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**Item No. 13.1.1**  
**Environment and Sustainability Standing Committee**  
**June 13, 2024**

**TO:** Chair and Members of Environment and Sustainability Standing Committee

**SUBMITTED BY:** **-ORIGINAL SIGNED-**

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Cathie O'Toole, Chief Administrative Officer

**DATE:** May 6, 2024

**SUBJECT:** **Solid Waste Strategy Review - UPDATE**

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**ORIGIN**

February 7, 2023 Halifax Regional Council motion (Item No. 15.1.3):

MOVED by Councillor Blackburn, seconded by Councillor Russell

Approve the terms of reference for reviewing and updating the municipality's Solid Waste Strategy in accordance with the Key Themes outlined in this report.

MOTION PUT AND PASSED

As part of the approved motion, Staff are providing an interim update per Task 3 – Update Regional Council.

**LEGISLATIVE AUTHORITY**

***Administrative Order Number One, the Procedures of the Council Administrative Order.***

**Schedule 5 - Environment And Sustainability Standing Committee - Terms Of Reference**

Solid Waste Resource Management

3. The Environment and Sustainability Standing Committee shall:

(a) advise the Council on matters respecting solid waste management, including the responsibility to receive reports and to keep the Council informed respecting all matters related to the solid waste management program in the municipality; and ...

***Halifax Regional Municipality Charter, SNS 2008, c. 39***

**By-law regarding solid waste**

**335** The Council may make by-laws respecting solid waste, including, but not limited to, ... (j) respecting anything required to implement the integrated solid-waste resource management strategy of the Municipality.

**RECOMMENDATION ON PAGE 2**

## **RECOMMENDATION**

It is recommended that the Environment and Sustainability Standing Committee (ESSC) recommend that Halifax Regional Council:

1. Approve the next phase of reviewing and updating the municipality's Solid Waste Strategy in accordance with the tasks and action items outlined in the Next Steps section of this report.

## **EXECUTIVE SUMMARY**

On February 7, 2023, Regional Council approved the Terms of Reference for HRM's Solid Waste Strategy Review<sup>1</sup>.

The development of the New Strategy commenced in February 2023, and it is envisioned that it will take approximately two years to complete. The table below provides an overview of the schedule to complete the New Strategy.

**Table E.1 – New Strategy Schedule**

<b>Task</b>	<b>Deadline</b>
Task 1 – Phase 1 Public Consultation	November 30, 2023
Task 2 – Key Themes/Technical Studies	March 31, 2024
Task 3 – Update ESSC/Regional Council	May-June 2024
Task 4 – Phase 2 Public Consultation	December 31, 2024
Task 5 – Phase 2 Assessments	December 31, 2024
Task 6 – Present Final Report to ESSC/Regional Council	Jan-March, 2025

Dillon Consulting (Dillon) was retained to provide consulting services in relation to Public Consultation (Task 1), as well as developing reports associated with Key Themes/Technical Studies (Task 2). Dillon's reports are publicly available on the New Strategy website:

[www.shapeyourcityhalifax.ca/solid-waste-strategy-review](http://www.shapeyourcityhalifax.ca/solid-waste-strategy-review)

Key Themes to be reviewed as part of developing the New Strategy included:

1. Reviewing the impact of Provincial Extended Producer Responsibility (EPR) Legislation.
2. Contributing towards the Province of Nova Scotia's objective outlined in the 2022 Environmental Goals and Climate Change Reduction Act by reducing HRM's disposal rate per capita from 383 kg per capita to 300 kg per capita by 2030.
3. Aligning HRM's Solid Waste System with HalifACT.
4. Promoting the circular economy.
5. Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.
6. Evaluating expanding the household special waste (HSW) program.
7. Evaluating expanding the new composting facility.
8. Evaluating expanding the Rural Refuse Depot operation.
9. Other items related to benchmarking, waste audits, and modernizing the Solid Waste Resource Collection and Disposal By-Law S-600.

The following memos and reports have been prepared by Dillon and are available on the New Strategy website:

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<sup>1</sup> [Halifax Regional Council Staff Report. Terms of Reference for HRM's Solid Waste Strategy Review. February 7, 2023.](#)

- Phase 1 Consultation Survey Results
- Extended Producer Responsibility (EPR) Jurisdictional Review
- Benchmarking
- Institutional, Commercial, & Industrial (IC&I) and Multi-Residential Properties Best Practices
- Organic Waste Audit
- Material Recovery Facility and Household Special Waste Depot Assessment
- Repurposing Burnside Composting Facility Assessment
- Solar Farm Assessment at Ragged Lake Composting Facility
- Cart Based Collection Assessment
- Sheet Harbour Rural Refuse Depot Facility Assessment

The purpose of this staff report is to provide an update (Task 3) with respect to work completed to date, specifically Public Consultation (Task 1) and Key Themes/Technical Studies (Task 2). Additionally, the purpose is to gain feedback and approval from ESSC/Regional Council with respect to the future direction and tasks for the development of the New Strategy.

This report summarizes key findings and next steps that are further described in detail in Attachment A (Phase 1 Update Report for the New Strategy).

## **BACKGROUND**

On February 7, 2023, Regional Council approved the Terms of Reference for HRM's Solid Waste Strategy Review<sup>2</sup>.

The current objectives of the solid waste system are to:

- Maximize reduction, reuse, and recycling of waste resources.
- Maximize environmental and fiscal sustainability of the waste program.
- Foster public stewardship and conservation.

It is proposed for the current strategic update of HRM's solid waste system (New Strategy), that the following objectives are added:

- Align HRM's Solid Waste System with HalifACT, including making significant contributions towards:
  - Net-zero corporate emissions by 2030
  - 75% reduction in community emissions by 2030 as compared to 2016 baseline
  - Net-zero community emissions by 2050
  - Reducing waste generation by 30% by 2050 as compared to 2016 baseline
- Contribute towards meeting the following objective outlined in the Province of Nova Scotia's 2022 Environmental Goals and Climate Change Reduction Act:
  - Reduce Nova Scotia's disposal rate from 402 kg per capita to 300 kg per capita by 2030. In 2022/2023 HRM's disposal rate was 383 kg per capita.

The development of the New Strategy commenced in February 2023, and it is envisioned that it will take approximately two years to complete. The table below provides an overview of the schedule to complete the New Strategy.

**Table 1 – New Strategy Schedule**

<b>Task</b>	<b>Deadline</b>
Task 1 – Phase 1 Public Consultation	November 30, 2023
Task 2 – Key Themes/Technical Studies	March 31, 2024

<sup>2</sup> [Halifax Regional Council Staff Report. Terms of Reference for HRM's Solid Waste Strategy Review. February 7, 2023.](#)

Task	Deadline
Task 3 – Update ESSC/Regional Council	May-June 2024
Task 4 – Phase 2 Public Consultation	December 31, 2024
Task 5 – Phase 2 Assessments	December 31, 2024
Task 6 – Present Final Report to ESSC/Regional Council	Jan-March, 2025

The purpose of this staff report is to provide an update (Task 3) with respect to work completed to date, specifically Public Consultation (Task 1) and Key Themes/Technical Studies (Task 2). Additionally, the purpose is to gain feedback and approval from ESSC/Regional Council with respect to the future direction and tasks for the development of the New Strategy.

It is also noted that HRM has received \$306,000<sup>3</sup> in funding from the Sustainable Communities Challenge Fund. The fund is a grant program for local action on climate change in Nova Scotia. It supports community efforts to reduce or remove greenhouse gas emissions, or to prepare for and respond to the impacts of a changing climate.

## **DISCUSSION**

Attachment A consists of a Phase 1 Update Report for the New Strategy and provides a comprehensive summary of work complete to date and detailed descriptions of next steps.

Dillon Consulting (Dillon) was retained to provide consulting services in relation to Public Consultation (Task 1), as well as developing reports associated with Key Themes/Technical Studies (Task 2). Dillon's reports are publicly available on the New Strategy website:

[www.shapeyourcityhalifax.ca/solid-waste-strategy-review](http://www.shapeyourcityhalifax.ca/solid-waste-strategy-review)

An internal steering committee was established to review Key Themes/Technical Studies as part of developing the New Strategy. The steering committee was engaged three times to date, in addition to breakout discussions, and includes representatives from:

- Government Relations and External Affairs
- Environment and Climate Change
- Corporate Real Estate
- Finance & Asset Management
- Planning and Development
- Halifax Water

Additionally, representatives from Diversity & Inclusion were recently added to the steering committee.

### **Task 1 – Phase 1 Public Consultation**

The purpose of Phase 1 Public Consultation was to gain initial public input to inform development of the New Strategy. There were 1,638 responses to the survey, which was available from September 25 to November 27, 2023. Survey respondents strongly supported<sup>4</sup> the existing and proposed objectives of the New Strategy, including alignment with HalifACT and reducing greenhouse gas emissions. Initiatives that promote waste reduction and reuse ranked as the highest priority, followed by environmental sustainability. Additionally, there was general satisfaction<sup>5</sup> with HRM Solid Waste programs. A copy of the *Phase 1 Consultation Survey Results* is available on the New Strategy website.

### **Task 2 – Key Themes – Technical Studies**

<sup>3</sup> The original budget for the work planned to date was estimated at \$511,000.

<sup>4</sup> 71-93% of responses related to the New Strategy and objectives ranked as 'important' or 'very important'.

<sup>5</sup> 68-81% of responses related to curbside collection programs ranked 'satisfied' or 'very satisfied'.

Key Themes to be reviewed as part of developing the New Strategy included:

1. Reviewing the impact of Provincial Extended Producer Responsibility (EPR) Legislation.
2. Contributing towards the Province of Nova Scotia's objective outlined in the 2022 Environmental Goals and Climate Change Reduction Act by reducing HRM's disposal rate from 383 kg per capita to 300 kg per capita by 2030.
3. Aligning HRM's Solid Waste System with HalifACT.
4. Promoting the circular economy.
5. Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.
6. Evaluating expanding the household special waste (HSW) program.
7. Evaluating expanding the new composting facility.
8. Evaluating expanding the Rural Refuse Depot operation.
9. Other items related to benchmarking, waste audits, and modernizing the Solid Waste Resource Collection and Disposal By-Law S-600.

