare an implementation plan that considers: • Preferred timing of the transition to clear bags, in consideration of other changes to the City's solid waste management system (e.g., implementation of weekly organics collection and EOW garbage collection). • Use of a transition period that allows for promotion and education about the change and allows residents to use up stockpiled black garbage bags. • Engagement of retailers and bag suppliers.	Short-term 1 to 5 year

7.6.6 Reduction Strategies and Bans for Single-use Items

On June 22, 2022, the Government of Canada published the Single-use Plastics Prohibition Regulations (SOR/2022-138), issued under the Canadian Environmental Protection Act, 1999. The regulation prohibits the manufacture, import, and sale of six categories of single-use plastics to prevent plastic pollution. The six categories include checkout bags, cutlery, foodservice ware, ring carriers, stir sticks, and straws. The Single-use Plastics Prohibition Regulations (SUPPR) are part of the Government of

Canada's plan to address pollution, meet its target of zero plastic waste by 2030, and help reduce greenhouse gas emissions[53].

Many municipalities have incorporated actions to address single-use plastics in their outreach or in their waste management plans. For example:

- The City of Burlington's Zero Waste Guide notes the following for corporate food services, internal staff organized meetings and events, and third party organized/catered events on City property:
    - Condiments such as sugar, milk, cream, mustard, ketchup, and jam in single serve non-recyclable packets are prohibited.
    - Spoons or wooden stir sticks (compostable) for hot drinks will be used.
    - Expanded polystyrene foam products (Styrofoam) for food or beverages are prohibited.
    - Zero waste, recycling and composting instructions will be visible in the food preparation and service areas. Recycling and composting containers will be placed in visible locations with appropriate signage and bags (clear bags for recycling and certified compostable bags for composting)[54].
- The City of Toronto adopted its Single-Use and Takeaway Items Reduction Strategy in June 2021. Stage 1 of the strategy focused on encouraging voluntary measures, such as encouraging food establishments to adopt "ask first/by request" processes for items such as bags, straws, and utensils. The Voluntary Measures Program also encouraged businesses to allow the use of reusable cups and takeaway containers in their operations instead of single-use takeaway items. In December 2023, the City adopted the Single-Use and Takeaway Items Bylaw, which requires establishments to adopt "ask first/by request" processes for items such as bags, straws, and utensils. The city also provides resources on its Reducing Single-Use & Takeaway Items webpage. These resources include signs and posters (see Figure 14), guidance on reducing single-use and takeaway items, a guide for product alternatives for single-use food and beverage containers and accessory items, and a Reducing Single-Use – Directory of Businesses. The purpose of the directory is to let residents know of the practices being taken by participating businesses reducing single-use and takeaway items within their operations and where they can shop to reduce their own use of these items. Businesses that would like to be listed in the directory must complete a Reducing Single-Use program application to be considered[55].

Recommendations	Planning Horizon
38. Develop a strategy to eliminate or reduce single-use plastics. 39. Ensure the Solid Waste Management Promotion and Education Strategy supports activities and initiatives related to reduction strategies and bans for single-use items.	Short-term 1 to 5 year

[53] Environment and Climate Change Canada (ECCC). Single-use Plastics Prohibition Regulations – Overview. https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/reduce-plastic-waste/single-use-plastic-overview.html. April 18, 2023.
[54] City of Burlington. Zero waste Guide. Appendix B to EICS-09-24. March 19, 2024.
[55] City of Toronto. Reducing Single-Use & Takeaway Items. https://www.toronto.ca/services-payments/recycling-organics-garbage/waste-management/reducing-single-use-takeaway-items/.



Figure 14: Reducing Single-Use Items Promotional Poster (City of Toronto)

7.6.7 Update Waste Performance Metrics

Changes to the material composition and the regulatory environment around waste management have encouraged some municipalities to update how they report on the performance of their solid waste management programs. For example:

- In its 2020 solid waste master plan update, the City of Hamilton noted the legislation to transition the responsibility of the Blue Box Program to producers would require the City to establish new measurements to track the status and performance of the waste management program. One of the action items from the update is for staff to determine a new waste diversion target as well as new

key performance indicators (KPIs) to measure the success of the waste management system[56]. Since the adoption of the update, City staff had considered 29 possible waste management performance metrics used by other municipalities, identified by staff or suggested by residents through surveys. They then short-listed 17 for further evaluation. Examples of select short-listed metrics include:

  - Post Blue Box Transition Diversion Rate;
  - Capture Rate of Organics from Single-Family Homes;
  - Capture Rate of Organics from Multi-Residential Buildings;
  - Landfill life; and
  - Landfill volume used annually[57].

