

9.0 Waste Diversion

9.1 Background

In November of 2018, the MECP released its Environment Plan and a subsequent discussion paper (Reducing Litter and Waste in our Communities) was released in March 2019 that proposes steps to implement the Environment Plan. The plan and paper identified a number of waste related initiatives and goals that Waste Connections is well poised to support such support the development of regulations for designated material recovery, expand green bin collection in large cities and relevant businesses, educate the public and business about reducing and diverting recoverable materials. Waste Connections supports the initiative in the Environment Plan that states that the MECP will be exploring opportunities to recover resources of value from waste through the application of new technologies and increased recycling initiatives, before final disposal. The key portions of the Environment Plan and discussion paper that pertain to waste diversion and landfill operations are to reduce waste; however, as the Made-In-Ontario Environment Plan²²³ states “while we work to reduce the amount of waste we produce, it is recognized that there will be a need for landfills in the future”. The key messages taken from the Environment Plan and discussion paper in relation to Waste Connections’ EA is that all reasonable means will be explored to achieve the Province’s goals to increase the recovery of materials of value from the waste stream, recognizing that there will still be a need for landfills in the future.

The objective of the 2016 *Resource Recovery and Circular Economy Act*²²⁴ is to transform the existing waste diversion framework to support a circular economy, to set an overarching provincial policy direction, and to establish a new producer responsibility regime.

Ontario’s Food and Organic Waste Policy Statement²²⁵, approved by the Ontario Cabinet in 2018, sets a policy direction for the Province for food and organic waste. The Policy must be cross-referenced and considered alongside other existing policies, i.e., *Environmental Protection Act; Planning Act; Environmental Assessment Act; Water Resources Act*; etc. Under the current policy statement, there are two (2) sections most related to the Ridge Landfill EA.

- Section 4 - *Recover Resources from Food and Organic Waste; and*
- Section 6 - *Support Resource Recovery Infrastructure.*

²²³ Government of Ontario (2019). A Made-in-Ontario Environment Plan. Available at: <https://www.ontario.ca/page/made-in-ontario-environment-plan>

²²⁴ Government of Ontario (2016). *Resource Recovery and Circular Economy Act*, 2016, S.O. 2016, c. 12, Sched. 1. Available at: <https://www.ontario.ca/laws/statute/16r12>

²²⁵ Government of Ontario (2018). Food and Organic Waste Policy Statement. Available at: <https://www.ontario.ca/page/food-and-organic-waste-policy-statement>

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

Section 4 of the policy statement provides direction and targets for each of the residential, multi-family, industrial and commercial and the institutional sectors. In terms of the residential sector, Policy 4.2ii applies to Chatham-Kent as a municipality in southern Ontario. Chatham-Kent will be required to implement a source separated food and organic waste collection program with the following target: *50% waste reduction and resource recovery of food and organic waste generated by single-family dwellings in urban settlement areas by 2025*. A focus to increase recovery of food and organic waste from large IC&I facilities (i.e., generates more than 300 kg of food and organic waste per week), such as grocery stores, shopping malls, restaurants, hotels, motels, educational institutions, food processing facilities and hospitals will help build a circular economy. Targets for large IC&I facilities ranges from 50% to 70% waste reduction and resource recovery of food and organic waste generated in the facility by 2025, based on facilities subject to *O.Reg. 103/94*.

Sub-section 6.8 of the Policy Statement's Section 6, The Support Resource Recovery Infrastructure is also related to the Ridge Landfill EA and states: Proponents of new or expanded waste management systems for disposal should consider resource recovery opportunities for food and organic waste.

Waste Connections is committed to considering opportunities to enhance waste diversion and assist the Province in meeting its diversion goals and objectives laid out in the Province's Made-in-Ontario Environment Plan, the discussion paper, the *Waste-Free Ontario Act*²²⁶ and the Food and Organic Waste Policy Statement.