The following memos and reports have been prepared by Dillon and are available on the New Strategy website:

- Extended Producer Responsibility (EPR) Jurisdictional Review
- Benchmarking
- Institutional, Commercial, & Industrial (IC&I) and Multi-Residential Properties Best Practices
- Organic Waste Audit
- Material Recovery Facility and Household Special Waste Depot Assessment
- Repurposing Burnside Composting Facility Assessment
- Solar Farm Assessment at Ragged Lake Composting Facility
- Cart Based Collection Assessment
- Sheet Harbour Rural Refuse Depot Facility Assessment

### **Key Theme 1 – Reviewing the impact of Provincial Extended Producer Responsibility (EPR) Legislation.**

EPR legislation was announced on August 2, 2023, in Nova Scotia. Producers will be responsible to collect and process recyclables from residential dwellings and other eligible premises by December 1, 2025. Regional Council approved the municipality registering into the program on December 12, 2023. As part of the report<sup>6</sup> to Regional Council, staff outlined key timelines, considerations, and next steps.

Based on the jurisdictional scan completed, it is possible that the municipality will continue providing residential curbside collection services on behalf of producers both in the short and long term, pending successful commercial negotiations. It is noted that inadequate cost recovery was one of the reasons that municipalities cited in deciding to discontinue providing residential collection services.

It is possible that HRM continues to operate the MRF in the short term (~ 2-4 years) to support the initial transition to the EPR program. It appears less likely that the municipality would continue to operate the Material Recovery Facility (MRF) long term as it is more likely that private sector service providers are better positioned to provide this service on behalf of producers. Additionally, it is possible that there will be interest in leasing or purchasing HRM's MRF which is a useful asset and in good condition.

Staff will work to support the transition to the EPR program, including related to service delivery and negotiations with producers, per the December 12, 2023 staff report and subject to the business planning/budget process.

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<sup>6</sup> [Halifax Regional Council Staff Report. EPR Municipal Registration. December 12, 2023.](#)

**Key Theme 2 – Contributing towards the Province of Nova Scotia’s objective outlined in the 2022 Environmental Goals and Climate Change Reduction Act by reducing HRM’s disposal rate per capita from 383 kg per capita to 300 kg per capita by 2030.**

A key area of focus is the IC&I sector<sup>7</sup>, including multi-residential properties, given that it accounts for approximately 72% of waste disposal. Key opportunities identified to reduce waste disposal included ensuring developers are aware of waste requirements and to provide advice/guidance on placement and space for bins. Additionally, implementing a mandatory clear bag program for the IC&I sector will reduce waste disposal based on the success of similar policies implemented for the residential and condominium collection programs<sup>8</sup>.

Other initiatives reviewed included opportunities to divert residue generated from Solid Waste facilities, impact of EPR programs, and improved diversion of construction and demolition (C&D) debris.

Staff have projected that the municipality’s waste disposal will increase to 394 kg per capita by 2029/2030 with no improvements to existing programs. With the implementation of the new initiatives, it is projected that the waste disposal rate could improve to 329 kg per capita in 2029/2030, approximately 10% above the provincial target of 300 kg per capita.

As part of next phase of the New Strategy, Staff plan on preparing an implementation plan for mandatory clear bags for the IC&I sector, as well as collaborating with Planning and Development to develop a comprehensive guide for multi-residential developments related to waste, as well as opportunities to ensure waste management is being considered as part of new developments.

Taking a more prominent role in promoting the circular economy presents an opportunity for HRM to further reduce waste disposal and is discussed as part of Key Theme 4. Additionally, NSECC is preparing a provincial plan for reaching the 300 kg per capita goal which will provide additional terms and guidance for municipalities to follow. A release date for this plan has not been identified.

**Key Theme 3 – Aligning HRM’s Solid Waste System with HalifACT.**

Based on the assessments completed to date as part of the New Strategy, the following have been identified as next steps for initiatives related to aligning HRM’s Solid Waste System with HalifACT:

- Solar Energy: Staff recommend proceeding with implementation of the solar project to provide renewable electricity to the new composting facility subject to the business planning/budget process starting in 2026/2027. Key considerations will include the evaluation of any potential alternatives available to HRM at that time with respect to reducing the carbon footprint associated with electricity consumption (e.g., purchase of renewable electricity).
- Landfill Gas to Renewable Electricity: HRM Environment and Climate Change is currently reviewing an opportunity to purchase renewable electricity for corporate use<sup>9</sup>. One proposed option is through the only approved Renewable to Retail provider in the province (Roswall Development Inc.). It is proposed that Staff (i.e., Solid Waste Resources and Environment and Climate Change) work with Roswall and Mirror NS to further explore the landfill gas to renewable electricity opportunity at the Otter Lake Waste Management Facility.
- Zero Emission Collection Vehicles: Moving HRM collection programs to zero emission vehicles such as electric is currently not proven for the waste industry, especially in cold weather climates.

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<sup>7</sup> The IC&I sector encompasses all properties which do not receive curbside solid waste collection, including but not limited to big box retail, schools, manufacturing, office, and multi-residential buildings (with 7 or more units).

<sup>8</sup> Curbside clear bags resulted in a 25% decrease in residential garbage tonnage when introduced in 2015. When introduced in 2021, clear bags at condominium properties resulted in a decrease of approximately 17% in the garbage stream.

<sup>9</sup> [Halifax Regional Council Staff Report. Corporate Renewable Energy Purchase Options. May 21, 2024.](#)

However electric waste collection vehicles are currently emerging and being tested. In conjunction with Key Theme 5, Staff recommend a further investigation with respect to opportunities related to the use of zero emission waste collection vehicles by the municipality.

**Key Theme 4 – Promoting the circular economy.**

As part of the first phase of the New Strategy, repurposing the Burnside Composting Facility into a Reuse Centre and Living Lab was reviewed. Staff note that the costs to develop and operate the proposed facilities are high with undefined tangible benefits (i.e., diversion). The capital and annual operating costs to develop a Reuse Centre and Living Lab were estimated at approximately \$10.1M and \$1.4M, respectively.

Living Labs do not always require a physical space but individuals or businesses working on circular solutions still benefit from support to facilitate connections and initiatives. As part of the next phase of the New Strategy, alternative approaches to support circular economy initiatives will be reviewed, including development of proposed activities, and identifying potential partners/stakeholders and needed resources. Staff will also look at the opportunity for HRM to participate in the Canadian Circular Cities and Regions Initiative<sup>10</sup>.

Recognizing the impact and expertise local not-for-profit and charitable organizations have in thrift stores and reuse, as part of the next phase of the New Strategy, it is also proposed that options to partner with and support those organizations are evaluated. For example, there may be an opportunity to recover reusable items from the drop-off area at the Otter Lake Waste Management Facility, diverting them from disposal or hosting community 'reuse expo' events to provide additional opportunities for engagement.

**Key Theme 5 – Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.**

Based on the work completed to date, Staff recommend continuing evaluation of the implementation of garbage carts and automated collection for the garbage and organics streams. An automated cart-based collection system for garbage and organics will realize many benefits for HRM including modernizing the way waste materials are stored and collected, improvement to health and safety, and result in mitigating labour demands while improving the quality of jobs associated with waste collection. It is not recommended to further consider recycling carts at this time due to the implementation of EPR given that the responsibility for the residential recycling program has shifted from the municipality to producers.

The up-front capital investment to purchase new garbage carts for the municipality is approximately \$14.0M, with subsequent annual costs to supply new and replacement garbage carts estimated at approximately \$700K annually. Collection costs (operating) are expected to decrease marginally due to time in motion and labour savings compared to no change in service delivery.

It is proposed that as part of the next phase of the New Strategy, staff complete public engagement with respect to transitioning the curbside garbage collection program to a cart-based program.

It is further proposed that staff develop a Garbage/Organics Automated Cart Based Collection Implementation Plan as a stand-alone staff report. The report will be presented to ESSC/Regional Council before the end of the first quarter of fiscal year 2025/2026.

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<sup>10</sup> [The CCRI is a collaboration of the National Zero Waste Council, the Federation of Canadian Municipalities, the Recycling Council of Alberta, and RECYC-QUÉBEC.](#)



**Key Theme 6 - Evaluating expanding the household special waste (HSW) program.**

HRM's Bayer's Lake HSW Depot is located on the same site as the MRF. The HSW depot is limited to only operating on Saturdays as there is not enough space to accommodate both residential and commercial traffic related to both operations.

The HSW depot was determined to be in poor condition and to have reached the end of its useful life. Additionally, in view of expanding the operation beyond only Saturdays and given that HRM may consider leasing or selling the MRF, it is proposed to relocate and develop a new depot at 222/230/232 Horseshoe Lake Drive. Staff plan to complete a conceptual design in 2024/2025. Pending positive outcomes, Staff plan to relocate the HSW depot as early as 2026/2027, subject to the business planning/budget process.

The capital cost for a new depot was estimated at approximately \$1.3M, however, will need to be revised in relation to the new proposed site. Based on current usage and population growth, it was projected that a second day of operation would be required in the next three years and that a 2-day operation should meet the municipality's long-term needs. Adding a second day is only anticipated to increase current operating costs by approximately 10% as most of the additional cost was estimated to be related to labour.

A second proposed HSW depot to be located in Dartmouth will also be evaluated as part of a Public Works initiative<sup>11</sup> related to the development of a long-range facilities plan.

Establishing both Halifax and Dartmouth depots will make the program more accessible to residents and drive more participation and capture of HSW materials. Additionally, establishing two depots and increasing operating days will reduce the need for mobile HSW events.

**Key Theme 7 – Evaluating expanding the new composting facility.**

HRM's new composting facility is planned to be fully commissioned during Summer 2024. The new facility is being developed with an annual processing capacity of up to 60,000 tonnes per year of organics from residential (i.e., curbside collection) and IC&I sources and can be expanded to accept 75,000 tonnes per year in the future as needed. As part of the next phase of the New Strategy, Staff will evaluate potential expansion options for HRM's new composting facility.

