

# **The Regional Municipality of York**

Committee of the Whole  
Environmental Services  
April 16, 2020

Report of the Commissioner of Environmental Services

## **Five Year Review of the SM4RT Living Waste Management Master Plan**

### **1. Recommendations**

1. Council approve the updated SM4RT Living Waste Management Master Plan objectives and action areas for the next five years, including establishment of the Circular Economy Initiatives Fund under the existing SM4RT Living Plan budget.
2. The Regional Clerk circulates this report to all local municipal councils, Director of Resource Recovery Policy Branch from the Ministry of the Environment, Conservation and Parks and the Association of Municipalities of Ontario.

### **2. Summary**

The SM4RT Living Waste Management Master Plan (the Plan) was approved in September 2013. The Plan included an update cycle of about once every five years to check progress, evaluate successes and lessons learned to refine future approaches. Outcomes of this update are summarized for the next five year period. The Plan including summary appendices (Attachment 1) is organized under three objectives. The full plan including all detailed appendices can be viewed at [york.ca/sm4rtliving](http://york.ca/sm4rtliving).

Key Points:

**The Plan has three objectives as follows:**

- Successfully navigate legislative changes
- Use resources and infrastructure more strategically to achieve SM4RT Living
- Inspire people across the Region to embrace SM4RT Living and advance the circular economy

### **3. Background**

York Region is a leader in waste diversion. [As reported in 2019](#), the Region has achieved the highest diversion rate for a large urban municipality in the Resource Recovery and Productivity Authority data call every year since 2012. Starting in 2016, the Region has

surpassed the Region Official Plan target with over 90% of managed waste diverted from landfill.

The [SM4RT Living Plan](#) established the business case for expanding the focus of policy and programming, from diversion to waste reduction. York Region was the first Ontario municipality to move in this direction; in the last five years, more communities including the City of Toronto and Peel Region have followed suit and the province is also making this shift. In the first five years 32 priority initiatives aligned with the 4 R's (Reduce, Reuse, Recycle and Recover) were explored as outlined in the [Balanced Scorecard](#).

### **Update examined lessons learned, emerging issues, and community needs**

The Plan update included a review of lessons learned and current issues in the following areas:

- Expanding and refining successful programs
- Building partnerships to deliver programs efficiently
- Preparing infrastructure and contracts for the Region's changing needs
- Promising practices to improve performance in the multi-residential sector
- Reducing impacts of single-use plastics
- Community readiness and interest in SM4RT Living actions
- Opportunities to support the circular economy in York Region

## **4. Analysis**

### **Local feedback and global trends influenced SM4RT Living priorities**

Local municipal partners have helped implement the SM4RT Living Plan through pilot initiatives such as textile collection, repair cafés and curbside giveaway days. During the update process, their experiences helped to shape objectives for the next five years. Global scans on current waste challenges and innovations also informed the path forward. As outlined in section four of Attachment 1, a revised visionary goal and mission were developed. Priorities are organized into three objectives with key actions which are summarized below.

### **OBJECTIVE ONE identifies Blue Box legislative changes as the biggest near term priority for local and Regional staff**

[As reported in 2019](#), the province released timelines for transitioning the Blue Box Program to full producer responsibility. Figure 1 shows how the next six years will be crucial to planning and executing a smooth transition to full producer responsibility and setting up the new system.

**Figure 1**  
**Provincial timeline for Blue Box Transition**



Key action areas in Objective 1 include collaborative decision-making, and compliance with changing legislation. Collaboration at the local and Regional levels will help identify potential impacts of transition on the Region’s integrated waste management system and prepare Council to make informed decisions as the process moves forward.

During the lead up to transition, the Region and local municipalities will continue to manage the current system, working to significantly reduce contamination in the Blue Box.

## **OBJECTIVE TWO supports continuous improvement of the waste system**

As the Region’s communities evolve and new technologies arise, the plan recommends a number of areas to monitor or implement innovations to improve waste management system efficiency. The Region and local municipalities will continue to share tools and lessons learned to expand successful initiatives. Greater emphasis will be placed on curbside enforcement techniques, consistent messaging around the Blue Box program and improving diversion in multi-residential buildings.

### **Shifting organics processing contracts to anaerobic digestion facilities reduces greenhouse gas emissions while maintaining cost efficiency**

Objective two also addresses finding a sustainable, cost effective approach to securing organics and residual waste processing capacity. Development of the Plan included a strategic review of long-term processing options for source separated organic waste (SSO) from the Region’s green bin program. Earlier work identified anaerobic digestion as a preferred technology over aerobic composting. The [Long Term SSO Processing Plan](#) looked at the cost/benefit analysis of a range of location and ownership options for anaerobic digestion facilities. This analysis showed that private facilities can provide the same environmental benefits as a Regionally owned facility at reduced lifecycle costs. Based on these findings, the Region will issue a request for proposals in Q4 2020 to provide anaerobic digestion capacity for processing the Region’s SSO at privately owned facilities.

