

Appendix F

Residual Waste Processing Plan

January 2020

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Executive Summary

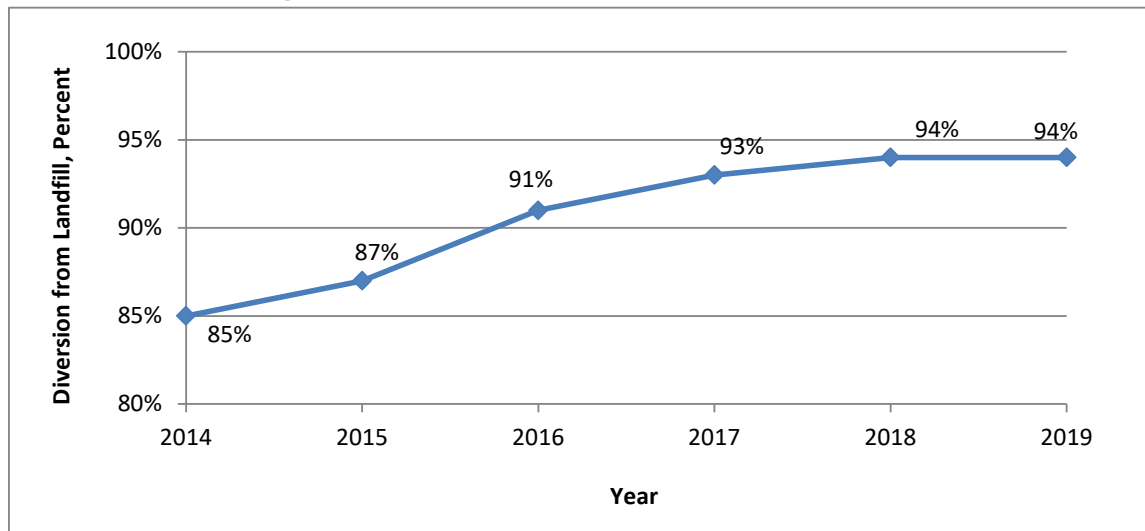
Through the Regional Official Plan, the Regional Municipality of York (the Region) has established a goal of achieving 90% diversion from landfill by 2016, and to divert 100% of all waste that can feasibly be managed by means other than landfilling by 2020. This goal is to be achieved in accordance with the “4 Rs” waste management hierarchy, which places highest priority on the first three “Rs” (reduction, re-use, and recycling), while making use of the fourth “R”, recovery (of energy), only for those materials that cannot be managed by other means. The 4 Rs hierarchy is illustrated in Figure 1

Figure 1
The 4 Rs Waste Management Hierarchy



York Region is a leader in waste diversion, achieving first place in the Large Urban Category of the annual Resource Productivity and Recovery Authority (RPRA) Datacall in every year since 2012. As illustrated in Figure 2, York Region exceeded its goal of reaching 90% diversion from landfill in 2016, and has continued to improve, achieving 94% diversion from landfill in 2018 and 2019.

Figure 2
York Region Diversion from Landfill (2014 to 2019)



While reduction, re-use, and recycling are the highest priorities in the waste management hierarchy, energy recovery remains a key contributor to overall diversion from landfill success. In 2019, York Region managed 127,858 tonnes of residual waste at energy-from-waste (EFW) facilities, which accounted for 36% of total tonnes managed by the Region for all waste streams. Therefore, securing stable long-term EFW processing capacity is a critical step toward ensuring that the Region can continue to maximize diversion from landfill and meet its strategic goals.

This *Residual Waste Processing Plan* considers alternative methods of securing long term processing capacity. Based on this analysis, staff recommend that the Region issue an RFP in Q4 2020 to secure up to 120,000 tonnes of annual EFW processing capacity from one or more privately owned facilities from September 23, 2023 through January 2046 to serve as an interim bridge until such time as the Region has enough tonnage to undertake expansion of the Durham York Energy Centre (DYEC). The recommended contract structure includes an initial term of approximately 12 years to align with the first term of the DYEC operating contract. This initial term would be followed by an additional 10 years of optional term extensions of two to three years each to provide the Region with flexibility to set a start date for DYEC expansion.

In addition, staff recommend that an RFP be issued no later than Q1 2021 to secure up to 40,000 tonnes of landfill capacity to manage waste received during EFW facility outages and bulky materials that are not suitable for EFW. The new landfill contract would begin at the end of the Region's existing contract with Walker Environmental Services in June 2025 and extend through January 28, 2046 to coincide with the end date of the EFW contracts.

1 Introduction

1.1 Purpose

This *Residual Waste Processing Plan* (the Processing Plan) considers alternative methods of securing EFW processing capacity to manage non-recyclable residual waste and maximize diversion from landfill in accordance with the SM4RT Living Plan. The Processing Plan considers long-term tonnage projections, expiration dates of existing contracts, and alternative processing facility options, and provides a recommended strategy for meeting the Region's processing needs for the next 25 years.

1.2 Overview of Existing Residual Waste Program

The Region and its local municipalities provide curbside collection, transfer, and processing of residual waste on behalf of their residents. Service delivery follows a two-tiered structure, with curbside collection being provided by the local municipalities, and transfer and processing services being provided by the Region.

In addition to curbside waste collection, the Region also accepts residual waste at public drop-off depots including the McCleary Court and Elgin Mills Community Environmental Centres and the Georgina Transfer Station. Residual waste materials collected at public depots typically contain a high percentage of bulky and/or non-combustible material that is not suitable for management at an EFW facility and requires landfill disposal. The third primary source of residual waste managed by the Region is non-recyclable materials that are removed from the blue box stream as residue at the Region's Material Recovery Facility (MRF). Table 1 provides a summary of York Region's 2019 residual waste stream by source.