**Key Theme 8 – Evaluating expanding the Rural Refuse Depot operation.**

HRM owns two Rural Refuse Depots (Sheet Harbour and Middle Musquodoboit) which act as transfer stations for garbage collected from the eastern part of the municipality, with the garbage being ultimately consolidated, transferred, and disposed of at the Otter Lake Waste Management Facility. Additionally, local residents and businesses are permitted to drop off garbage and scrap metal at no cost.

One of the challenges for the eastern part of the municipality is access to a disposal location for C&D debris. The nearest location for residents and businesses is the Halifax C&D Transfer Station located at 188 Ross Rd, which is a 75-minute one-way trip from Sheet Harbour, for example.

As part of the New Strategy, modifying the Sheet Harbour depot to accept C&D was reviewed, under a cost recovery model. Capital costs were estimated at \$860,000, with an increase in operating costs of approximately \$150,000 annually. Under a cost recovery model, the tip fee for C&D disposal at the Sheet Harbour depot would be approximately \$574 per tonne. The high cost is also related to the low volume of C&D anticipated to be disposed of at the depot (estimated at approximately 400 tonnes). Staff understand that there are several local options for C&D debris management through local service providers in the eastern part of the municipality. The disposal cost for these activities is estimated to range from \$200 to \$250 per tonne, which is more cost effective than establishing a service at the Sheet Harbour depot.

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<sup>11</sup> *The Public Works Facilities Plan* is a key deliverable identified in the 2024/2025 Public Works Business Plan.



**Key Theme 9 – Other items related to benchmarking, waste audits, and modernizing the Solid Waste Resource Collection and Disposal By-Law S-600.**

Benchmarking work completed included a comparison to 11 other Canadian jurisdictions and showed that households in HRM place approximately 34% less waste (garbage, organics and recyclables combined) for curbside collection<sup>12</sup>. Limited garbage and organics collection costs were available from other jurisdictions; therefore, no comparison was made. Relative to the cost of recyclables, HRM costs for collection and processing averaged 36% lower compared to the other jurisdictions scanned. Generally, the benchmarking work completed supports that HRM is performing well in comparison to the jurisdictions scanned.

An audit of residential and IC&I organics was also completed and showed that the percentage of unacceptable material in the organics stream has increased since the last audit conducted in 2017. The most common form of unacceptable material was plastic bags which were used to contain food waste. This information can help inform education campaigns and curbside inspection efforts to ensure reduced contamination in the organics stream.

The Terms of Reference for the New Strategy also identified the need to review and modernize By-law S-600. Given the complexity of the regulation, this review is expected to extend beyond the completion of the New Strategy. Several key outcomes identified in the review will require amendments, including changes related to EPR, clear bags for IC&I, and collection (i.e., garbage carts and automation).

**Next Steps**

As mentioned, the schedule to complete the New Strategy is shown in the below table. The following sections summarize the scope of work to be completed for Tasks 4, 5, and 6, as well as additional items.

**Table 2 – New Strategy Schedule**

<b>Task</b>	<b>Deadline</b>
Task 1 – Phase 1 Public Consultation	November 30, 2023
Task 2 – Key Themes – Technical Studies	March 31, 2024
Task 3 – Update ESSC/Regional Council	May-June 2024
Task 4 – Phase 2 Public Consultation	December 31, 2024
Task 5 – Phase 2 Assessments	December 31, 2024
Task 6 – Present Final Report to ESSC/Regional Council	Jan-March, 2025

**Task 4 – Phase 2 Public Consultation**

Phase 1 Public Consultation was completed to gain initial public input to inform development of the New Strategy. This input was gathered through a survey, under the following general topics:

1. Proposed objectives of the New Strategy
2. Current service levels (participation in programs)
3. Resident satisfaction

Phase 2 Public Consultation will focus on obtaining input and feedback from the public and stakeholders to inform initiatives related to:

- IC&I Clear Bag Policy Implementation Plan
- Garbage/Organics Automated Cart Based Implementation Plan
- Circular Economy Initiatives

As part of considering establishing new policies and programs, as applicable, consultation will include

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<sup>12</sup> Over the four years reviewed, HRM households placed an average of 22% less garbage, 39% less recyclables and 19% less organics compared to the average of all jurisdictions reviewed.

meetings with targeted groups of stakeholders, including:

- Investment Property Owners Association of Nova Scotia (IPOANS)
- Property Management Firms
- Metropolitan Regional Housing Authority
- Nova Scotia Public Housing Agency
- Retail Council of Canada – Atlantic Division
- Cart Manufacturers
- Waste hauling companies
- Accessibility Advisory Committee
- National Zero Waste Council
- Halifax Partnership
- Halifax Food Policy Alliance
- Local not-for-profit organizations involved in textile donations
- DIRECTIONS Council members
- Divert NS
- Nova Scotia Environment and Climate Change
- Non-government environmental organizations

Additionally, staff plan on completing focus groups and a public survey in relation to implementing cart-based collection of garbage, including related to items such as:

- Types of carts
- Sizes of carts
- Space required for carts
- Accessibility considerations

The survey process will follow a similar approach to Phase 1 of Public Consultation. It will be made available through HRM's Shape Your City portal and will be promoted through a robust promotional campaign.

#### Task 5 – Phase 2 Assessments

The following tasks will be completed as part of Task 5:

- Key Theme 2 - Contributing towards the Province of Nova Scotia's objective outlined in the 2022 Environmental Goals and Climate Change Reduction Act by reducing HRM's disposal rate from 383 kg per capita to 300 kg per capita by 2030.
  - Develop an implementation plan to introduce mandatory clear bags in the IC&I sector.
  - Collaborate with Planning and Development to develop multi-residential development waste management guidelines and identify opportunities for a solid waste review of building permit/planning applications.
- Key Theme 4 – Promoting the circular economy.
  - Evaluate opportunities to promote the circular economy.
  - Evaluate opportunities to promote reuse, including rescuing material from landfill disposal.
- Key Theme 7 – Evaluating expanding the new composting facility.
  - Evaluate expansion options.

Task 6 – Present Final Report to ESSC/Regional Council

As identified above in the New Strategy Schedule, the final report will be presented to ESSC/Regional Council between January and March 2025. This will include a 'Solid Waste Planning Document', as well as a summary of the findings from Tasks 4 and 5.

Additional Items:

The following is a summary of additional action items:

- Key Theme 1 – Reviewing the impact of Provincial Extended Producer Responsibility (EPR) Legislation.
  - Work to support the transition to the EPR program, including related to service delivery and negotiations with Producers, will be completed per the December 12, 2023, staff report<sup>13</sup> and subject to the business planning/budget process.
- Key Theme 3 – Aligning HRM's Solid Waste System with HalifACT.
  - Solar Energy: Potentially implement the solar project at the Ragged Lake site subject to the business planning/budget process starting in 2026/2027.
  - Landfill Gas to Renewable Electricity: Further evaluate the opportunity to generate renewable electricity at Otter Lake and for HRM to purchase through the Renewable to Retail program. If the findings are favourable, staff will look to implement the project subject to the business planning/budget process.
- Key Theme 5 – Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.
  - Develop a Garbage/Organics Automated Cart Based Collection Implementation Plan as a stand-alone staff report and present to the ESSC in 2025/2026 before the end of the first quarter.
- Key Theme 6 – Evaluating expanding the household special waste (HSW) program.
  - Develop a conceptual design plan for converting 222/230/232 Horseshoe Lake Drive into a HSW depot in 2024/2025. Pending positive outcomes, Staff plan to relocate the HSW depot as early as 2026/2027 subject to the business planning/budget process.
  - Evaluate establishing a Dartmouth HSW depot as part of a Public Works long-term facility needs assessment<sup>14</sup>.

**FINANCIAL IMPLICATIONS**

Per the approved Terms of Reference for the New Strategy<sup>15</sup>, \$78,214 has already been allocated to Task 4 – Phase 2 Public Consultation, as part of the original budget allocation of \$511,000. As mentioned, HRM has received \$306,000<sup>16</sup> in funding from the Sustainable Communities Challenge Fund to develop the New Strategy that has offset these costs.

An additional \$35,000 is requested to fund the development of a conceptual design plan for converting 222/230/232 Horseshoe Lake Drive into a HSW depot (Key Theme 6). Funding for this activity will be transferred from the Solid Waste Recapitalization Reserve Q556.

<sup>13</sup> [Regional Council Staff Report - Extended Producer Responsibility Municipal Registration. December 13, 2023.](#)

<sup>14</sup> *The Public Works Facilities Plan* is a key deliverable identified in the 2024/2025 Public Works Business Plan.

<sup>15</sup> [Regional Council Staff Report. Terms of Reference for HRM's Solid Waste Strategy Review. February 2, 2023.](#)

<sup>16</sup> The original budget for the work planned to date was estimated at \$511,000.

### **Budget Summary, Solid Waste Reserve, Q556**

Net Projected Available Reserve Balance, April 1/2024	\$ 13,180,347
Less: Unbudgeted withdrawal	\$ <u>35,000</u>
Net Projected Available as of Mar.2024/25	\$13,145,347

### **RISK CONSIDERATION**

There are no significant risks associated with the recommendations in this report. The development of the New Strategy and associated initiatives provides for necessary planning to facilitate future solid waste service delivery with consideration of applicable policies/legislation, infrastructure needs, and growth of the municipality.

### **COMMUNITY ENGAGEMENT**

As discussed in this report, Phase 1 Public Consultation was completed through a public survey to gain initial public input to inform development of the New Strategy. There were 1,638 responses to the survey, which was available between September 25 to November 27, 2023 via the Shape Your City Halifax portal and through other means. Survey respondents strongly supported<sup>17</sup> the existing and proposed objectives of the New Strategy, including alignment with HalifACT and reducing greenhouse gas emissions. Initiatives that promote waste reduction and reuse ranked as the highest priority, followed by environmental sustainability.

### **ENVIRONMENTAL IMPLICATIONS**

The New Strategy is focused on achieving the following objectives:

- Align HRM's Solid Waste System with HalifACT, including contributing towards:
  - Net-zero corporate emissions by 2030
  - 75% reduction in community emissions by 2030 as compared to 2016 baseline
  - Net-zero community emissions by 2050
  - Reducing waste generation by 30% by 2050
  - 100% waste diversion by 2050
- Contribute towards meeting the following objective outlined in the Province of Nova Scotia's 2022 Environmental Goals and Climate Change Reduction Act:
  - Reduce Nova Scotia's disposal rate from 402 kg per capita to 300 kg per capita by 2030. In 2020/2021 HRM's disposal rate was 361 kg per capita.