- A report prepared for Niagara Region explored solid waste management key performance indicators (KPIs) for its typical comparator municipalities. The report noted that the shift toward Individual Producer Responsibility (IPR) models for waste diversion programs may result in difficulty obtaining accurate data on the performance of local IPR diversion programs. Many municipalities are therefore looking to other metrics using data within their control. This could include targets and KPI's that address corporate climate change and sustainability goals. Examples of such metrics include:
  - Tonnes of waste disposed per household.
  - Tonnes of organic waste diverted per household.
  - Tonnes of CO2 emissions.
  - Number of enquiries and program compliance levels.
  - Number of complaint and enquiries calls[58].

Recommendations	Planning Horizon
40. Identify a suite of key performance indicators (KPIs) for evaluating the City's solid waste management program. 41. Incorporate the KPI into the City's waste management evaluation and reporting.	Short-term 1 to 5 year

[56] Kent, Ryan. Report to the Public Works Committee. Solid Waste Management Master Plan Five-Year Review (PW20072). November 16, 2020.
[57] City of Hamilton Public works Department Waste Management Division. Waste Management Sub Committee. Agenda Item 7.7. Waste Management Performance Metrics. June 23, 2023.
[58] Birett & Associates. Technical Memo 4 Comparative Scan of Peer Municipalities. Prepared for Niagara Region. December 2023.

7.7 IC&I Sector

7.7.1 Reduction in Provision of Waste Collection Services to IC&I sector

The City has reduced the number of service stops and customers it provides for solid waste collection services. Generally speaking, delivery of solid waste management services is not a core function of the municipality. Completing a full or partial withdrawal by the City from providing solid waste management services to IC&I sector customers may reduce the City's administrative burden and provide economic opportunities for waste collection service providers.

Recommendations	Planning Horizon
42. Extract the City from providing solid waste collection services to IC&I sector clients. As feasible, assist the clients with transitioning to alternative private sector service providers.	Short-term 1 to 5 year

7.7.2 Establish a System for Construction and Demolition (C&D) Recycling

Over 1,000 tonnes of C&D waste were disposed at the City's landfill in 2023. This material could potentially be segregated for reuse or diverted to other C&D-focused disposal facilities. A strategy for C&D waste could help the City ensure C&D waste is delivered segregated to the landfill, and/or the City could work with C&D-focused disposal facilities to provide and promote disposal alternatives to residents. While diverting this material to another facility may reduce the City's annual tipping fee revenue, it would have the benefit of extending the useful life of the landfill.

Recommendations	Planning Horizon
43. Develop a strategy for C&D recycling. Elements of the strategy could include: • Partnering with or promoting of private sector facilities. • Establishment of a specialized depot to receive, sort and process C&D waste for diversion. • Policy instruments to encourage C&D recycling. • Implementation of C&D waste diversion best practices. • Disposal bans for C&D waste at the City's landfill, or discouragement of their disposal at the City's landfill through increased tip fees.	Mid-term 5 to 10 year

7.8 OTHER OPPORTUNITIES

7.8.1 Multi-municipal Partnerships for Waste Management Services

Multi-municipal partnerships for the collection and processing of waste is viewed as a municipal best practice by the RPRA. These types of partnerships allow municipalities to take advantage of economies of scale through co-operation with neighbouring municipalities. This could include joint contracts for collection tenders or shared processing facilities for divertible materials.

Recommendations	Planning Horizon
44. Continue exploring multi-municipal partnerships for the collection and processing of waste, as well as other aspects of managing solid waste in Clarence-Rockland.	Short-term 1 to 5 year

7.9 DISPOSAL/PROCESSING

7.9.1 Future Expansion of Landfill Site

The City's landfill site has an approved capacity of 974,000 m³. The City's 2023 annual monitoring report estimates that it has about 478,000 m³ of disposal capacity remaining, or about 42 years of estimated site life.