To further aid in the development of waste diversion options, Waste Connections sought input during the EA consultation activities and conducted high-level surveys of the waste sent to the Ridge Landfill for disposal. Extensive communication and consultation activities were conducted (as described in **Section 8.0** and in Appendix B – Record of Consultation) and input was sought

²²⁶ Ministry of the Environment, Conservation and Parks (2016a). *Waste Free Ontario Act*, 2016, S.O. 2016, c12-Bill 151.

on perceptions and opportunities for increased waste diversion. A series of high-level surveys were completed over a 2 (two) week period at six (6) Waste Connections transfer stations within the proposed service area. The purpose of the surveys was to gain insight to the diversion potential of materials received from Waste Connections' current customer base under current regulatory and market conditions. The survey results are documented in the context of the Review of Diversion Options Report in Appendix E.

A total of ten (10) options were developed and evaluated that were focused on increasing diversion at-source, at the landfill or elsewhere in its waste management system from its IC&I customers in its southern and central Ontario waste shed and from the local Chatham-Kent community. Half of the options related to diversion opportunities at the Ridge Landfill while the other half looked at options at-source and within the Waste Connections' system.

In addition, there are a number of existing services that Waste Connections provides that will be continued such as promotion, education and diversion programs within the Municipality of Chatham-Kent and among its IC&I customer base and supporting educational scholarships, research and innovation in waste management.

The following provides a summary of the options considered, evaluation results and identification of preferred ways to increase waste diversion. The full report can be found in Appendix E – Diversion Options.

9.2 Assessment of Diversion Opportunities

An evaluation of opportunities to enhance waste diversion activities, either at the Ridge Landfill, or at-source and elsewhere in Waste Connections' integrated waste management system was undertaken. While all considerations prioritized public and worker safety a series of ten (10) options were evaluated by the following questions:

- Does it minimize GHG emissions?
- Is there sufficient material for processing?
- Is the opportunity supported by regulation?
- Is there demand and support for the service locally, at-source and/or elsewhere in the system?
- Is it compatible with other existing services?
- Are there infrastructure/space limitations to providing the service?
- Is it economically viable?
- Is it advantageous to provide the services at other location(s)?

9.2.1 Diversion Options Considered

Waste Connections examined and evaluated the feasibility and viability of implementing on-site diversion services as part of the preferred site development alternative method. On-site processing is defined as waste diversion activities occurring within the boundaries of the Ridge Landfill property for waste materials received from Waste Connections' proposed service area (i.e., Southern and Central Ontario IC&I waste and waste materials received from local sources within and from the Municipality of Chatham-Kent).

The proposed service area for the Ridge Landfill is Southern and Central Ontario for IC&I waste and residential waste for Chatham-Kent. The IC&I sector has historically had low overall diversion rates (15%) as per Statistics Canada. As a company, Waste Connections contributes to an annual average of approximately 182,000 tonnes of IC&I waste diverted within the proposed service area. In 2017, Chatham-Kent diverted approximately 17,000 tonnes of its 48,500 tonnes of residential waste generated (35% diversion rate) primarily through the blue box (collection provided by Waste Connections) and leaf and yard waste collection programs. The municipality does not currently have a green bin organic waste collection program.

9.2.1.1 At-Ridge Options

The material disposed (residuals) at the Ridge Landfill is generated from Waste Connections customer base of approximately 30,000 businesses and industries from all sectors, via nine (9) transfer stations operated by Waste Connections, and third party transfer stations operated by others. There is high variability in the customer type and resulting composition of residual waste which makes it very challenging to predict how the IC&I waste stream, particularly the proportion of food and organic waste, will change in the future. As the MECP enacts new policies to increase diversion of organic materials, the Ridge Landfill is still expected to receive 1.3 million tonnes of waste for disposal each year. What may be impacted is the amount of landfill gas produced at the Ridge Landfill as it is anticipated that the quantity of organic materials being sent by customers to disposal will likely decrease in the future. Local waste in the Municipality of Chatham-Kent is direct-hauled from the point of generation to the Ridge Landfill.

Most of the waste brought to the landfill comes through processing/transfer facilities where recyclables such as wood, metal and cardboard are already being removed (positive sort) before transfer.

Waste Connections attempts to divert other materials at the Ridge Landfill (e.g., autofluff, wood chips, glass, asphalt) for use in on-site operations such as daily cover, road construction and

maintenance. The estimated annual amount of waste diverted at the Ridge Landfill has ranged from 160,000 tonnes to 250,000 tonnes in the last few years (caused by fluctuations in the market place).