In 2019, the Region needed to dispose of 4,311 tonnes of mixed paper bales from the MRF that could not be recycled due to the absence of end markets. These materials were managed as residual waste through the Region's contracts with Covanta Niagara and Emerald EFW. To address this issue, the Region completed upgrades to its MRF processing equipment in 2019 to improve product quality and secure new markets. As of mid-January 2020, the Region is successfully marketing all its mixed paper. Region is cautiously optimistic that this situation will not recur, and these tonnes are included in Table 1 for completeness only.

Table 1
Summary of York Region 2019 Residual Waste Tonnage by Source

Source	Tonnes Collected
Municipal Curbside Collection	101,853
Public Drop-Off Depots	27,291
MRF Residue	18,055
Blue Box Managed Through EFW	4,311
Total	151,510

With the coming transition to full producer responsibility for the blue box program under the *Resource Recovery and Circular Economy Act*, the Region will no longer be responsible for this program as early as 2023. If the blue-box-related tonnage is removed from Table 1, the Region’s 2019 residual waste tonnage would be reduced by 22,366 tonnes. This reduction in residual waste tonnage managed by the Region after transition to full producer responsibility should be taken into account when securing processing capacity.

1.3 Summary of Existing Processing and Disposal Capacity

The Region currently manages residual waste at the Durham York Energy Centre (DYEC), an EFW facility that it co-owns with Durham Region, and through contracts with privately-owned EFW facilities and landfills as summarized in Table 2. The DYEC is permitted to process up to 140,000 tonnes of residual waste per year with 30,000 tonnes of annual capacity owned by York Region and 110,000 tonnes owned by Durham Region.

At full capacity, the facility exports approximately 14 MW of electricity to the provincial grid, enough to power 10,000 homes, while recovering recyclable metals from the ash. The Regions are currently applying to amend the facility’s approvals to allow for processing of up to 160,000 tonnes per year using the existing infrastructure. While this proposed permit amendment will provide an opportunity to process additional tonnes when feasible, the guaranteed minimum annual processing rate will remain at 140,000 tonnes per year.

As shown in Table 2, all of the Region’s contracts with private EFW and landfill facilities expire between 2020 and 2028. As further discussed in Section 1.5, this creates an

immediate need to secure additional capacity to ensure continued sustainable management of residual waste.

Table 2
Summary of Existing Residual Waste Processing and Disposal Capacity

Facility	Facility Location & Travel Distance ¹	Facility Type	Annual Tonnage		Current Term Expiry Date ³	Extension Term Expiry Dates
			Min.	Max.		
Durham York Energy Centre ²	Courtice (74 km)	EFW	30,000	30,000	Jan. 2036	Jan. 2041, Jan. 2046
Covanta Niagara	Niagara Falls, NY (176 km)	EFW	55,000	70,000	Sept. 2023	N/A
Emerald EFW	Brampton (49 km)	EFW	27,000	33,000	Sept. 2023	Sept. 2028
EFW Subtotal			112,000	133,000		
Walker Environmental	Niagara Falls, ON (160 km)	Landfill	20,000	50,000	Jun. 2025	N/A
Twin Creeks	Watford (276 km)	Landfill	0	20,000	Dec. 2020	N/A
Green Lane ³	London (229 km)	Landfill	0	78,000	Dec. 2022	N/A
Landfill Subtotal			20,000	148,000		
Grand Total			132,000	281,000		

1. Average one-way travel distance from transfer stations to processing facility.
2. DYEC tonnages include York Region's share only and exclude additional unguaranteed tonnage to be obtained through proposed amendment to increase maximum annual processing rate to 160,000 tonnes per year.
3. Through agreement with Toronto, the Region's 25,000 tonne minimum commitment has been waived subject to the understanding that the Region will only use the facility as a destination for mixed broken glass or as an emergency overflow destination for residual waste.

1.4 Landfill Capacity

Although the 4 Rs Waste Management Hierarchy prioritizes energy recovery over landfill disposal, residual waste received at the Region's public drop-off depots contains a high proportion of bulky or non-combustible wastes not suitable for processing at EFW facilities. Further, EFW facilities are complex mechanical systems that require regular maintenance outages, and they also have limited ability to increase their processing rate to respond to periods of peak demand, such as maintenance outages at other facilities. As a result of all these factors, it is necessary for the Region to maintain and use some landfill disposal capacity for managing non-processable materials and for contingency disposal during maintenance outages and seasonal peaks. Based on the Region's operating experience, landfill disposal requirements typically range from 15 to 20% of total annual residual waste tonnage, and it is recommended that the Region procure sufficient disposal capacity to allow for contingency disposal of additional waste if necessary. The actual amount of landfill disposal required will vary from year to year based primarily on the number and duration of planned and unplanned maintenance outages at EFW facilities, and to a lesser extent on the evolving composition of the Region's waste streams. The Region makes every effort to minimize landfill disposal by shifting tonnage between processing facilities during maintenance outages when possible.