By completing the New Strategy, the municipality will develop the necessary plans to meet long-term environmental objectives related to climate change and waste diversion.

### **ALTERNATIVES**

The Standing Committee could choose to recommend to Regional Council to not approve the recommendation (i.e., proceeding with the next phase of the New Strategy summarized previously in *Next Steps*). This would mean that staff would not be able to meet the following objective in the Strategic Priorities Plan 2021-2025:

- ***Improve Waste Diversion and Align Halifax's Solid Waste Strategy with HalifACT***

*Conduct a review and update of the municipality's Solid Waste Strategy including aligning the strategy with HalifACT, promoting the circular economy and reviewing the municipality's recycling program.*

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<sup>17</sup> 71-93% of responses related to the New Strategy and objectives ranked as 'important' or 'very important'.

Additionally, as the last strategy update was completed in 2014, the municipality would not have strategic plans in place for the solid waste system to meet long-term objectives.

Therefore, staff do not recommend this alternative.

**ATTACHMENTS**

Attachment A – Phase 1 Update Report for the New Strategy.

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A copy of this report can be obtained online at [halifax.ca](http://halifax.ca) or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Shannon Betts, Manager - Policy & Enforcement, Solid Waste Resources, 902.476.2470

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# Solid Waste Strategy Review

## Phase 1 Update

### Prepared by:

Andrew Philopoulos, Shannon Betts  
Solid Waste Resources  
May 6, 2024



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# Introduction

On February 7, 2023, Regional Council approved the Terms of Reference for HRM's Solid Waste Strategy Review (New Strategy)<sup>1</sup>. The purpose of this report is to summarize work completed to date as part of Public Consultation (Task 1) and Key Themes/Technical Studies (Task 2).

The Key Themes to be addressed by the New Strategy include:

1. Reviewing the impact of Provincial Extended Producer Responsibility (EPR) Legislation.
2. Contributing towards the Province of Nova Scotia's objective outlined in the 2022 Environmental Goals and Climate Change Reduction Act by reducing HRM's disposal rate per capita from 383 kg per capita to 300 kg per capita by 2030.
3. Aligning HRM's Solid Waste System with HalifACT.
4. Promoting the circular economy.
5. Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.
6. Evaluating expanding the household special waste (HSW) program.
7. Evaluating expanding the new composting facility.
8. Evaluating expanding the Rural Refuse Depot operation.
9. Other items related to benchmarking, waste audits, and modernizing the Solid Waste Resource Collection and Disposal By-Law S-600.

Dillon Consulting (Dillon) was retained to provide consulting services in relation to Public Consultation (Task 1), as well as developing reports associated with Key Themes/Technical Studies (Task 2). Dillon's reports are publicly available on the New Strategy website:

[www.shapeyourcityhalifax.ca/solid-waste-strategy-review](http://www.shapeyourcityhalifax.ca/solid-waste-strategy-review)

The following memos and reports have been prepared by Dillon and are available on the New Strategy website:

- Phase 1 Consultation Survey Results
- Extended Producer Responsibility (EPR) Jurisdictional Review
- Benchmarking
- Institutional, Commercial, & Industrial (IC&I) and Multi-Residential Properties Best Practices
- Organic Waste Audit
- Material Recovery Facility and Household Special Waste Depot Assessment
- Repurposing Burnside Composting Facility Assessment
- Solar Farm Assessment at Ragged Lake Composting Facility
- Cart Based Collection Assessment
- Sheet Harbour Rural Refuse Depot Facility Assessment

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<sup>1</sup> [Halifax Regional Council Staff Report. Terms of Reference for HRM's Solid Waste Strategy Review. February 7, 2023.](#)

An internal steering committee was established to review Key Themes/Technical Studies as part of developing the New Strategy. The steering committee was engaged three times to date, in addition to breakout discussions, and includes representatives from:

- Government Relations and External Affairs
- Environment and Climate Change
- Corporate Real Estate
- Finance & Asset Management
- Planning and Development
- Halifax Water

Additionally, representatives from Diversity & Inclusion were recently added to the steering committee.

## Phase 1 Public Consultation

The purpose of the Phase 1 Public Consultation was to gain initial public input to inform development of the New Strategy. This input was gathered through a survey, under the following general topics:

1. Proposed objectives of the New Strategy
2. Current service levels (participation in programs)
3. Resident satisfaction

The survey was available from September 25 to November 27, 2023, and was supported by an extensive promotional campaign encompassing diverse media channels and accessible survey avenues. There were 1,638 responses to the survey, 70 of which were filled out at in-person events or received by mail. The remaining surveys were completed through the Shape Your City Halifax portal.

Basic demographic data identified that the majority of survey participants are residents of HRM (99%), have lived in HRM for over 20 years (65%), and live in a single detached home, semi-detached home, or duplex (89%). While the 55 to 64 age range had the highest participation (27%), the number of responses from all age brackets<sup>2</sup> were sufficient to be considered statistically representative of the municipal population.

Survey respondents strongly supported<sup>3</sup> the existing and proposed objectives of the New Strategy, including alignment with HalifACT and reducing greenhouse gas emissions. Initiatives that promote waste reduction and reuse ranked as the highest priority, followed by environmental sustainability.

Other key takeaways from the survey results included:

- Residents reduce, reuse, and recycle in various ways including curbside solid waste programs, donating items for reuse, and using reusable items like travel mugs.
- High level of awareness and general satisfaction<sup>4</sup> with HRM Solid Waste programs.
- Strong support for public stewardship (single-use plastic reduction) and programs/policies which promote recycling in businesses and multi-residential properties.
- Concerns related to access to current programs, including limited accessibility of facilities due to distance and hours of operation (e.g., household special waste drop-off).

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<sup>2</sup> A minimum 95% confidence level, with 5% margin of error was achieved for all age demographics.

<sup>3</sup> 71-93% of responses to questions related to the New Strategy and objectives ranked as 'important' or 'very important.'

<sup>4</sup> 68-81% of responses to questions related to curbside collection programs ranked 'satisfied' or 'very satisfied.'

Support for further exploration of Key Themes, including cart-based collection, additional household special waste (HSW) services and development of a reuse centre were also identified, and will be discussed further in the following sections.

## Key Theme 1 – Reviewing the impact of Provincial Extended Producer Responsibility Legislation

Extended Producer Responsibility (EPR) is a policy approach which makes the end-of-life management of a product the physical and financial responsibility of the producer. Packaging, paper products and packaging-like products (PPP) consist of materials currently managed in municipal blue bag recycling programs.

On August 2, 2023, Nova Scotia Environment and Climate Change (NSECC) announced EPR regulations for PPP<sup>5</sup>. Regional Council approved the municipality registering into the program on December 12, 2023. As part of the report<sup>6</sup> to Regional Council, staff outlined key timelines, considerations, and next steps. By December 1, 2025, producers will be responsible to collect and process recyclables from residential dwellings and other eligible premises. The municipality's role in relation to the collection and processing of recyclables, as well with respect to customer service and public education is currently unknown and subject to negotiations with producers during fiscal year 2024/2025.

As part of the New Strategy, staff had identified key items for review in preparation for the EPR legislation and negotiations with producers and included:

- Jurisdictional scan of service delivery models between producers and municipalities, including related to collection and processing of recyclable and review of key findings/experiences related to failure/successes, resident satisfaction, and performance.
- Review potential service delivery gaps for HRM under an EPR program such as how the institutional, commercial, and industrial (IC&I) sector will continue to access recycling processing services.
- Review of condition of HRM's Material Recovery Facility (MRF) and potential operating models under an EPR program, and the municipality's role.

As discussed in the *EPR Jurisdictional Scan*, a review of legislation and implementation was reviewed in Canadian and European jurisdictions including in Ontario, British Columbia, and Austria. Key findings included:

- Some municipalities (e.g. City of Chilliwack) continued to collect recyclables, making them a service provider on behalf of producers, including in some instances for shorter periods related to supporting the transition to an EPR program (e.g., City of London). Key considerations to not continue collection or only collecting during the initial transition period were related to the lack of cost recovery offered by producers, as well redeployment of municipal resources and capital<sup>7</sup>. Reasons to continue providing services were related to maintaining current service levels, resident

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<sup>5</sup> [Nova Scotia Environment and Climate Change. Circular Economy Progress Update. August 2, 2023.](#)

<sup>6</sup> [Halifax Regional Council Staff Report. EPR Municipal Registration. December 12, 2023.](#)

<sup>7</sup> City of Vancouver decided to discontinue providing collection services to producers after 2 years related to not recapitalizing recycling collection vehicles and shifting resources to street cleaning. Additionally recycling costs were not adequately being recovered.

customer service, and education. Experience shows that even where municipalities have decided not to be a service provider on behalf of producers, they have still carried out promotion and education with respect to the EPR program.

- None of the jurisdictions scanned that owned a MRF continued to operate them as a service provider on behalf of producers (e.g., City of Hamilton). The trend is that municipalities are either repurposing their MRF asset for other functions or are leasing their MRF to the private sector, who in turn act as a service provider to producers. Staff note that this appears related to whether or not the asset is needed for delivery of the EPR program, and that private sector operators are better positioned to operate a MRF and mitigate risk.
- Acknowledging positive feedback from jurisdictions scanned related to EPR programs including smooth transitions, expansions of existing programs, and financial savings, key challenges noted included:
  - Service providers, such as municipalities, not being able to meet contractual contamination requirements related to collection.
  - Resident complaints related to program changes and perception that the municipality continues to be responsible for the recycling program.

HRM service delivery gaps were also discussed in the *EPR Jurisdictional Scan* related to the continued collection of recycling from small businesses in rural areas of the municipality<sup>8</sup> and processing of recyclables from the IC&I sector. Key findings included:

- Options to continue the delivery of recycling collection to rural areas could include negotiating a per unit rate with producers to continue delivering collection, establishing a parallel curbside collection program, or requiring ineligible properties to retain private collection services.
- The municipality should facilitate the continued processing of IC&I recyclables through discussions with producers during the implementation of EPR.