Chatham-Kent has a network of eight (8) municipal transfer stations for receipt of materials primarily from residential generators including: large items, regular waste, recyclables, appliances, scrap metal, and electronics. Waste Connections currently collects residential waste and recycling for the serviced areas in Chatham-Kent and transports materials collected at the transfer stations to the landfill. All of the municipal solid waste generated from within the Municipality is disposed at the Ridge Landfill except for Blue Box materials that are taken to Chatham-Kent Recycling and leaf and yard waste managed by the municipality.

The following five (5) diversion options at the Ridge Landfill were evaluated:

- Option 1: Mixed waste processing facility (MWPF) – construction and operation of a MWPF to sort divertible materials such as organics and recyclables from the received waste materials.
- Option 2: Materials recovery facility (MRF) – construction and operation of a MRF to receive, sort and prepare recyclable materials for market.
- Option 3: Beneficial reuse of construction and demolition (C&D) waste – Receiving segregated, homogenous loads of C&D waste for beneficial reuse for onsite purposes or sold/donated to end markets with priority on charitable organizations.
- Option 4: Source separated organic (SSO) waste processing – receive and process SSO collected within Chatham-Kent from municipal and IC&I sources.
- Option 5: On-site drop-off depot – work with the Municipality of Chatham-Kent to construct a drop-off depot that would enhance and compliment Chatham-Kent’s existing services.

9.2.1.2 At-Source and Elsewhere in the System

Waste Connections has 24 stand-alone operating facilities in Ontario that are responsible for local IC&I and/or residential curbside collection; the operation of MRFs and waste transfer stations including two (2) landfills: the Ridge Landfill and the Navan Landfill in Ottawa. Waste Connections works with their IC&I and municipal customers to find at-source solutions for segregation of wastes that have a beneficial end-use. Where at-source separation is not practical for their customers, limited manual segregation of wastes for recovery (positive sort) can and does occur at district transfer stations where feasible, and prior to shipment for final residual disposal. The

Waste Connections operating facilities that send their residual waste to the Ridge Landfill have well established waste segregation programs.

Waste Connections continually sources local facilities for recycling of asphalt, brick, concrete, clean fill, organics, wood, roofing, drywall, paper fibres, comingled containers, metals, separately collected cardboard and other materials.

On a system-wide basis Waste Connections diverts an average of 262,000 metric tonnes per year of IC&I sector material away from disposal sites in Ontario; approximately 180,000 metric tonnes of this material is diverted in southern and central Ontario.

Some Waste Connections' districts in Ontario have partnered with local farms to reuse some unique waste materials such as: grape residuals, greenhouse vines, as well as other organics and sawdust. Waste Connections Windsor diverts coco product from greenhouse cleanouts to farms. Coco product is a plant growth by-product from greenhouses that is sought by field crop farmers for its exceptional water retention, good drainage and aeration features. Waste Connections has invested and partnered with TerraCycle to find recycling solutions for materials that are hard to recycle and not included in municipal curbside recycling programs.

The following five (5) diversion options at-source and elsewhere in the system were evaluated:

- Option 6: Increased partnerships – identify opportunities to facilitate partnerships among its customers where a waste product of one (1) customer could be a resource for another, where feasible.
- Option 7: Support implementation of designated materials recovery in the IC&I sector – provide technical training and educational support to customers during government-led designated materials recovery legislation for businesses transition periods.
- Option 8: Amending 3Rs for the IC&I sector - respond to amendments to 3Rs (i.e., Reduce, Reuse and Recycle) regulations aimed at increasing recovery across all sectors and specifically the IC&I sector.
- Option 9: Infrastructure and Equipment – invest in infrastructure and equipment to meet market demands for the diversion of materials such as food and organic waste. Infrastructure could include organic waste processing facilities. Equipment could include provision of the latest state-of-the-art waste collection vehicles (e.g., CNG fuelled vehicles) and carts/containers to support organic and other waste diversion collection programs.

- Option 10: Monitoring and auditing activity - support provincial objectives toward enhanced data collection, reporting, and performance measures, where feasible and conduct customer waste audits to identify opportunities for increased waste diversion of select materials.