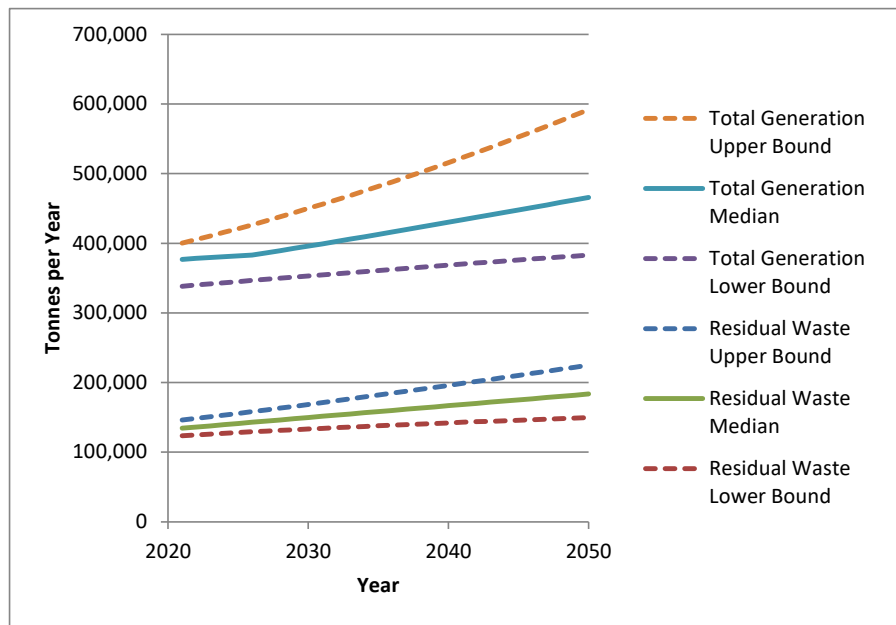
The Region currently recovers mixed broken glass from the blue box program at its material recovery facility. Pieces of glass larger than 9 mm (3/8 inch) are sent to the NexCycle facility in Guelph, where they are refined into cullet and sold to end markets for use in new products. Fine pieces of glass less than 9 mm in size are a lower-value product that is currently sent to Green Lane Landfill, where it is mixed with gravel and used as a construction material for building temporary roads. In 2019, the Region sent 6,400 tonnes of fine glass to Green Lane for use in roadbuilding. It is anticipated that the Region will continue to require some landfill capacity to receive mixed broken glass until responsibility for the blue box program transitions to the producers under the *Resource Recovery and Circular Economy Act* in the 2023 to 2025 timeframe.

1.5 Long Term Tonnage Projections

York Region's Fiscal Planning Unit has prepared long term waste tonnage projections for inclusion in the SM4RT Living Plan 5-Year Update. The analysis included annual tonnage estimates under a lower bound scenario, a median scenario, and an upper bound scenario through 2050 for use in this Processing Plan. Confidence in the latter year projections (2031 – 2050) is reduced due to uncertainty associated with these very long timeframes. Projections for residual waste tonnes and total waste generation are shown in Figure 3. Residual waste projections are based on inbound tonnage from the

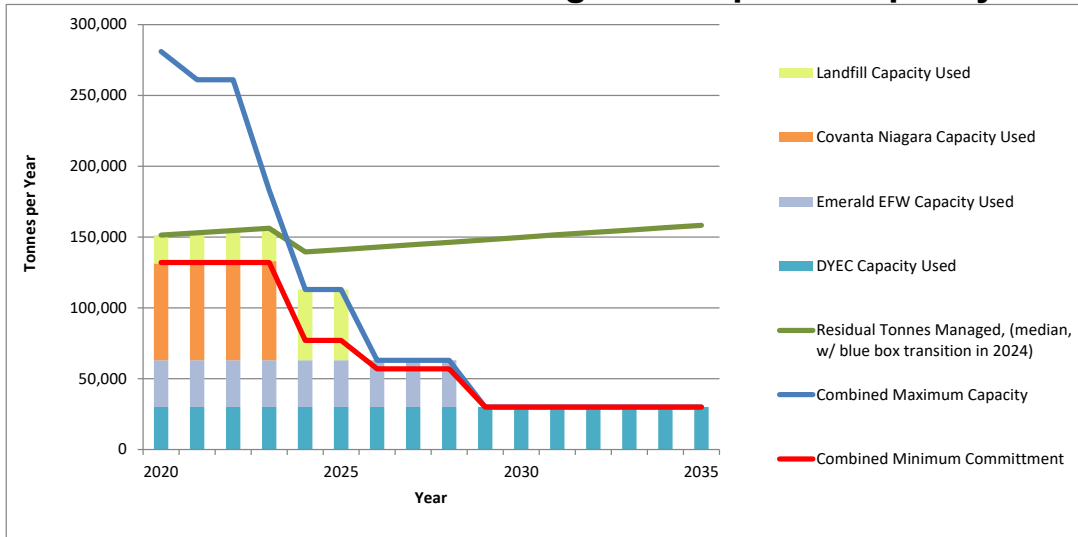
curbside collection program and public depots and do not include MRF residue. As noted previously, it is anticipated that the Region will not be responsible for management of MRF residue after the blue box program transitions to full producer responsibility in the next five years.

Figure 3
Projected York Region Residual Waste Tonnages



As noted in Section 1.3, all of the Region’s current contracts for processing and disposal of residual waste at privately owned facilities expire between 2020 and 2028. As illustrated in Figure 4, the total amount of contracted processing and disposal capacity will drop below projected inbound tonnage after 2023 with the expiration of the Covanta Niagara contract, resulting in a capacity deficit. This capacity deficit continues to grow in 2025 with expiration of the Walker Environmental contract, and in 2028 with the expiration of the Emerald EFW contract. Additional contract capacity is required to ensure continued sustainable management of residual waste beyond 2023.

**Figure 4
Residual Waste Processing and Disposal Capacity**



1.6 Performance Target

The Region exceeded its goal of reaching 90% diversion from landfill in 2016, and has continued to improve, reaching 94% diversion from landfill in 2018 and 2019. Transitioning the blue box program to full producer responsibility will have an impact on this performance metric. In 2019, the blue box program accounted for 22% of total tonnes managed. After the blue box stream transitions to full producer responsibility residual waste will make up a larger percentage of the total tonnes managed by the Region impacting the diversion from landfill metric. For example, if the blue box program had been removed from Regional management in 2019, then the Region’s diversion from landfill result would have decreased by two percentage points from 94% to 92% as illustrated in Table 3