The request for proposals will include transportation and anaerobic digestion processing for a period of 20 years currently projected to commence in 2024 (see Table 1 for contract structure).

**Table 1**  
**Proposed Organics Contracts**

| Contract         | Maximum Annual Tonnage | Earliest Start date | Latest Start date | Initial Term and Optional Terms                           |
|------------------|------------------------|---------------------|-------------------|---|
| Contract 1 and 2 | 2x 70,000              | June 2022           | July 2024         | 20 year initial term plus two five year extension options |
| <b>Total</b>     | <b>140,000</b>         |                     |                   |   |

To provide operational flexibility and system redundancy, two different vendors will be awarded the annual tonnage in blocks of 50,000 to 70,000 tonnes each. Request for proposal scoring will give consideration to greenhouse gas emissions from all phases of service delivery, which will favour facilities located within or close to York Region.

A flexible start date and 20 year contract term allows vendors sufficient time to construct a new facility if required, and recover their initial investment in facility capital through processing fees. Processing facilities will be constructed on sites selected and owned by the contractor and located within 200 kilometres of York Region.

The current 10 year capital plan includes \$100 million from 2025 through 2028 for a Regionally owned facility. These funds will be maintained in the outer years of the long-term capital plan as a risk management measure. If the go-to-market strategy is successful, once the new anaerobic digestion contracts are in place and operating the need for these funds will be re-evaluated through annual budget processes.

### **Residual Waste Processing Plan maintains 90% diversion from landfill**

In 2016, the Region first exceeded its Official Plan goal by diverting 91% from landfill; through incremental gains each year a 94% rate was achieved in 2019. This goal is reached 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) as it relates to energy recovery, only for those materials that cannot be managed by other means. The Region manages residual waste through our co-owned Durham York Energy Centre (DYEC) located in Clarington, Ontario and external energy-from-waste (EFW) contracts with the Covanta Niagara facility in Niagara Falls, New York and the Emerald EFW facility in Brampton, Ontario.

As part of the review and update staff analyzed residual waste processing needs and long-term EFW contracted and DYEC incineration capacity (Attachment 1: Appendix F). Alternative methods of securing long-term processing capacity were considered to ensure the Region will continue meeting the 90% diversion target.

## DYEC expansion could require over ten years to implement

DYEC expansion is expected to be a lengthy process requiring approvals under the *Environmental Assessment Act* and the *Environmental Protection Act*. As summarized in Table 2, DYEC expansion could require over ten years to implement.

**Table 2**  
**DYEC Expansion Timeline**

| Task                           | Estimated Time Required<br>(Years) |
|--------------------------------|------------------------------------|
| Approvals and Permits          | 3 – 5                              |
| Facility Design                | 2 – 3                              |
| Construction and Commissioning | 3 – 4                              |
| <b>Total Time Required</b>     | <b>8 – 12</b>                      |

The Region's contract with Covanta Niagara, as well as the initial term of the Emerald EFW contract, expires in September 2023, which creates a need for additional capacity in less than four years. The Region will need to secure additional contract capacity up to 120,000 tonnes per year to serve as an interim bridge until the DYEC expansion can be implemented. The current approved capacity of the DYEC is 140,000 tonnes per year.

## Residual Waste tonnage suitable for EFW may change with Blue Box Transition in coming years

EFW facilities are designed to operate at or near full capacity to maximize electrical generation efficiency and economies of scale. The DYEC was designed for future expansion to an annual processing rate of 250,000 to 270,000 tonnes per year to accommodate tonnage growth.

In 2019, Durham Region and York Region managed a combined 272,580 tonnes of residual waste. Approximately 10% to 20% is either unsuitable for processing or bypasses the facility during maintenance outages, leaving 218,000 to 245,000 tonnes available annually. In York Region, transition of the blue box program is forecasted to reduce residual waste quantities by 18,000 tonnes per year when responsibility for managing non-recyclable residue in the blue box stream transitions to producers. The impact of blue box transition on residual waste tonnages required to support DYEC facility expansion will be assessed over the near to medium term.

## **Contracted EFW capacity acts as an interim bridge until DYEC expansion is implemented**

York Region will issue a request for proposals in Q4 2020 to secure up to 120,000 tonnes of annual EFW processing capacity from one or more privately owned facilities. This will provide uninterrupted service after the Covanta Niagara contract expires in September 2023. Results of the request for proposals will help inform a business case decision on whether to activate the optional term extension of the Emerald EFW contract. The new contracted capacity will serve as an interim bridge until York Region and Durham Region have enough time and residual waste tonnage to implement expansion of the Durham York Energy Centre to 250,000 to 270,000 tonnes per year. The request for proposals for EFW capacity will be structured with optional term extensions as shown in Table 3. This strategy will provide flexibility on the implementation plan and timing for the expanded DYEC facility.