9.2.2 Results of Evaluation of Diversion Options

Waste Connections has a strong and established network of integrated waste collection, processing facilities and processing arrangements supported by a strong customer base that can and will help facilitate the Province in meeting goals and objectives of the Made-In-Ontario Plan, the subsequent discussion paper (Reducing Litter and Waste in our Communities), the *Waste-Free Ontario Act*²²⁷ and the Food and Organic Waste Policy Statement.

Waste Connections is committed to enhancing its waste diversion programs either at-source, at the Ridge Landfill or elsewhere in the integrated system. In addition, Waste Connections' integrated waste management network, strong customer base and numerous business arrangements in Ontario enables Waste Connections to share its expertise to educate and respond to customers to meet both Provincial and their own corporate waste diversion targets and objectives. The company also has the financial resources and desire to invest in infrastructure, research and innovation that supports its business which includes waste diversion initiatives in Ontario. Waste Connections is a founding member of Environmental Research and Education Foundation (EREF) which funds and directs scientific research and educational initiatives for waste management practices to benefit industry participants and the communities they serve.

Table 9-1 provides a summary of the options Waste Connections identified, evaluated and proposed to carry forward along with proposed implementation timing and estimated quantities of waste diverted, where applicable and known.

²²⁷ Ministry of the Environment, Conservation and Parks (2016a). *Waste Free Ontario Act*, 2016, S.O. 2016, c12-Bill 151.

Table 9-1: Summary of Diversion Options Evaluation

Option No.	Option Name	Carried Forward?	Implementation Timing	Diversion Potential (tonnes per year)
1	Mixed Waste Processing Facility	No	-	-
2	Materials Recovery Facility	No	-	-
3	Beneficial Reuse of C&D Waste	Yes	Anticipated to start following EAA and ECA approval (2021)	2,500 to 3,500
4	SSO Waste Processing	No	-	5,000 to 6,500 initially ^{1,2,3}
5	On-site Drop-off Depot	Yes	Anticipated to start following EAA and ECA approval (2021) and expanded as more materials are designated	1,500 to 2,500 initially ²
6	Increased Partnerships	Yes	Ongoing	N/A ¹
7	Support implementation of designated materials recovery in the IC&I sector	Yes	Following government legislation for designated materials	N/A ²
8	Amending 3Rs for the IC&I Sector	Yes	Following draft proposed amendments to the 3Rs Regulations	N/A ²
9	Infrastructure and Equipment to Support New Diversion Programs and Initiative	Yes	Anticipated to start by 2025 and expanded per MECP initiatives	5,000 to 6,500 initially ^{1,2,3}
10	Monitoring and Auditing Activity	Yes	Ongoing	N/A ¹

Notes:

¹ Waste Connections' 30,000 client mix and waste composition changes daily which makes estimating waste diverted through this option very challenging. It is noted that diversion is expected to increase as policies are enacted and customers send less divertible waste (e.g., organic waste) to landfill.

² Diversion potential will depend on materials targeted by MECP either through designating materials and/or changes to existing and/or new regulations

³ Initial quantity estimates are based on capturing 50% of the residential source-separated organics generated from the Municipality of Chatham-Kent.

In addition to the above, Waste Connections will continue to offer the following services to assist the Province in meeting its diversion targets:

- Collaborate and partner with the Municipality of Chatham-Kent in the enhancement of its promotion, education and diversion programs;
- Share public and IC&I survey findings with Chatham-Kent Waste and Recycling Services and identify potential opportunities for additional programs and services;
- Promote and help educate customers in both the IC&I and residential sectors in Chatham- Kent and across the wider waste management network in waste prevention and reduction, regulatory changes, waste audit findings and resource recovery initiatives;
- Support educational scholarships, research and innovation in environmental management in general and waste management programs in particular (i.e., EREF); and
- Encourage companies, such as TerraCycle, to provide solutions to increase diversion of hard to recycle materials.

Increased waste diversion is an important component of Waste Connections' efficient, integrated system. It will assist the Province in minimizing the amount of waste sent for landfilling and achieving diversion and recovery targets. However, the additional diversion opportunities identified in this report will not reduce the need of the 1.3 million tonnes of annual disposal capacity required during the 20-year planning period for the Ridge Landfill.

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