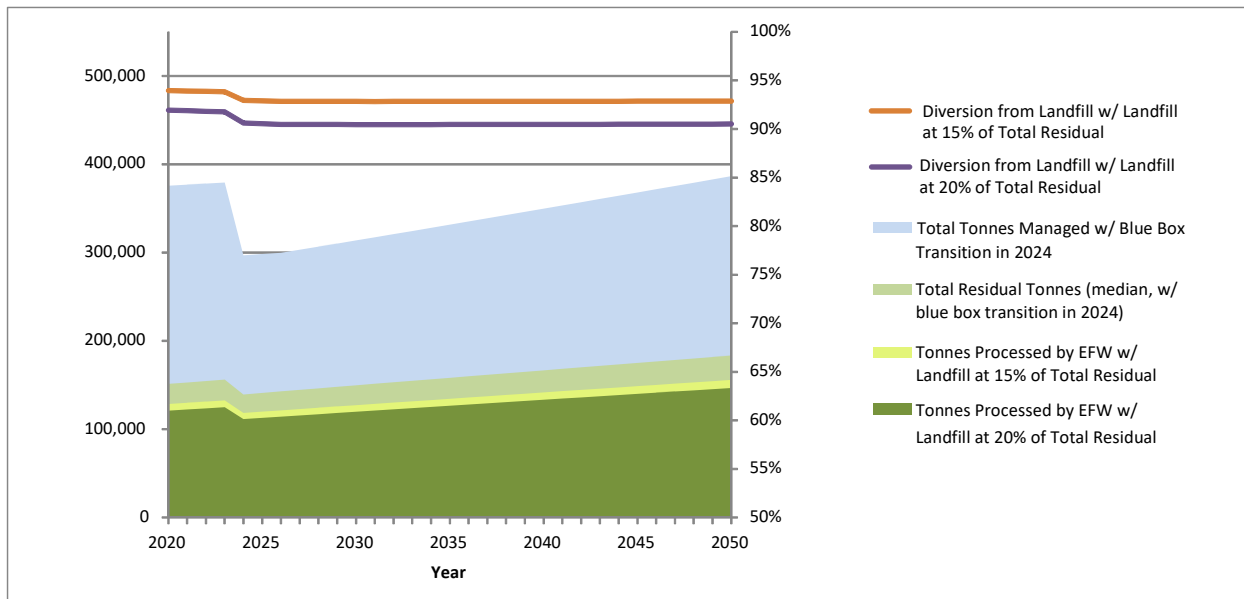
**Table 3
Potential Impact of Blue Box Transition on Diversion-from-Landfill Metric**

Source	2019 Actual Tonnes (Blue Box Included)	2019 Tonnes with Blue Box Excluded
Residual Waste	129,144	129,144
Organics	100,874	100,874
Blue Box	78,243	0
Leaf and Yard Waste	42,814	42,814

Other Diversion - Depots	2,659	2,659
Household Hazardous Waste	1,297	1,297
Electronics	1,117	1,117
Total Tonnes Managed	356,148	277,905
Tonnes Managed by Landfill	22,900	22,900
Diversion from Landfill	94%	92%

Achieving 94% diversion from landfill is nearing the limit of what is possible prior to blue box transition given the ongoing need to manage bulky wastes and provide contingency landfill disposal during maintenance outages. It is expected that the level of diversion from landfill will vary in future years depending on the amount of EFW maintenance that occurs in a given year or other factors such as fluctuations in total tonnes managed caused by highly variable leaf and yard waste tonnages. However, as illustrated in Figure 5, it is expected that the Region will continue to achieve between 90% and 94% diversion from landfill after blue box program transition provided that landfilled tonnage remains between 15% and 20% of the total residual waste stream in any given year.

Figure 5
Projected Future Diversion from Landfill



2.0 Durham York Energy Centre Expansion

There are two primary options for providing the required additional EFW processing capacity to maximize diversion from landfill after the current processing contracts expire: expansion of the Durham York Energy Centre, and securing capacity through contracts with one or more privately owned facilities. DYEC expansion is considered in this section, and contracts with private facilities are discussed in the section that follows.

2.1 DYEC Expansion Timeframe

DYEC expansion is expected to be a lengthy process requiring approvals under the Environmental Assessment Act and the Environmental Protection Act. The estimated time required could range from 8 to 12 years for approvals and permits, design, construction and commissioning. Additional EFW capacity will be required in less than four years when the Region's contract with Covanta Niagara expires in September 2023. The Region will need to secure additional contract capacity to serve as an interim bridge until DYEC expansion can be implemented.

2.2 Available Tonnage for DYEC Expansion

In accordance with the Project Agreement, the DYEC was designed to be readily expandable to 250,000 to 270,000 tonnes of annual processing capacity. This incremental increase of 110,000 to 130,000 tonnes per year from the base 140,000 tonne annual processing capacity would be achieved through construction of a third stoker-grate, boiler, and air pollution control train. A second turbine-generator unit and air cooled condenser unit would also be required to service the new boiler train. This proposed expansion is considered to be the minimum size increment required to achieve reasonable economies of scale on the expansion capital.

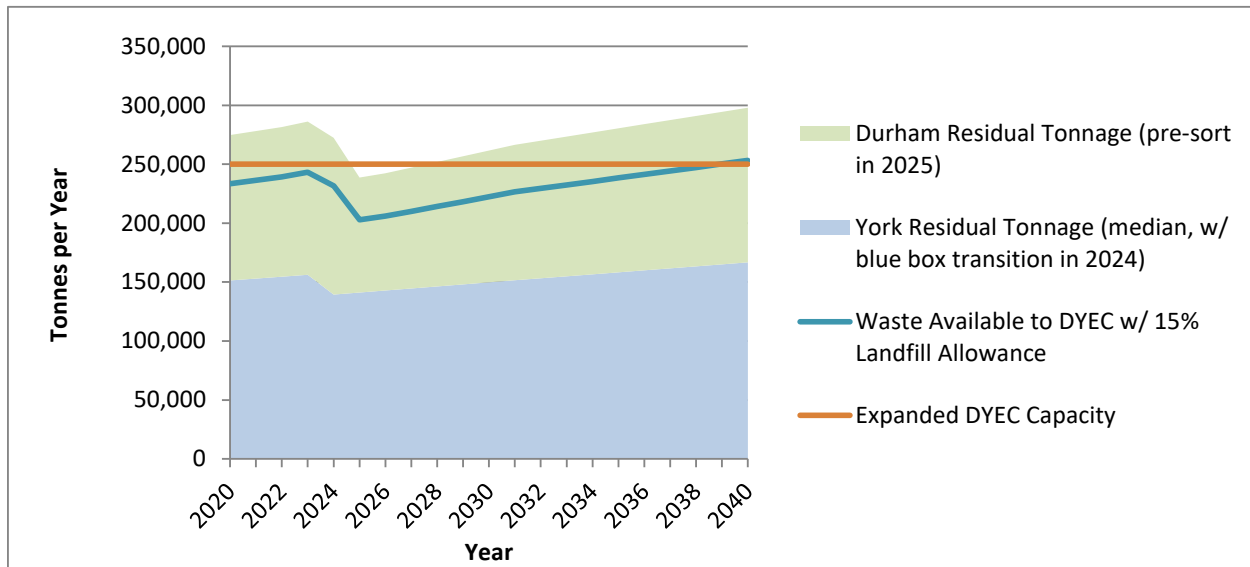
Durham Region is planning to build a mixed waste processing plant to recover additional recyclable materials and organics from their residual waste stream. This processing plant is expected to be operational by 2025. This project is forecasted to reduce Durham Region's residual waste volumes by approximately 25 to 30 percent.