While there is no present requirement for seeking additional disposal capacity, it is in the City's long-term interest to continue exploring options for the extended and cost-effective use of the landfill, and for the waste management site as a whole. This would include:

- Based on the groundwater characteristics, the City should look at purchasing property adjacent to its boundaries, which would allow the site to be expanded in a manner that would protect its ability to continue operation as a natural attenuation facility.
- Continued strategic placement of landfilled waste such that it maintains conditions favourable to a future landfill expansion. use of the Future expansion of the landfill would extend its lifespan, which may either require or be benefited by acquisition of the landfill site's adjacent properties.

The potential need for and suitability of landfill expansion should continue to be reviewed in subsequent SWMS updates.

Recommendations	Planning Horizon
45. Review options for purchasing land adjacent to the landfill boundaries.	Short-term 1 to 5 year
46. Review the need for and suitability of landfill expansion in subsequent SWMS updates.	Revisit Next SWMS

7.9.2 Export Garbage to a Different Landfill

The City's landfill site has sufficient useful life remaining and expansion potential such that it does not have a current need to explore alternative disposal options. Exporting garbage to a different landfill would be a less favourable option compared to expansion of the landfill, as expansion would likely be more cost effective and would enable the City to continue to maintain control over their disposal costs and logistics. However, the potential need for and suitability of waste export should continue to be reviewed in subsequent SWMS updates.

Recommendations	Planning Horizon
47. Review the need for and suitability of waste export for disposal in subsequent SWMS updates.	Revisit Next SWMS

8 Next Steps

The next steps in the development of the Strategy are to:

- Review the Strategy recommendations with the public at a consultation event.
- Based on the feedback received, update the Strategy recommendations.
- Finalize the Strategy with an implementation schedule and costing.

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Appendix A – Recommendations from the 2015 Solid Waste Management Strategy

The items listed below are the recommendations presented in the City's **2015 Solid Waste Management Strategy**.

Automated Waste Collection

- Approximately 3 years prior to the end of the upcoming collection contract cycle, conduct a business case analysis for the conversion of Clarence-Rockland's existing residential solid waste collection system to an automated cart-based system.
- Maintain on-going dialogue with neighbouring municipalities regarding multi-municipal waste management services, as sharing implementation of an automated cart-based waste collection system with municipal neighbours may improve the business case.

Ban Designated Materials from Landfill

- Add blue box recyclable materials to the list of materials banned from disposal at landfill.
- Screen incoming loads to the landfill for banned materials.
- Develop a protocol for when banned materials are identified in a load.
- Conduct an education campaign about the updated material ban prior to the ban's full implementation. This could include providing information about the ban and newly banned items, promoting when the ban will come into effect, promoting alternatives to disposing of the banned materials, and communicating what is required when dropping off loads of waste at the landfill site.

Establish a Scale House at the Landfill Site and Update Landfill Tipping Fees

- Issue a tender for the design and installation of a weigh scale house at the landfill site.
- Develop a tipping fee schedule that considers the tip fees of other nearby landfill sites and the City's waste diversion objectives.

Design and Implement a Waste Management Promotion and Education Strategy

- Increase spending of the City's solid waste management promotion and education by approximately $5,000, which will be consistent with best practice levels.
- Develop a Waste Management Promotion and Education Strategy in order to maximize participation in the City's waste diversion programs and achieve the City's waste diversion goals.

Updating the Bag Limits / Bag Tag Policy

- Reduce the number of bags eligible for collection without bag tags from three to two.
- Develop a communications plan to advise residents of the reduction, when it would come into effect, and its benefits.