**Table 3**  
**Proposed Residual Waste Contracts**

| <b>Contract(s)</b>          | <b>Maximum Annual Tonnage</b> | <b>Start date</b> | <b>Expiry Date of Current or Initial Term</b> | <b>Option Term Expiry Dates</b>              |
|-----------------------------|-------------------------------|-------------------|---|--|
| Private sector EFW facility | 120,000                       | Sept 2023         | Jan 2036                                      | Jan 2039<br>Jan 2041<br>Jan 2044<br>Jan 2046 |
| DYEC                        | 30,000                        | Jan 2016          | Jan 2036                                      | Jan 2041<br>Jan 2046                         |
| Landfill                    | 40,000                        | June 2025         | Jan 2046                                      |  |
| <b>Total</b>                | <b>190,000</b>                |                   |   |  |

An additional request for proposals will be issued in 2021 to secure up to 40,000 tonnes of landfill capacity to manage materials not suitable for EFW and provide disposal during maintenance outages. This contract would extend from the end of the existing landfill contract with Walker Environmental in June 2025 through to the end of the new EFW contracts.

## **OBJECTIVE THREE recognizes grassroots support is needed to drive change**

The Plan recognizes that successful social and environmental change requires support from many players. Attachment 1 outlines some of the many success stories of community champions who are leading the way in transforming their services to adopt waste prevention principles. Action areas under Objective three spark change across the Region through leadership, support for community-led action and advocacy to other levels of government.

## **Circular Economy Initiatives Fund provides a simple process to support community partners**

A key action area under Objective three is establishing a program that will provide funding to support programs within York Region that align with SM4RT Living. This Circular Economy Initiatives Fund will be allotted based on established criteria to support areas of waste prevention, reduction, reuse, repair and recycling. Existing funding from the Region's SM4RT Living budget would be repurposed for the fund, starting at \$100,000 per year. The fund will be launched in Q4 2020, towards projects starting in 2021.

## **Region and local municipalities must show leadership on single-use packaging**

The issue of single-use packaging and its impact on the environment and the waste system was explored through this review and update. Council and residents expressed a desire to take action in reducing the prevalence of these products in York Region communities. The provincial government is looking at potential bans of problematic items such as straws, plastic bags, plastic cutlery and polystyrene containers. The federal government recently announced it is considering a ban on some single-use items starting as early as 2021. Many businesses and individuals are taking voluntary action (see Attachment 1).

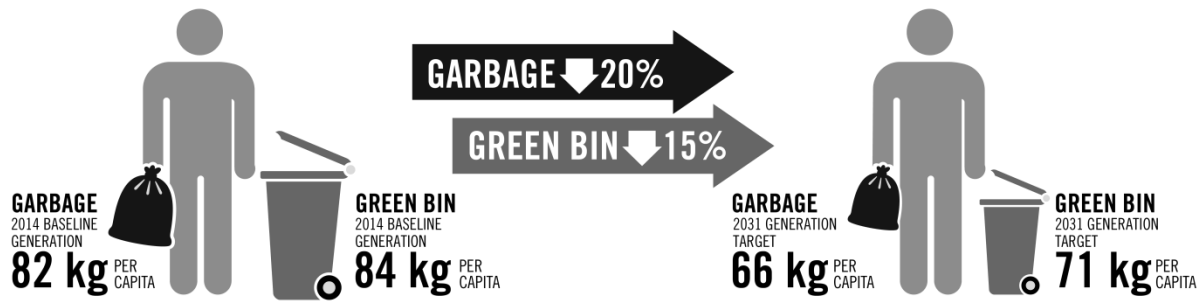
The Plan recommends several steps to implement change including a Region-wide 'ask-first' voluntary program to encourage businesses to change their practices so that disposable items such as straws and cutlery are only included upon request, not with every transaction. The Region and local municipalities would also work to eliminate single-use items at Regional facilities and events as much as possible. This will require strong leadership from local and Regional councils and support from internal departments and staff to be successful.

## **New aspirational targets align with action areas and facilitate progress tracking**

The original SM4RT Living Plan included a 2031 waste generation target of 289 kg/capita. Over the first five years of implementation, we saw an overall decline in the waste generation rate from 328 kg/capita in 2014 to 299 kg/capita in 2018.

This original target combined data from multiple streams and sources into one metric, making it challenging to interpret trends in waste generation. To improve the decision-making value of this important metric, a new approach to tracking waste generation is proposed. Figure 2 shows the proposed 2031 aspirational targets for residential curbside green bin and garbage.