In 2019, Durham Region and York Region managed a combined 272,580 tonnes of residual waste. However, projected residual waste tonnages are not expected to reach levels required to support expanded DYEC facility operations until the 2035 to 2040 timeframe, as illustrated in Figure 6. Reasons for this projected shortfall include:

- Loss of MRF residue during blue box transition (2024)
- Commencement of operations at Durham Region's mixed waste processing plant (2025)

- Ongoing landfill disposal of non-processable waste and waste received during maintenance outages.

**Figure 6
Combined Durham and York Region Tonnage Available for DYEC
Expansion**



To provide the needed processing capacity in the interim period between expiration of the Covanta Niagara contract in 2023 and the 2035 to 2040 timeframe when sufficient tonnage is available to support DYEC expansion, it is recommended that the Region procure additional processing capacity at one or more privately owned EFW facilities.

2.3 Financial Implications of DYEC Expansion

York Region’s unit operating costs for transportation and processing at the DYEC, Covanta Niagara, and Emerald EFW currently range from \$75 to \$80 per tonne. Continuing to use third party EFW contracts rather than expanding the DYEC is not expected to have a significant impact on the Region’s annual operating budget. The per tonne gate fees paid to Covanta Niagara and Emerald EFW include the contractor’s operation and maintenance cost, overhead, profit, and long-term capital debt retirement.

Based on preliminary estimates from engineering consultants, the Region is currently carrying \$190,000,000 in the long term capital plan in 2035 and 2036 for DYEC expansion. The 2035-2036 timing proposed in the capital budget aligns well with the projected timeframe when sufficient tonnage will be available to support DYEC expansion.

3.0 Interim Contracts with Privately Owned EFW Facilities

Durham and York Region's combined residual waste tonnages are not projected to be sufficient to support DYEC expansion until the 2035 to 2040 timeframe. Consequently, the Region will need to secure EFW capacity from privately owned facilities to allow the Region to continue to maximize diversion from landfill beyond the expiration of the Covanta Niagara contract in September 2023. Various aspects of the proposed procurement strategy are discussed in the sections that follow.

3.1 New EFW Procurement Timing

Although the Region's existing contract with Covanta Niagara does not expire until September 2023, it is recommended that procurement of a replacement contract occur by Q4 2020. Issuing the procurement early provides prospective bidders with time to construct new capacity if needed, or to free existing capacity that is currently contracted to other clients.

3.2 New EFW Contract Procurement Structure

Although it is possible that the Region could receive bids from other facilities, the Covanta Niagara facility in Niagara Falls New York and the Emerald EFW facility in Brampton are the only existing merchant EFW facilities in the immediate area, and both are already under contract with the Region. It is likely that these facilities will be the only bidders.

Since both facilities are currently operating near full capacity, it is also possible that neither facility will be able to supply all of the capacity required to meet the Region's needs. To address this issue, the procurement should be structured as an RFP, with flexibility for Council to award part of the tonnage to multiple facilities if necessary. Bidders could be asked to submit a price and a maximum annual tonnage based on availability. The Region would award tonnage to any bidder up to the maximum quantity specified in their bid, subject to the requirement that the Region would also commit to a minimum annual tonnage not less than a specified percentage of the tonnage awarded. The Region would commit this tonnage to the facility for the entire period specified in the RFP. Structuring the procurement as an RFP also allows the Region to consider non-price factors such as greenhouse gas and other emissions, currency exchange, and border risks. Given the impact of facility location on transportation costs and emissions, the RFP will include both processing and transportation so all facilities are compared on an equal basis.

The current term of the Emerald EFW contract will expire at the same time as the Covanta Niagara contract in September 2023. Unlike the Covanta Niagara contract, the Emerald EFW contract has an option to extend for an additional 5-year term to September 2028 under the existing terms and conditions at the Region's sole discretion. The procurement approach outlined above would allow the Region to wait until after the procurement closes to decide whether to exercise the option to extend the existing Emerald EFW contract, and base that decision on pricing received from all bidders in the RFP.