As discussed in the *MRF and HSW<sup>9</sup> Assessment* report, HRM's MRF is in good condition and could be a useful asset under an EPR program. As part of the report, three operating models were reviewed over a 25-year planning horizon with consideration for improved sorting and capacity capability. They included:

- **Maintain Existing Operating Model:** The MRF continues to process both incoming bagged containers and fibres similar to current operations, however, with a change to the facility layout to accommodate the installation of more modern container and fibre processing lines including separation equipment such as a ballistic separator and optical sorters. The initial capital cost for this option was estimated at approximately \$11.1 M.
- **Transfer Station:** The MRF is converted into a transfer station where bagged containers and fibres are transferred into open top trailers and sent to another facility for processing. The initial capital cost for this option was estimated at \$1.2M.
- **Hybrid:** A hybrid approach where the MRF continues to process bagged fibres on a modernized processing line with new equipment, with bagged containers being transferred into open top trailers and sent to another facility for processing. The initial capital cost for this option was estimated at \$6.5M.

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<sup>8</sup> In 1998 Halifax Regional Council approved the inclusion of small businesses in rural areas of the municipality to the residential curbside collection program, provided residential limits are compatible.

<sup>9</sup> The Household Special Waste (HSW) Assessment is further discussed as part of Key Theme 6. Evaluating expanding the household special waste (HSW) program.

### What next?

Based on the assessments completed as part of the New Strategy, it is possible that the municipality will continue providing residential curbside collection services on behalf of producers both in the short and long term, pending successful commercial negotiations. It is noted that inadequate cost recovery was one of the reasons that municipalities cited in deciding to discontinue providing residential collection services.

It is possible that HRM continues to operate the MRF in the short term (~ 2-4 years) to support the initial transition to the EPR program. It appears less likely that the municipality would continue to operate the MRF long term as it is more likely that private sector service providers are better positioned to provide this service on behalf of producers. Additionally, it is possible that there will be interest in leasing or purchasing HRM's MRF which is a useful asset and in good condition.

Other key considerations include the continued provision of public education related to recycling and addressing service delivery gaps related to the IC&I sector.

## **Key Theme 2 – Contributing towards the Province of Nova Scotia's objective outlined in the 2021 Environmental Goals and Climate Change Reduction Act by reducing HRM's disposal rate per capita from 383 kg per capita to 300 kg per capita by 2030.**

As part of the New Strategy, the following were identified by staff as potential opportunities to reduce the municipality's disposal rate:

- Improvements to source separation for the IC&I sector, including for multi-residential properties.
- Diverting residues generated from HRM solid waste facilities from landfill disposal.
- Impact of proposed EPR legislation on waste diversion and disposal.
- Best practices related to construction and demolition (C&D) debris management.

A key area of focus is the IC&I sector<sup>10</sup>, given that it accounts for approximately 72% of waste disposal. The *IC&I and Multi-Residential Properties Best Practices* memo includes a jurisdictional scan of approaches used by municipalities in Ontario, British Columbia, and California. The memo notes that the municipality has implemented many of the best practices identified to support diversion across the IC&I sector. For example, HRM By-law S-600 requires all IC&I properties to provide bins for recycling (cardboard, paper, and blue bag), organics, and garbage.

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<sup>10</sup> The IC&I sector encompasses all properties who do not receive curbside solid waste collection, including but not limited to big box retail, schools, manufacturing, office and multi-residential buildings (with 7 or more units).



### Space for source separation

Multi-residential buildings are particularly challenging to ensure ongoing compliance due to high tenant turnover, the anonymity of individuals, and space limitations for separating waste. While robust education and enforcement programs are beneficial, significant changes are needed to make improvements in this sector. Programs and policies to promote recycling in multi-residential properties received strong support as part of Phase 1 Public Consultation, with 87% of survey respondents indicating this as 'Important' or 'Very Important'.

Support for establishing successful waste diversion programs starts as early as the design phase of a building. Sufficient space for source separation must be included in plans for buildings and be located in a manner that is convenient for tenants and waste collection. Jurisdictions scanned (e.g., Richmond Hill, ON and Peel, ON) achieve this through early engagement, such as providing a checklist for development applicants to ensure they understand the requirements. Information provided includes guidelines on the minimum number of containers per stream and space required for collection vehicles. A requirement for completion of a waste management plan<sup>11</sup> by applicants can also ensure requirements are understood and being followed. The City of San Diego has gone a step further in establishing minimum design standards for waste storage and collection that must be met before a development permit is issued.

Currently Solid Waste Resources reviews several building plans annually relative to accommodations for waste management, however, there is no specific requirement for this review. An opportunity exists for Solid Waste Resources to further collaborate with Planning & Development to ensure all developers are aware of waste requirements and provide advice/guidance on placement and space for bins. At this time, the need for new regulations is not seen as necessary, however, staff note a more proactive approach to engaging developers will assist with ongoing compliance with existing by-law requirements.

### Clear Bags for IC&I

The use of clear bags for garbage in the IC&I sector was not found to be common practice in any of the jurisdictions scanned. Staff note that HRM has seen great success with the use of clear bags for curbside collection and in condominium properties serviced by the municipality<sup>12</sup>. Seeing the amount and type of waste being generated promotes proper sorting and raises awareness about consumption habits, which promotes waste reduction efforts.

Clear bags also allow for easier inspection and auditing at the source (i.e., in the commercial container) and at waste handling facilities, allowing for education and enforcement efforts to be directed to the point of generation.

Given the communal nature of collection in multi-residential properties, tenants would retain anonymity, therefore 'privacy' bags would not be required. Other IC&I properties would further benefit from clear bags, being able to more easily identify waste generated from their business versus illegally dumped material<sup>13</sup>

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<sup>11</sup> Waste management plans can be requested from any IC&I property under Halifax By-law S-600. To date, plans have only been requested from established businesses, not any under development.

<sup>12</sup> Curbside clear bags resulted in a 25% decrease in residential garbage tonnage when introduced in 2015. When introduced in 2021, clear bags at condominium properties resulted in a decrease of approximately 17% in the garbage stream.

<sup>13</sup> The most common type of illegally dumped material in the municipality in the past year has been unsorted household waste, contained in black garbage bags.

## Residue management

Residue is material that is landfilled that is generated from HRM's two composting facilities and Material Recovery Facility (MRF)<sup>14</sup>. Diverting residues from landfill disposal is an opportunity that could contribute up to 9,000 tonnes towards the 2030 per capita disposal rate objective.

Emerging opportunities exist in Nova Scotia for diversion of residue, including through cement kiln and mixed waste processing facilities. Staff continue to explore options through the service providers that operate HRM waste management facilities. It is important to note that the principles of the Waste Hierarchy<sup>15</sup> remain at the forefront of consideration throughout the development of the New Strategy. Energy recovery is an important part of a well-functioning solid waste management system, supporting the circular economy in cases where reduction cannot be achieved.

It is anticipated that up to 6,000 tonnes of residue from the MRF will be sent to a local cement kiln operation in 2024/2025. Opportunities to divert residue from the new composting facility will be further explored once the facility has been commissioned.

## Impact of EPR on diversion

While it is anticipated that some materials will move from the garbage stream to recycling (e.g., polystyrene, laminated zip-top pouches) under EPR for PPP, it is still unclear what impact this will have on diversion in Nova Scotia. Staff note that the material management (capture rate) targets set by the province are to incentivize producers to capture high volumes of paper, plastic, metal and glass packaging<sup>16</sup>. Given the maturity and success of recycling programs in the province, it is possible capture rates of materials are already high, leaving minimal opportunity for additional diversion. The full scope likely will not be known at least until producers submit the Readiness Report to Divert NS in October 2024.

Multi-residential properties currently not eligible for municipal waste collection services are considered eligible premises as part of the EPR for PPP program. Starting in December 2025, producers of these materials will be financially and physically responsible for the collection of blue bag and fibre products from multi-residential buildings. It is likely EPR will incentivize property owners to promote proper recycling to their tenants and therefore improve diversion. Diverting material to the proper stream may potentially reduce frequency of collection and associated costs for garbage collection.

Additions to the provincial EPR program for electronics could provide an opportunity for diversion of material from landfill. Effective June 1, 2024, Nova Scotians will be able to recycle small household electric appliances, such as irons, can openers, vacuum cleaners and hair dryers, along with computers and televisions.

## Construction and demolition debris

Halifax By-law L-200, the *C&D Materials Recycling and Disposal License By-law* requires C&D Processing Facilities, Transfer Stations and Disposal Sites within HRM to obtain a license from the Municipality in order

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<sup>14</sup> Residue from the compost facilities consists of non-compostable materials such as plastic, metal or glass. From the MRF, non-recyclable materials including garbage are separated from the incoming blue bags and fibre. Residue is typically disposed of in landfill.

<sup>15</sup> [Halifax.ca/WasteLess](https://halifax.ca/WasteLess)

<sup>16</sup> Producers must recover 65% of rigid plastic, 40% of flexible plastic, 90% of paper and 80% of metal packaging by the year 2030 per the [Packaging, Paper Products and Packaging Like Products Material Management Standard](#).

to be in operation. The by-law further requires all operators to maintain an annual diversion rate of 75% in order to maintain their license in good standing.

The *IC&I and Multi-Residential Properties Best Practices* memo identified an approach in other jurisdictions (e.g., Vancouver, BC) where certain types of demolitions (i.e., heritage homes) are required to adhere to deconstruction and diversion standards. Currently, Planning & Development, with the support of Solid Waste Resources, is evaluating pursuing similar opportunities. Further analysis of material (types and quantity) and diversion opportunities are required to identify the feasibility of this approach.

Contributing towards provincial goal of 300 kg per capita by 2030

Based on interventions discussed, the table shows a projection of HRM’s contribution towards meeting the provincial waste disposal target of 300 kg per capita. Currently staff project HRM’s waste disposal per capita improving from 394 to 329 kg per capita in 2029/2030, assuming all interventions are implemented, approximately 10% above the provincial target of 300 kg per capita.