**Figure 2**  
**SM4RT Living Aspirational Targets**



These new targets will be tracked using York Region scale data and align with messaging to reduce food waste and single-use packaging, and reuse/donate durable goods. The targets will assist with tracking the success of these efforts. They will also support tracking of changes in the garbage and green bin stream that may occur as the Blue Box shifts to full producer responsibility.

At the time this report was written implications of Covid-19 on the waste sector and waste generation rates in all streams were uncertain and will need to be re-assessed at a future date.

## 5. Financial

The Plan prioritizes the need to support future growth efficiently by maximizing the value of current infrastructure. The cost for delivering all waste management services in York Region, including the Plan, curbside collection, processing, depot operations and education services is about \$300/household per year. This represents great value provided to residents for less than \$1 per day, substantially less than comparable utilities such as energy and natural gas.

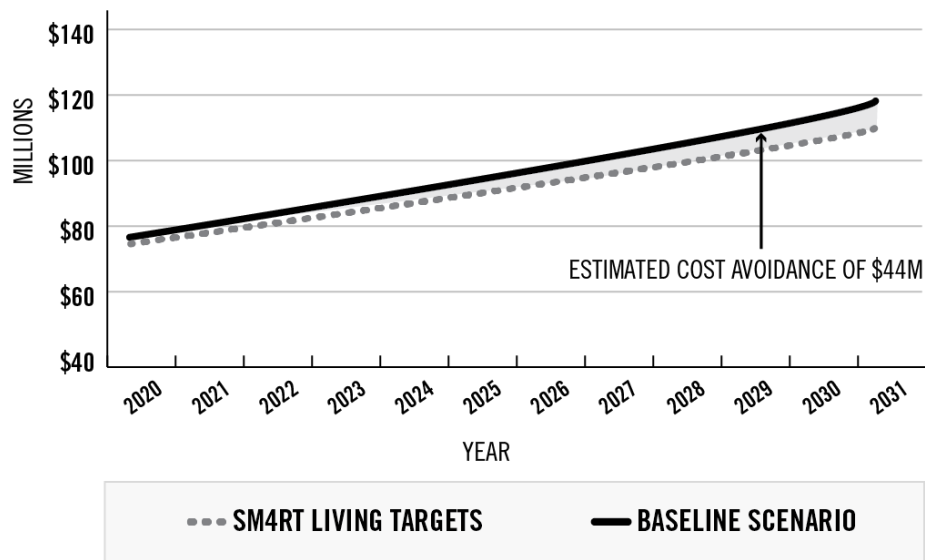
### First five years of the Plan approaching cost neutral return on investment

Over the last five years, staff maintained spending within the Council approved master plan implementation budget, while achieving reductions in waste generation rates. Implementation of the SM4RT Living Plan is approaching cost neutrality, as avoided collection and processing costs resulting from reduced per capita waste generation are offsetting the budget for implementing the Plan.

Figure 3 shows the continuing potential for cost avoidance by reducing waste in both garbage and green bin streams. The shaded area represents an estimated \$44 million in cost avoidance from achieving SM4RT Living targets. The projection compares annual gross costs under two scenarios: a baseline where green bin and garbage generation per capita continues unchanged at the 2014 rate and a SM4RT Living scenario that considers the lower costs related to achieving the two new aspirational targets.



**Figure 3**  
**Forecasted Cost Avoidance by Achieving SM4RT Living Targets**



Transition of the blue box to full producer responsibility will require high targets and enforcement to ensure designated paper and packaging are captured and that associated financial costs shift from the taxpayer to producers. Otherwise, leakage of designated materials into the green bin and garbage streams could impact the projected cost avoidance of \$44 million identified in Figure 3. The impacts of Covid-19 on the projected cost avoidance will need to be assessed once the situation resolves.

## 6. Local Impact

### Local municipalities and community help to shape the recommendations

As outlined in Attachment 1 page 9, the review process was carried out in close collaboration with local municipal partners and informed by consultation with community partners and residents. Local municipal staff indicated a desire to focus on some key areas of the plan, including: multi-residential servicing and performance, curbside enforcement and education, and special events such as e-waste collection, textiles and curbside giveaway days.

Effective collaboration between the Region and its local municipal partners was crucial in this update process. The Region thanks all those who contributed and looks forward to continuing to build these critical relationships over the next five years.

## 7. Conclusion

The update to the Plan refocused priorities for the next five years and established an aspirational vision and long-term targets to move towards a world without waste. Implementation of the action areas will begin in 2020 with annual reports on progress provided to Council. The next review of the plan is scheduled for 2025.

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For more information on this report, please contact Laura McDowell, Director, Environmental Protection and Promotion at 1-877-464-9675 ext.75077. Accessible formats or communication supports are available upon request.

Recommended by: **Erin Mahoney, M. Eng.**  
Commissioner of Environmental Services

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Chief Administrative Officer

April 2, 2020  
Attachments (1)  
eDOCS #10227765