User Pay/Bag Limits for Business Sector Clients

- Introduce a full user pay program for the curbside collection businesses in Clarence Rockland.
- The program should consider:
    - The maximum number of bags businesses would be eligible to set out (above which they would be required to make arrangements directly with a contractor for waste collection)
    - Mandatory participation in the City's waste diversion programs to be eligible for municipal collection;
    - A pricing schedule and payment protocol that is not a burden administratively and provides an economic incentive for the business to reduce or divert waste; and

Construction and demolition recycling and reuse

- Engage the local C&D contractors to help identify opportunities, barriers and potential solutions to increasing C&D recycling in Clarence-Rockland. This could include the use of surveys, a workshop, or one-on-one meetings.

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- Investigate and promote private sector opportunities for C&D recycling in and around Clarence-Rockland.
- Prepare a business case for including C&D recycling opportunities at the landfill site.

Multi-Municipal Partnerships for Collection and Processing of Materials

- Continue discussions with neighbouring municipalities about opportunities for multi-municipal partnerships for solid waste management services.
- Work with interested neighbouring municipalities to develop a 5-to-10-year contract timeline for entering into multi-municipal contracts for solid waste management services. The timeline should identify applicable contract start/end dates and identify opportunities for alignment of multi-municipal contracts.

On-site Management of Organics

- Develop a Backyard Composting Program, including a plan for distribution of backyard composters and for the promotion and education of backyard composting.

Source Separated Organics (SSO) and Leaf and Yard waste

- Conduct a feasibility assessment for an SSO program midway through the upcoming waste collection contract. The assessment should consider:
    - Opportunities for neighbouring jurisdictions to collaborate on a multi-municipal SSO program. The collaborations might include:
        - Promotion and education;
        - Collection, including purchase/distribution of green carts and roadside collection; or
        - Centralized processing (e.g., establishment of a regional composting facility).
    - The advantages and disadvantages of building a municipally-owned composting facility or sending the collected organics to another facility; and
    - A business case for an SSO program, including:
        - Estimated costs for implementation, collection and processing;
        - Estimated savings from reduced collection and processing of garbage for disposal, including reducing weekly garbage collection to every-other-week;
        - Estimated savings and other benefits from diversion of organics from landfill, including increased lifespan of landfill, delayed costs of landfill expansion or new site selection, and environmental benefits; and
        - Opportunities for and implications of co-composting the wastewater treatment plant's biosolids.
- Include seasonal leaf and yard waste collection as an option in the upcoming waste collection contract.

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Appendix B – Long List Screening

Long List Screening Criteria / Legend

Diversion Potential / Critical for Supporting Diversion

- ~ = Minimal diversion potential
- ✓ = Some diversion potential (nil to 2% of total residential waste generated)
- ✓✓ = Good diversion potential (2% to 10% of total residential waste generated), or improved management of toxic / hazardous materials
- ✓✓✓ = Very good diversion potential (More than 10% of total residential waste generated)
- CSD = Policy or other option critical or otherwise very beneficial to support waste diversion

Cost Efficiencies/ Savings Potential

- ~ = Minimal to no cost savings
- $ = some potential for cost savings (or additional revenue)
- $$ = good to very good potential for cost savings (or additional revenue)

Implementation Cost

- $ = Low cost
- $$ = Moderate cost
- $$$ = Significant cost

Approach Innovation and/or Reliability

-  = Approach is innovative, or is shown to be a reliable solid waste option
-  = Approach has not been shown to be particularly innovative, or has not been shown to be a particularly reliable solid waste option

Carry Forward for Short List Evaluation

- **Y** = Yes, carry forward as a short-listed option
- **N** = No, option is screened out

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No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
	WASTE REDUCTION AND REUSE					
1.	**Promote on-site management of organics** (backyard composting and grasscycling)	✓✓	$	$		Y
2.	**Supporting Waste Minimization and Diversion at Special Events**	✓	~	$$		Y
3.	**Support Community Reduce and Reuse Programs**	✓	~	$		Y
4.	**Establish a Lendery Program**	~	~	$$		N
5.	**Curbside Give Away Weekends**	✓	~	$		Y
6.	**Subsidies, Rebates, Grants for Actions that Avoid, Reduce, or Reuse Waste**	~	~	$		N
	RECYCLING					
7.	**Increase the number of waste diversion special events.**	✓✓	$$	$		Y
8.	**Add additional materials to the municipal recycling program**	✓✓	$	$$		Y