**Table 1 – Waste Disposal Per Capita Projection (tonnes unless otherwise indicated)**

Waste Stream	2022/23	Status Quo 2029/30	Intervention (Improvement) 2029/30	
Curbside Residential	45,561	52,052	New EPR programs Continued Improvement (10%)	46,847
IC&I: Multi-Residential <sup>17</sup>	41,937	48,729	Clear bags New EPR programs Improved Oversight (20%)	38,983
Other IC&I	62,906	73,094	Clear bags Improved Oversight (10%)	65,784
C & D	33,539	41,846	Deconstruction (10%)	37,661
Residue	N/A	N/A	Divert Residue (100%)	-9,000
<b>Total Disposal</b>	<b>183,943</b>	<b>215,357</b>		<b>180,276</b>
<b>Population</b>	<b>480,830</b>	<b>547,416</b>		<b>547,416</b>
<b>Waste disposal per capita</b>	<b>383 kg</b>	<b>394 kg</b>		<b>329 kg</b>

Note: Population and tonnage projections were included in the Benchmarking memo developed as part of the New Strategy. Population estimates are based on an average annual increase of 1.82% (a moderate growth scenario). Recognizing recent spikes in growth, these projections will continue to be updated against Stats Canada and actual tonnage data.

While the interventions presented above demonstrate potential opportunities, more robust program and policy changes at the municipal and provincial level are needed to further reduce disposal. As part of the New Strategy, HRM is considering taking a more prominent role in promoting the circular economy which

<sup>17</sup> Tonnage attributed to multi-residential properties has been estimated at 40% of the total IC&I garbage stream.

presents an opportunity to further reduce waste disposal and is discussed as part of Key Theme 4. Additionally, NSECC is preparing a provincial plan for reaching the 300 kg goal which will provide additional terms and guidance for municipalities to follow. A release date for this plan has not been identified.

### **What next?**

As part of next phase of the New Strategy the following will be completed:

- Develop an implementation plan to introduce mandatory clear bags in the IC&I sector.
  - Consult with industry stakeholders as further outlined *Next Steps* (e.g., IPOANS, Retail Council of Canada).
- Collaborate with Planning and Development to:
  - Develop a comprehensive guide for multi-residential developments (i.e., waste storage guidance).
  - Review opportunity for solid waste review of building permit/planning applications.

## **Key Theme 3 – Aligning HRM’s Solid Waste System with HalifACT.**

A key objective of the New Strategy is to align HRM’s Solid Waste System with HalifACT, which sets the following 2030 emissions reduction objectives for the municipality:

- Net-zero corporate emissions by 2030.
- 75% reduction in community emissions by 2030 as compared to 2016 baseline.

As outlined in the Terms of Reference for HRM’s Solid Waste Strategy Review, significant reductions in greenhouse gas emissions could potentially be achieved through the implementation of ongoing initiatives<sup>18</sup> and new initiatives further evaluated as part of the New Strategy, including:

- Meeting the Provincial objective of achieving 300 kg waste disposal per capita by 2030 (as previously discussed)
- Generation of renewable solar energy at the Ragged Lake Composting Facility.
- Generation of renewable electricity from landfill gas produced at the Otter Lake Waste Management Facility (Otter Lake).
- Requiring for future HRM residential and condo collection contracts that the waste collection fleet utilize zero emission (e.g., electric) vehicles.

Based on recent modelling, it is estimated that approximately 20,000 to 30,000 tonnes of CO<sub>2</sub>e could be mitigated annually starting in 2030 with the implementation of ongoing and new initiatives.

As part of the New Strategy, a *Solar Farm Assessment at Ragged Lake Composting Facility* report was prepared. The site is located adjacent to the new composting facility which is scheduled for commissioning in summer 2024. The new composting facility<sup>19</sup> is projected to have a monthly power demand up to approximately 565,000 kwh. A solar farm at the Ragged Lake site would provide an opportunity for the municipality to offset some of the power demand at the new facility with renewable energy.

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<sup>18</sup> For example, Improvements to Highway 101 landfill gas collection and treatment system.

<sup>19</sup> [Halifax.ca/NewOrganicsFacility](https://halifax.ca/NewOrganicsFacility)

Based on a review of the current regulatory constraints and project delivery options, a 1MW Net Metered, facility integrated system was recommended as part of the solar farm assessment for the site. The proposed system will offset the electricity demand of the new composting facility by approximately 22% and is estimated to have capital and annual operating costs in the order of \$2.0M and \$26K, respectively. The investment will result in a payback period of approximately 14 years, as HRM will pay electricity costs for the operation of the new facility. Given that the existing composting facility will be decommissioned over 2024/2025 and 2025/2026, the earliest that this initiative could be implemented is 2026/2027. If implemented, this project would result in an annual carbon mitigation of approximately 1,000 tCO<sub>2e</sub> through generation of renewable electricity.

With respect to Otter Lake, staff worked directly with the operator, Mirror Nova Scotia (Mirror), to evaluate the feasibility of generating renewable electricity from landfill gas generated on site. Mirror is responsible for site operations, including the landfill gas collection and treatment system<sup>20</sup> which is critical for odour mitigation, as well as the site's overall environmental management. Hence, any changes in the existing operations would need to be determined collaboratively between HRM and Mirror and may require amending the site operations agreement with Mirror.

Mirror has reviewed and confirmed the feasibility of installing a 1-1.6 MW engine on site with potential technology providers and their environmental consultant. Overall capital cost for this project is preliminarily estimated to be approximately \$6.9M. Considering there is no significant power demand on site, the renewable electricity generated through this project will need to be sent to the electricity grid for consumption elsewhere. If implemented, this project would result in an annual carbon mitigation of approximately 5,700 CO<sub>2e</sub>.

Staff note that, based on high level discussions between Mirror and Nova Scotia Power (NSP), it appears that the power purchase rate likely offered through NSP will not be favorable in supporting a business case for implementation of this system at Otter Lake. However, an alternative fundings and/or power purchase model is being explored for this initiative.

Opportunities related to use of zero emission (e.g. electric) collection vehicles for residential curbside and condo collection programs were reviewed as part of the *Cart Based Collection Assessment* report. Please refer to Key Theme 5 section in this document for further information regarding this assessment.

### **What next?**

Based on the assessments completed to date as part of the New Strategy, the following have been identified as next steps for initiatives related to aligning HRM's Solid Waste System with HalifACT:

- Solar Energy: Staff recommend proceeding with implementation of the solar project at the Ragged Lake site subject to the business planning/budget process starting in 2026/2027. Key considerations will include the evaluation of any potential alternatives available to HRM at that time (e.g., purchase of renewable electricity).
- Landfill Gas to Renewable Electricity: HRM Environment and Climate Change is currently reviewing an opportunity to purchase renewable electricity for corporate use<sup>21</sup>. One proposed option is through the only approved Renewable to Retail provider in the province (Roswall Development Inc.). It is proposed that Staff (i.e., Solid Waste Resources and Environment and Climate Change)

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<sup>20</sup> Landfill gas is currently collected and treated by flaring at Otter Lake.

<sup>21</sup> [Halifax Regional Council Staff Report. Corporate Renewable Energy Purchase Options. May 21, 2024.](#)

work with Roswall and Mirror to further explore the landfill gas to renewable electricity opportunity at Otter Lake. If the findings are favourable, staff will look to implement the project subject to the business planning/budget process. This will include developing a conceptual design plan, updated costing, exploring external funding opportunities, and reviewing the regulatory requirements for implementation of this project.

- Zero Emission Collection Vehicles: As presented in Key Theme 5 in this report, Staff recommend a further investigation with respect to opportunities related to utilization of zero emission collection vehicles by the municipality.

## Key Theme 4 – Promoting the circular economy.

Circular economy is based on the idea that there is no such thing as waste<sup>22</sup>. Products and systems are designed in a way that they can be reused, repurposed, or remanufactured. A circular economy considers environmental, financial and social principals. This is in contrast to the traditional ‘take-make-waste’ model where resources are made into products, then discarded as waste after a defined and limited life.

Circular economy will play a key role in the ability of HRM and Nova Scotia to reach the 300 kg per capita waste disposal goal. Given recent success partnering with the National Zero Waste Council, Halifax Partnership and the Halifax Food Policy Alliance on promoting Circular Food Systems<sup>23</sup>, staff believe that the municipality is well positioned to broaden the scope of support in this field.

As part of the New Strategy, staff proposed repurposing the Burnside Composting Facility to establish:

- A Reuse Centre: The intent being to capture goods that may have otherwise been destined for landfill disposal, and often a partnership is established with a not-for-profit or charitable organization to operate.
- Living Lab: is a physical and/or virtual space that brings together people from different backgrounds and allows them to foster innovation and research or test new ideas in a real-world setting. Living Labs promote collaboration between entrepreneurs, not-for-profits, government, industry, citizens to solve problems.
- Household Special Waste Depot

The New Strategy provided an opportunity to evaluate whether the Burnside Composting Facility<sup>24</sup> could be repurposed to support circular initiatives. As outlined in *Repurposing Burnside Composting Facility Assessment*, a favourable site design and outline for potential activities were completed. Staff note that the costs of developing and operating the site are high with undefined tangible benefits (i.e., diversion). The capital and annual operating costs to develop a Reuse Centre and Living Lab were estimated at approximately \$10.1M and \$1.4M, respectfully.

### **What next?**

Given this outcome, future use of the site will be reviewed as part of the Public Works initiative<sup>25</sup> to evaluate long-term facility needs. As part of this initiative, alternate sites will also be reviewed to establish a Dartmouth HSW depot as further discussed as part of Key Theme 6.

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<sup>22</sup> [National Zero Waste Council. Circular Economy Definition. 2022.](#)

<sup>23</sup> [National Zero Waste Council. Circular Food Hubs: Mainland Nova Scotia. 2023](#)

<sup>24</sup> The Burnside Composting Facility will be decommissioned over 2024/2025 and 2025/2026.

<sup>25</sup> *The Public Works Facilities Plan* is a key deliverable identified in the 2024/2025 Public Works Business Plan.



Living Labs do not always require a physical space but individuals or businesses working on circular solutions still benefit from support to facilitate connections and initiatives. As part of the next phase of the New Strategy, alternative approaches to support circular economy initiatives will be reviewed, including development of proposed activities, and identifying potential partners/stakeholders and needed resources. Staff will also look at the opportunity for HRM to participate in the Canadian Circular Cities and Regions Initiative<sup>26</sup>.