3.3 New EFW Contract Term

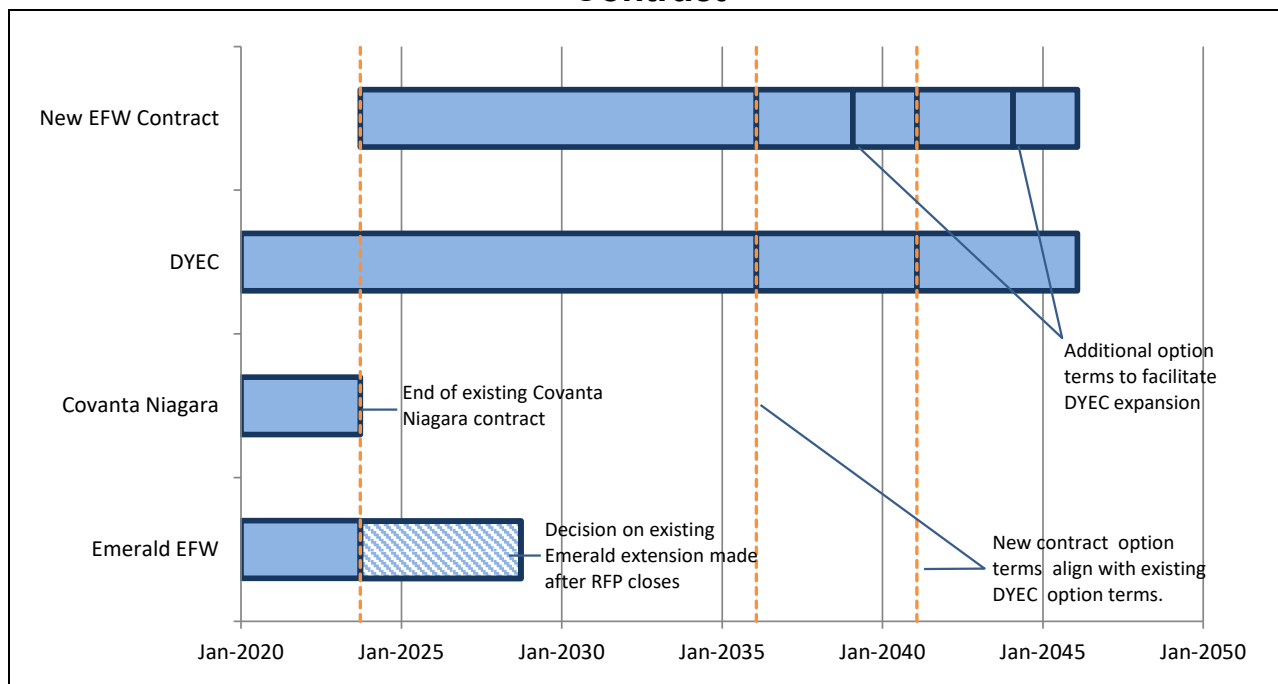
As highlighted in the Ontario Waste Management Association's *State of Waste In Ontario: Landfill Report, December 2018*, landfill capacity in Ontario is filling rapidly, and could be entirely depleted in as little as 8 to 12 years if new capacity is not added. It is anticipated that the diminishing supply of disposal capacity will result in significant pressure on all forms of waste disposal, including EFW. To make the Region's RFP attractive to bidders, the initial guaranteed contract term should be made as long as possible.

It is recommended that the initial term of the contract or contracts issued under the RFP commence on September 23, 2023 following expiration of the Covanta Niagara contract and expire on January 28, 2036 to coincide with the end of the initial 20-year term of the DYEC operations contract. This results in a guaranteed initial term of just over 12 years. In addition to coinciding with the end of the initial DYEC operating term, this end date aligns with the projected timeframe for DYEC expansion.

The DYEC Project Agreement does not specify a price or timing for facility expansion. Since facility expansion will require an amendment to the Project Agreement, the timing can be set by the Regions through negotiations, and does not necessarily need to coincide with the optional term extensions in the existing agreement.

The RFP will provide a series of short term optional extensions after the initial 12-year term to provide the Regions with flexibility in setting a start date. One of these short term extensions will coincide with the end of the first DYEC optional term extension in January 2041. The remaining RFP option terms will be spread over the 10-year period from January 2036 to January 2046 at intervals of 2 to 3 years. The recommended dates for the initial term and optional term extensions are summarized in Table 4.

**Table 4
Recommended Contract Term and Optional Extensions for New EFW Contract**

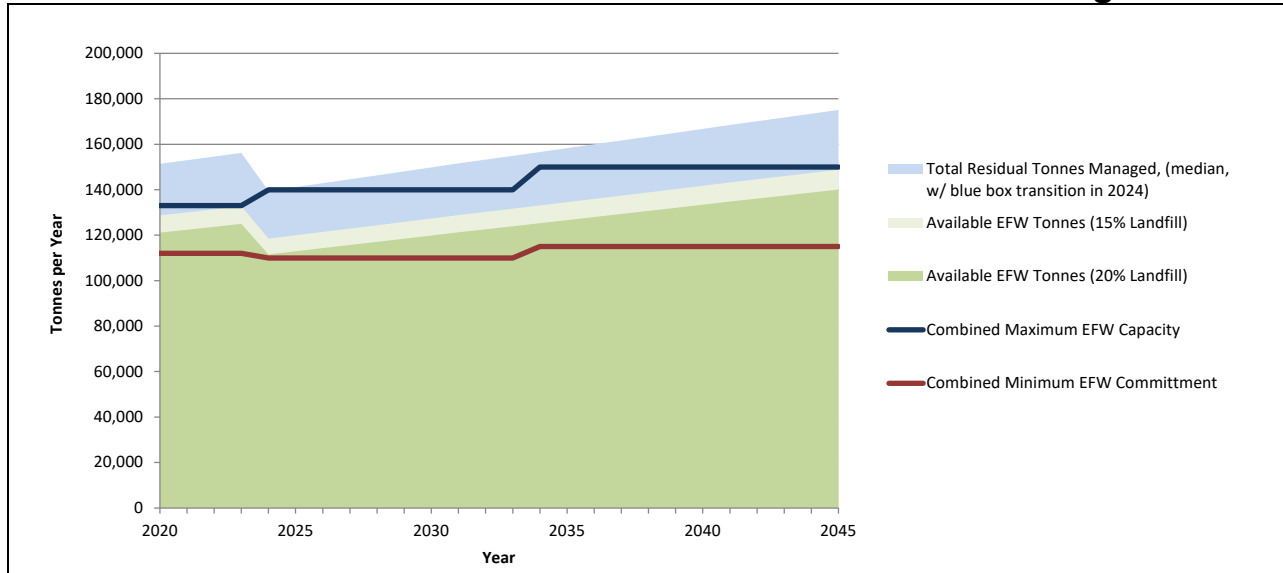


Contract	Start Date of First Term (or current term)	Expiry Date of First Term (or current term)	Option Term Expiry Dates
New EFW Contract(s)	September 2023	January 2036	January 2039, January 2041, January 2044, January 2046
DYEC	January 2016	January 2036	January 2041, January 2046
Covanta Niagara	September 2018	September 2023	N/A
Emerald EFW	September 2018	September 2023	September 2028