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No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
9.	Textile recycling	✓✓	~	$$		Y
10.	Agricultural waste diversion	✓	~	$$		N
11.	Curbside battery recycling	✓✓	$	$		Y
	ORGANICS MANAGEMENT					
12.	Introduce household (food and kitchen waste) organics collection and composting	✓✓✓	~	$$$		Y
13.	Conduct further pilot testing of foodcycler-style home composting appliances.	✓	~	$$		Y
14.	Develop and Implement a Food Waste Reduction Strategy	✓	$	$		Y
	WASTE COLLECTION/RECEIVING					
15.	Assess garbage collection frequency (every other week collection)	CSD	$$	$		Y
16.	Assess collection using carts (automated or semi-automated curbside cart collection of garbage)	~	$	$$		Y
17.	RFID Technology on Waste Collection Containers	~	$	$		Y

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No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
18.	**Pilot-test Alternative Collection Containers in Public Spaces**	~	$	$		N
19.	**Zero Emissions Solid Waste Fleet**	~	$	$$		Y
	PROMOTION AND EDUCATION *{note – the various Promotion and Education options listed below could be integrated and implemented as part of the targeted/expanded promotion and education campaign option, or undertaken separately}*					
20.	**Conduct targeted/expanded promotion and education campaigns**	CSD	$	$$		Y
21.	**Develop branding for the Solid Waste Management Section / Program**	n/a	~	$		Y
22.	**Enhance Social Media Presence and use of Apps**	CSD	$	$		Y
23.	**Promote "Green" purchasing and Green Procurement**	✓	~	$		Y
24.	**Encourage Extended Producer Responsibility**	CSD	$$	$		Y
25.	**Provide Toolkit for Waste Diversion in Multi-Residential Buildings**	✓	~	$		N

No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
26.	Conduct periodic multi-season waste audits	CSD	~	$$		Y
	MUNICIPAL POLICY					
27.	Introduce / reduce maximum bag limit	CSD	$	$		Y
28.	Increase the cost per bag tag	~	$	$		Y
29.	Shift to full user pay	~	$	$		Y
30.	Enforcement of Waste Collection By-Law	CSD	~	$		Y
31.	Differential tipping fees	✓✓	$	$		Y
32.	Clear Garbage Bags	✓✓	~	$		Y
33.	Reduction Strategies and Bans for Single-use Items	✓	~	$		Y
34.	Preparation of Multi-Residential development standards	~	~	$$		N
35.	Update waste performance metrics	~	~	$		Y

No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
36.	**Mandatory Waste Diversion in all Municipal Facilities**	✓	~	$$	👍	Y
	IC&I					
37.	**Promotion of waste minimization/diversion in the IC&I sector**	✓	~	$	🤝	N
38.	**Further or complete reduction in provision of waste collection services to IC&I sector (or portions of it)**	✓✓[59]	~	$	👍	Y
39.	**Establish a system for Construction and Demolition (C&D) recycling**	✓✓	$	$$	🤝	Y
40.	**Divert C&D Materials from Landfill Site either through landfill fees or bans**	✓✓[12]	$	$	👍	Y
41.	**Partnership with COIL Zero Waste Economic Transformation Lab**	~	~	$	🤝	N
	OTHER OPPORTUNITIES					
42.	**Explore multi-municipal partnerships for waste management services**	✓✓	$$	$	👍	Y

[59] While waste may continue to be disposed at a private facility, the Municipality would be able to retain that disposal capacity for its residential waste and therefore extend the useful life of the landfill site.

No.	Option and Description	Screening Criteria				Carry forward to Short List Evaluation?
		Diversion Potential / Critical for Supporting Diversion	Cost Efficiencies/ Savings Potential	Implementation Cost	Approach Innovation and/or Reliability	
43.	Assisted Waste Collection Services	~	~	$		N
	DISPOSAL					
44.	Future Expansion of Landfill Site	~	$	$$		Y
45.	Develop a new landfill site	~	~	$$$		N
46.	Develop an Energy-from-Waste facility	~	~	$$$		N
47.	Develop a Mechanical Biological Treatment facility	~	~	$$$		N
48.	Export garbage to a different landfill	~	~	$$		Y

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