Recognizing the impact and expertise local not-for-profit and charitable organizations have in thrift stores and reuse, as part of the next phase of the New Strategy, it is also proposed that options to partner with and support those organizations are evaluated. For example, there may be an opportunity to recover reusable items from the drop-off area at Otter Lake, diverting them from disposal or hosting community 'reuse expo' events to provide additional opportunities for engagement.

## Key Theme 5 – Evaluating transitioning the curbside collection program to a full cart-based program with automated collection.

In 2020, Staff presented a comprehensive information report on Cart Based Garbage and Recycling Collection<sup>27</sup> (Information Report) to Regional Council on the potential to transition the residential curbside collection program for recycling and garbage from a bag-based system to a cart-based system, similar to the green cart program for the collection of residential organics. Cart-based collection of waste is an emerging trend across Canada and important factors in adopting a cart-based program are typically related to health and safety considerations, modernization of collection infrastructure, citizen satisfaction (e.g., ease of use, storage), and protection from animals/birds and associated litter. Furthermore, labour shortages have been another driving factor in other jurisdictions, as cart-based programs are typically implemented with automated collection which reduces labour requirements.



Figure 1 – Semi-Automated Collection (Left) Source: REGroup and Automated Collection (Right) Source: The Creemore Echo

<sup>26</sup> [The CCRI is a collaboration of the National Zero Waste Council, the Federation of Canadian Municipalities, the Recycling Council of Alberta, and RECYC-QUÉBEC.](#)

<sup>27</sup> [Halifax Regional Council. Staff Report. May 26, 2020. Cart Based Garbage and Recycling Collection.](#)

Key items identified as part of the Terms of Reference for assessment as part of the New Strategy included:

- Development of cart-based collection program options based on the Information Report.
- Full financial assessment of moving to a semi-automated or fully automated cart-based collection program for all streams.
- Engineering assessment of possible infrastructure and process changes for the processing of recyclables.

As described in the *Cart Based Collection Assessment* report, introducing garbage and recycling carts could include the use of 240 L garbage carts and 360 L split recycling carts to maintain the multi-stream program (i.e. fibers and containers). Automated collection could be employed to collect all streams (garbage/organics/recycling) with significant reduction to labour requirements and improved working conditions (e.g., health and safety). Challenges to introducing automated collection include educating the public to set out carts properly and right of way challenges such as parked vehicles, bike lanes, and overhead tree canopy. As such in practice, some areas of the municipality would need to be serviced by semi-automated collection similar to the current green cart program.

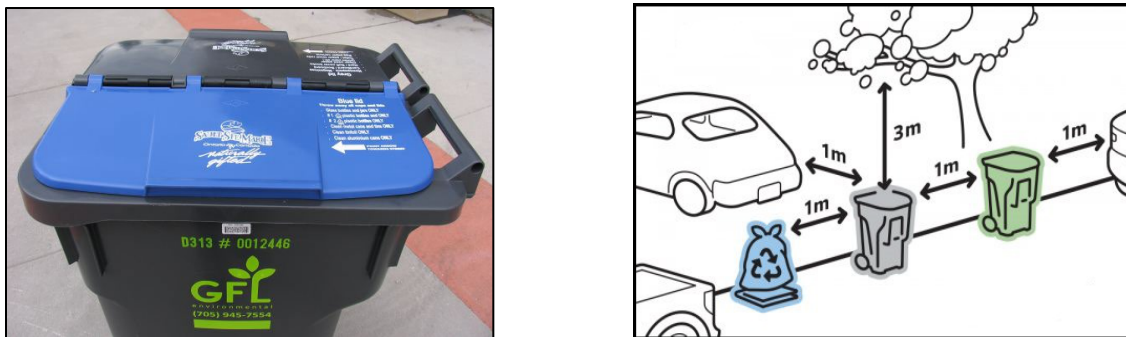


Figure 2: Left: Split Body Recycling cart – 360 L total capacity. Photo credit: Sault Ste, Marie, ON  
Right: Required curbside set out. Photo credit: Edmonton, AB

Service delivery considerations discussed as part of the *Cart Based Collection Assessment* report included EPR legislation, automated vs semi-automated collection systems, cart sizes, contracting approach, and zero-emission collection vehicles.

Given EPR legislation, the responsibility to deliver the residential collection program will shift from the municipality to producers commencing in December 2025, HRM should not make an investment in recycling carts until service delivery discussions/negotiations are completed. Staff do not recommend that the municipality make an investment in recycling infrastructure, including for recycling carts, as this responsibility has now shifted to producers. As previously mentioned, the municipality may continue to act as service provider for the collection of recyclables on behalf of producers in the short or long term. Depending on the role of the municipality under EPR, the municipality should only consider purchasing recycling carts under a cost recovery model paid by producers that is acceptable to HRM.

Fully automated collection systems cannot accommodate items that require manual labour for the collection of items such as bulky waste and white good collection (e.g. furniture, mattresses, fridges), bundles (construction and demolition debris or tree branches or limbs) or leaf and yard waste bags. A semi-automated collection system could continue to accommodate some of these items. There are potential service delivery changes such as collecting bulky waste and white goods by appointment and seasonal supplemental collection of leaf and yard waste.

The municipality could offer different size carts with the following considerations:

- Accessibility – residents could request smaller, easier to handle, cart sizes, including two 120 L carts for recycling as opposed to a 360 L cart. It is noted that this could impact the effectiveness of an automated collection system.
- Most jurisdictions offer varying cart sizes for garbage. The municipality could consider offering different sizes.



Figure 3: Illustrative comparison of typical cart sizes (dimensions may vary) Photo credit: Coquitlam, BC

The municipality currently contracts service delivery for the residential collection program through eight geographical areas. Historically this was completed to promote competition including with consideration for smaller vendors. As the local waste industry has consolidated and with a view of economies of scale and efficiency, it would be logical for the municipality to consolidate service delivery into three contracted service delivery geographical areas.

Moving HRM collection programs to zero emission vehicles such as electric is currently not proven for the waste industry, especially in cold weather climates. That being said, electric waste collection vehicles are currently emerging and being tested.

Key findings based on the *Cart Based Collection Assessment* report included:

- The estimated capital costs for the initial purchase of garbage and recycling carts for each dwelling serviced as part of the residential collection program is approximately \$34.6 million. If the municipality were only to implement garbage carts, the up-front capital investment is approximately \$14.0 million. Additionally, the cost to supply new and replacement carts is estimated at approximately \$700K annually.
- In view of the next collection contracts which likely commence in 2028<sup>28</sup>, HRM's annual collection costs for garbage/organics/recycling will likely increase from approximately \$17.9M<sup>29</sup> to \$19.6M with no change to service delivery. The increase is related to the capital cost of new collection

<sup>28</sup> Current collection contract expire June 30, 2026 with the option to extend 2 years.

<sup>29</sup> Based on known pricing for 2025/2026, adjusted for CPI for 3-years and applied to 2028/2029 including assuming a price of diesel of \$1.80 per L. It is noted that the report characterizes this cost as approximately \$15.7M, however, staff corrected for the price of diesel.

vehicles and operating considerations related to labour and maintenance costs. By comparison, implementing a system consisting of mostly automated with some semi-automated collection is expected to cost approximately \$19.2M annually, resulting in \$400k savings compared to no change to service delivery due to time in motion and labour savings.

### **What Next?**

Based on the work completed to date, Staff recommend continuing evaluation of the implementation of garbage carts and automated collection for the garbage and organics streams. An automated cart-based collection system for garbage and organics will realize many benefits for HRM including modernizing the way waste materials are stored and collected, improvement to health and safety, and result in mitigating labour demands while improving the quality of jobs associated with waste collection. It is not recommended to further consider recycling carts at this time due to the implementation of EPR given that the responsibility for the residential recycling program has shifted from the municipality to producers.

As part of the next phase of public consultation, staff plan on engaging the public on transitioning the curbside garbage collection program to a service that utilizes carts. The findings will be presented to Environment and Sustainability Standing Committee (ESSC) as part of presenting the New Strategy. It is noted that, as part of public consultation completed to date, there was support<sup>30</sup> for transitioning the curbside garbage collection program to a service that utilizes carts.

It is further recommended that staff develop a Garbage/Organics Automated Cart Based Collection Implementation Plan as a stand-alone staff report and submit to the ESSC in 2025/2026 before the end of the first quarter. The plan will include:

- Findings from industry and public consultation.
- Addressing service delivery gaps related to bulky items/white goods, bundles (e.g., construction and demolition debris or tree branches or limbs), and leaf and yard waste bags.
- Developing proposed program details related to:
  - Cart sizes
  - Cart management approach
  - Options for disposal/diversion of surplus waste bins
  - Bag requirements/limits
  - Curbside Enforcement
  - Zones for automated and semi-automated collection within the municipality
- Considerations related to the Housing Accelerator Fund.
- Evaluation of utilizing zero emission collection vehicles.
- Procurement approach
- Evaluation of the need for a pilot program
- Implementation schedule
- Communication plan
- Financial Impact

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<sup>30</sup> 55% of respondents indicated very important or important, while 17% indicated somewhat important.

## Key Theme 6 – Evaluating expanding the household special waste (HSW) program.

HRM provides a household special waste (HSW) program to capture residential hazardous wastes. The program consists of a permanent depot located at the MRF at 20 Horseshoe Lake Dr., Bayer's Lake and is open most Saturdays from 9 am to 4 pm (42 days per year). Additionally, the municipality hosts up to 17 mobile HSW Depot events each year to service residents in communities across HRM to provide access to those further away from Bayer's Lake.

As part of the New Strategy, expanding the Bayer's Lake HSW Depot to a 35-40 hours per week operation was reviewed. Additionally, repurposing part of the Burnside Composting Facility site for a new permanent HSW depot, open approximately 35-40 hours per week was also explored. It is noted that as part of the public consultation completed to date, survey results indicated that 39% (302 responses) of respondents who are aware of the HSW depot service have not used it because the hours and/or locations are inconvenient. HRM has also frequently received feedback from residents on the need to expand access to the program.