3.4 New EFW Contract Tonnage

Based on long term projections, staff estimate that sufficient tonnage will be available to commit 80,000 to 110,000 tonnes to a new EFW contract through 2033, increasing to 85,000 to 120,000 tonnes from 2034 through 2046. As illustrated in Table 5, there would be sufficient tonnage available to satisfy the minimum contractual commitments provided that landfilled tonnage does not exceed 20% of total residual. There would also be enough EFW capacity available to limit landfilling to 15% of total residual, or less.

**Table 5
Revised EFW Contract Minimum and Maximum Tonnages**



Time Period	Limit (tonnes)	New EFW Contract	DYEC	Covanta Niagara	Emerald	Total
2020 – 2023	Minimum		30,000	55,000	27,000	112,000
	Maximum		30,000	70,000	33,000	133,000
2024 – 2033	Minimum	80,000	30,000			110,000
	Maximum	110,000	30,000			140,000
2034 -- 2046	Minimum	85,000	30,000			115,000
	Maximum	120,000	30,000			150,000

Landfill disposal will only need to exceed 20% of total residual waste in years where there are excessively long EFW facility outages. EFW contracts will include minimum facility availability guarantees and provisions to reduce or waive the Region’s minimum annual tonnage commitment in circumstances where there are excessively long outage periods.

As noted in Section 1.3, the proposed DYEC processing rate increase to 160,000 tonnes per year will provide additional processing capacity to help ensure that waste will not be landfilled unnecessarily. This additional capacity is not included in Table 5 since it is subject to availability from year to year.

4.0 New Landfill Contract

The Region’s contract with Walker Environmental Services provides sufficient landfill disposal capacity to meet the Region’s needs until it expires in June 2025. The Region

needs to secure new landfill capacity beyond the expiration of the Walker Environmental contract for ongoing management of bulky wastes unsuitable for management at EFW facilities and provide alternate disposal capacity during EFW facility outages. Various aspects of the proposed procurement strategy for landfill capacity are discussed in the sections that follow.

4.1 New Landfill Procurement Timing

Although there are more than five years until the Region's contract with Walker Environmental expires, staff recommend that the new landfill contract be procured over the next year. Procuring early will help the Region to secure a share of the province's diminishing landfill capacity, and will provide bidders with more time to construct new capacity if needed, or to free existing capacity that is currently contracted to other clients. Staff recommend that the procurement be issued no later than Q1 2021.

4.2 New Landfill Procurement Structure

While landfill disposal capacity located in Ontario is preferable, staff recommend that the procurement be open to bidders from New York State. Staff recommend that transportation of waste to the landfill be included in the scope of work to ensure that these costs are reflected in the bid price.

Although landfill disposal is often viewed as a commodity, there are non-price factors that can affect the value of the service to the Region such as environmental compliance, carbon emissions reductions, and, in the case of New York bidders, currency and border risks. The procurement will be structured as an RFP so that all of these factors can be taken into consideration.

4.3 New Landfill Contract Term

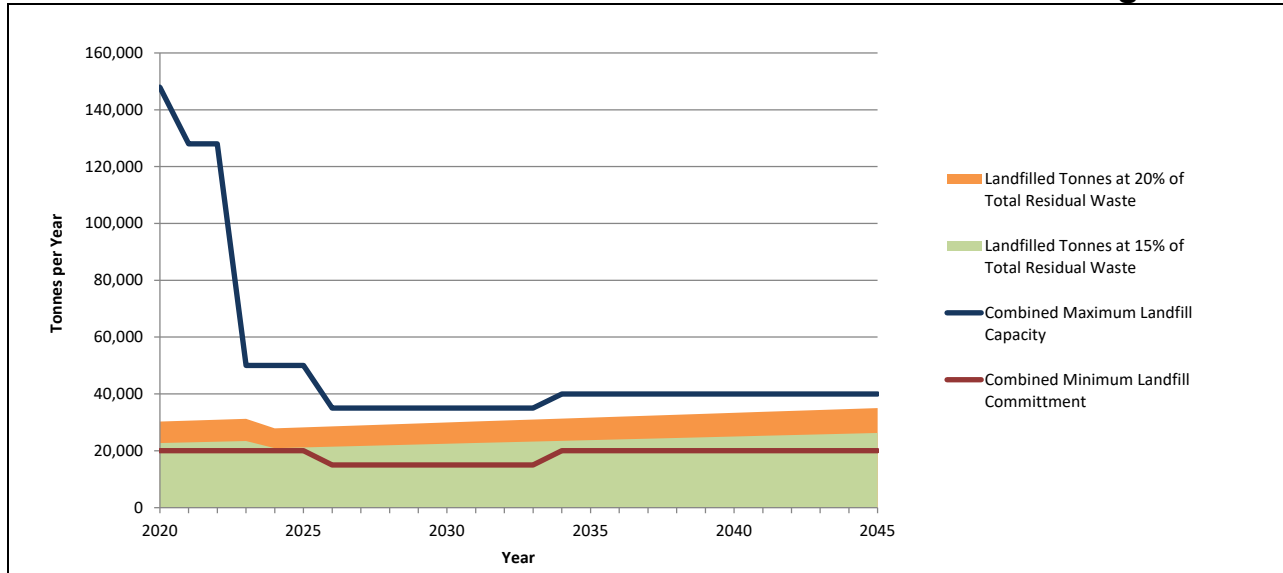
The Region should offer a long guaranteed contract term to make the RFP as attractive as possible to bidders in a tightening landfill capacity market. Staff recommend that the contract start in June 2025 at the conclusion of the existing Walker Environmental contract and extend to the end of the EFW contracts in January 2046, a total term of just over 20 years. It is recommended that the contract be offered as a single guaranteed term.

4.4 New Landfill Contract Tonnage

The Region's landfill disposal requirements typically range from 15 to 20% of total residual waste tonnes managed, which is sufficient to achieve 90 to 94 percent diversion from landfill. Based on long-term tonnage projections, staff estimate that there

will be sufficient tonnage available to commit 15,000 to 35,000 tonnes to the new landfill contract during the first 10 years of the contract, increasing to 20,000 to 40,000 tonnes for the remainder of the term, as illustrated in Table 6.

Table 6
Revised Landfill Minimum and Maximum Contract Tonnages



Time Period	Limit (tonnes)	New Landfill Contract	Walker Environmental	Twin Creeks	Green Lane	Total
2020	Minimum		20,000	0	0	20,000
	Maximum		50,000	20,000	78,000	148,000
2021 – 2022	Minimum		20,000		0	20,000
	Maximum		50,000		78,000	128,000
2023 -- 2025	Minimum		20,000			20,000
	Maximum		50,000			50,000
2026 --2035	Minimum	15,000				15,000
	Maximum	35,000				35,000
2036 – 2046	Minimum	20,000				20,000
	Maximum	40,000				40,000

The proposed minimum commitments can be satisfied with less than 15% of projected total residual waste, while the proposed maximum tonnages provide enough capacity to manage over 20% of projected total residual waste throughout the term of the contract to allow for contingency landfill disposal in the event of a prolonged EFW facility outage. Securing this landfill capacity will provide the Region with a long term solution for non-processable waste while still allowing the Region to meet its diversion-from-landfill goals and maximize processing at EFW facilities.

5.0 Conclusions and Recommendations

5.1 Conclusions

- Securing long-term EFW capacity is a key step toward maintaining York Region's current position as a leader in sustainable waste management and continuing to reach its established target of 90% diversion from landfill.
- Despite its firm commitment to prioritizing energy recovery over landfill disposal, the Region also requires sufficient landfill disposal capacity to manage wastes that cannot be managed at EFW facilities, which typically comprise 15 to 20% of the Region's waste stream.
- The Region will continue to meet or exceed its 90% diversion from landfill target provided that landfill disposal does not exceed 20% of the total residual waste stream.
- All of the Region's contracts with privately-owned EFW and landfill facilities expire between 2020 and 2028, creating an immediate need for new EFW and landfill capacity to ensure continued, sustainable management of the Region's residual waste stream.
- The Durham York Energy Centre (DYEC) is designed to be readily expandable from its current capacity of 140,000 tonnes per year to an expanded capacity of 250,000 to 270,000 tonnes per year. This 110,000 to 130,000 tonne capacity increase is considered to be the minimum increment required to achieve reasonable economies of scale on the expansion capital.
- Long-term residual waste tonnage projections for York Region and Durham Region indicate that there will not be sufficient tonnage to expand the DYEC facility until the 2035 to 2040 timeframe, which is consistent with timing of the project in York Region's long term capital plan. In the interim, the Regions are seeking to amend the facility's permits to allow for processing of up to 160,000 tonnes per year using the existing infrastructure.
- The Region requires a contract with one or more privately owned EFW facilities to serve as an interim bridge from expiration of its current contracts in September 2023 until physical expansion of the DYEC becomes a viable alternative.
- The Region also requires a long term landfill contract to secure disposal capacity beyond the end of its current contracts in June 2025.
- EFW and landfill contracts will be procured within the next year to allow bidders to construct new capacity if needed, or to free existing capacity that is currently contracted to other clients.
- Early procurement will help to secure capacity in an increasingly tight market with a diminishing supply of available capacity.

5.2 Recommendations

- Staff recommend that the Region issue an RFP in Q4 2020 to secure up to 120,000 tonnes of annual EFW processing capacity from one or more privately owned facilities from September 23, 2023 through January 2046 to serve as an interim bridge until such time as the Region has enough tonnage to undertake expansion of the Durham York Energy Centre (DYEC)
- The new EFW contract should be structured to include an initial term of approximately 12 years to align with the end of the initial term of the DYEC operating contract. This initial term would be followed by an additional 10 years of optional term extensions of two to three years each to provide the Region with flexibility to set a start date for DYEC expansion.
- An RFP should be issued no later than Q1 2021 to secure up to 40,000 tonnes of landfill capacity to manage waste received during EFW facility outages and bulky materials that are not suitable for EFW. The new landfill contract would begin at the end of the Region’s existing landfill contracts in June 2025 and extend through January 28, 2046 to coincide with the end date of the EFW contracts.
- The scope of work for the EFW and landfill capacity procurements should include transportation of waste to the receiving facilities to ensure that the total cost of managing waste at each facility is reflected in the bid prices.
- EFW and landfill capacity procurements should be open to bidders from the United States.
- The EFW and landfill capacity procurements should be structured as RFPs so the Region can give consideration to non-price factors such as environmental performance history, carbon emissions reductions, currency, and border risks.

5.3 Implementation Schedule

Subject to Council approval, the proposed implementation schedule for these recommendations is summarized in Table 7.

**Table 7
Proposed Implementation Schedule**

Task	Start Date	End Date
RFP for EFW Contracts		
Prepare EFW RFP Documents	April 1, 2020	September 30, 2020
EFW RFP Bid Submission Period	October 1, 2020	March 31, 2021

Bid Review, Council Approval, and Award	April 1, 2021	June 30, 2021
Service Commencement	September 23, 20203	
RFP for Landfill Capacity		
Prepare Landfill Capacity RFP Documents	October 1, 2020	January 31, 2021
Landfill RFP Bid Submission Period	February 1, 2021	July 31, 2021
Bid Review, Council Approval, and Award	August 1, 2021	November 30, 2021
Service Commencement	June 28, 2025	