Two reports were prepared associated with expanding the HSW program including the *MRF and HSW Assessment* with respect to the Bayer's Lake operation; and *Repurposing Burnside Composting Facility* with respect to establishing a second permanent HSW depot at 80 Gloria McCluskey Avenue in Dartmouth.

With respect to the Bayer's Lake HSW Depot, it was determined that the depot is in poor condition and has reached the end of its useful life<sup>31</sup>. The capital cost for a new depot was estimated at approximately \$1.3M<sup>32</sup>. Based on current usage<sup>33</sup> and population growth, it was projected that a second day of operation would be required in the next three years and that a 2-day operation should meet the municipality's long-term needs. It was suggested that a 5-day operation would leave the asset underutilized. Adding a second day is only anticipated to increase current operating costs<sup>34</sup> by approximately 10% as most of the additional cost was estimated to be related to labour.

Any expanded operation outside of Saturdays would result in the Bayer's Lake HSW Depot residential traffic mixing with commercial MRF traffic creating an unsafe environment. The MRF is generally not open on Saturdays for receiving, meaning there is no commercial trucking activity. This is the reason that the HSW Depot is only open to the public on most Saturdays (acknowledging statutory holidays where residential collection and MRF operations are moved to Saturday). As such, and given the possibility that the MRF could be leased or sold as noted in Key Theme 1, the best approach would be to relocate the Bayer's Lake HSW Depot<sup>35</sup>. Corporate Real Estate identified a potentially suitable available property at 222/230/232 Horseshoe Lake Dr. (Old Salt Dome). This property is ideal given its size and layout and that it is located closely to the existing depot. Additionally, siting the HSW Depot on its own property would allow the municipality to expand operating days and hours, as needed.

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<sup>31</sup>The depots consist of a small 156 m<sup>2</sup> fiberglass building.

<sup>32</sup>This includes replacement of the existing building, construction of a new access road, and a traffic impact assessment.

<sup>33</sup>In 2023, approximately 8,898 vehicles accessed the Bayer's Lake HSW Depot.

<sup>34</sup>The 24/25 HSW operating budget is \$1.92M of which \$1.31M is related to the operation of the Bayer's Lake Depot. An additional \$210,000 was estimated to be needed to expand the operation to a 2-day operation.

<sup>35</sup>The establishment of a separate HSW entrance was also evaluated at the 20 Horseshoe Lake Dr. property but was deemed not suitable by staff given it would require expanding the site onto an adjacent property used for stormwater retention.



As outlined in Key Theme 4, repurposing the Burnside Composting Facility into a Living Lab, Reuse Centre, and HSW depot was deemed costly with undefined tangible benefits. Staff recommend to continue evaluating the potential of establishing a Dartmouth HSW depot to provide better access to the program. Between expanding the Halifax operation to a minimum of 2 days per week and establishing a similar operation in Dartmouth, the need for mobile HSW events would be greatly reduced<sup>36</sup>. Additionally, an expanded operation will make the program more accessible to residents and drive more participation and capture of HSW materials.

### **What Next?**

Staff propose completing a conceptual design of developing the 222/230/232 Horseshoe Lake Drive into a HSW depot, as well as developing details related to service delivery (i.e., continue to contract out or provide internal staff), implementation schedule, and financial impact (i.e. capital, operating, and lifecycle costs). The work will be planned to be completed in 2024/2025. Pending positive outcomes, Staff will plan to relocate the HSW depot as early as 2026/2027, subject to the business planning/budget process.

The Burnside Composting Facility is planned to be decommissioned in 2025/26. The future potential use of the site will be reviewed as part of Public Works initiative<sup>37</sup> to develop a long-range facilities plan. As part of this initiative, a Dartmouth HSW depot will be included in the evaluation of long-term facility needs for Public Works. Establishing a Dartmouth HSW depot will be completed as part of the business planning/budget process.

## **Key Theme 7 – Evaluating expanding the new composting facility.**

HRM's new composting facility is planned to be fully commissioned during Summer 2024. The new facility is being developed with an annual processing capacity of up to 60,000 tonnes per year of organics from residential (i.e., curbside collection) and IC&I sources. As part of HRM's 2017 Organic Management Strategy<sup>38</sup>, the municipality planned to increase the capacity of the facility from 60,000 tonnes per year to 75,000 tonnes per year in the future as needed. Based on projections developed as part of the *Benchmarking* assessment, the municipality will likely exceed the 60,000 tonnes per year of organics being delivered to the facility between 2028/2029 and 2032/2033 depending on population growth.

Several options were identified in the Terms of Reference for the New Strategy. Given ongoing efforts to commission the new composting facility, this has not yet been completed.

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<sup>36</sup>Staff estimate that mobile events could be reduced from 17 to 4 resulting in a \$465,000 savings in operating costs based on the 24/25 budget.

<sup>37</sup> *The Public Works Facilities Plan* is a key deliverable identified in the 2024/2025 Public Works Business Plan

<sup>38</sup> [Halifax Regional Council. Staff Report. April 20, 2017. Organics Management Consultation and Strategy](#)

## **What Next?**

As part of next phase of the New Strategy, staff will look to evaluate the following options<sup>39</sup> in collaboration with Harbour City Renewables (HCR)<sup>40</sup>:

1. Expand the new composting facility from 60,000 to 75,000 tonnes per year, or more based on further analysis, as originally planned.
2. Expand the new composting facility from 60,000 to 75,000 tonnes per year, or more based on further analysis, based on an innovative solution that could produce renewable energy (e.g., anaerobic digester) and that could potentially compliment the potential installation of a solar farm at the existing Ragged Lake Composting Facility, as previously discussed.
3. Pre-processing organics at the new facility and transfer to other processing facilities, such as the proposed Halifax Water Anaerobic Digestion Facility or other organics facilities located outside of HRM<sup>41</sup>.

## **Key Theme 8 – Evaluating expanding the Rural Refuse Depot operation.**

HRM owns two Rural Refuse Depots (Sheet Harbour and Middle Musquodoboit) which act as transfer stations for garbage collected from the eastern part of the municipality, with the garbage being ultimately consolidated, transferred, and disposed of at Otter Lake. Additionally, local residents and businesses are permitted to drop off garbage and scrap metal at no cost.

The Sheet Harbour Depot is located at #21611 Highway No. 7 in Sheet Harbour and is open 4 days per week, Wednesday through Saturday, from 8 am to 5 pm. It is somewhat larger than the Middle Musquodoboit Depot, being approximately 24,000 square metres on a generally square developed lot. There is electrical power at this site.

One of the challenges for the eastern part of the municipality is access to a disposal location for construction and demolition (C&D) debris. The nearest location for residents and businesses is the Halifax C&D Transfer Station located at 188 Ross Rd, which is a 75 minute one-way trip from Sheet Harbour, for example.

HRM has a policy enacted since 2001 that currently requires 75% of C&D debris generated in HRM to be diverted from landfill disposal. Additionally, HRM enacted in 2001, By-Law L-200 Respecting Licensing of Construction and Demolition Materials Recycling and Disposal Operations. As such the municipality has developed policies related to C&D debris management, including regulatory oversight and compliance, but does not have direct operational responsibility in managing C&D debris in HRM. The municipality generally does not accept C&D debris at Otter Lake or the rural refuse depots, except for small quantities collected curbside as part of the residential collection program.

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<sup>39</sup> As part of the Terms of Reference, Staff have identified at looking at organics reduction/diversion opportunities as part of reviewing circular economy initiatives. Those opportunities will continue to be examined as part of Key Theme 4 – Promote the circular economy.

<sup>40</sup> In 2020, HCR was awarded a contract by the municipality to design, build, and operate the new facility for 25 years.

<sup>41</sup> As part of the Terms of Reference for the New Strategy, it was also proposed to evaluate pre-processing at the Burnside Composting Facility. This will not be further evaluated given the findings of Key Theme 4 - Promoting the circular economy and related to findings of a recently completed engineering evaluation that determined that the facility is at the end its useful life due to structural considerations.



Modifying the Sheet Harbour Rural Refuse Depot to facilitate the collection and transfer of C&D debris is possible; however, there are technical, financial, and regulatory considerations. As noted in the *Sheet Harbour Rural Refuse Depot Facility Assessment*, HRM would need to partner with Halifax C&D to facilitate the processing and management of C&D debris. Significant capital infrastructure upgrades would be required including the addition of a weigh scale and scalehouse, retaining structure, and roads. The total capital cost is estimated to be approximately \$860,000.

The operational expenditures are also expected to increase under this operating model. These costs include:

- Salary and benefits for an additional employee to work the scalehouse.
- Increased electricity costs.
- Transportation of C&D material from Sheet Harbour Rural Refuse Depot to Halifax C&D.
- Miscellaneous supplies.
- General maintenance of the site.

It is estimated that the operating cost of the site would increase by approximately \$150,000 to accommodate the new service.

Under a cost recovery model, the tip fee for C&D disposal at the Sheet Harbour Rural Refuse Depot would be approximately \$574 per tonne, taking into consideration both operating and capital expenditures which is cost prohibitive. The high cost is also related to the low volume of C&D anticipated to be disposed of at the depot (estimated at approximately 400 tonnes).

HRM staff understand that management options for C&D in the eastern part of the municipality include:

- Direct hauling: involves taking C&D directly to Halifax C&D. For example, a roofing project; service providers are direct hauling materials like shingles using a dump trailer.
- Roll-off bin rental: involves renting typically a 20-40 cubic yard bin. The service includes bin drop off and collection and dumping once filled at Halifax C&D. For example, this would be the typical approach for a renovation project.

The disposal cost for these activities is estimated to range from \$200 to \$250 per tonne, which is more cost effective than establishing a service at the Sheet Harbour Rural Refuse Depot. Based on this and given that there are available C&D management options, Staff do not recommend implementing this service.

## Key Theme 9 – Other items related to benchmarking, waste audits, and modernizing the Solid Waste Resource Collection and Disposal By-Law S-600.

As part of the Terms of Reference for the New Strategy, staff proposed a comparison of environmental and financial metrics<sup>42</sup> versus other Canadian jurisdictions<sup>43</sup> with similar waste management systems (e.g., multi-stream source separation, curbside collection services). Benchmarking is a tool that allows evaluation of efficiencies, and opportunities to learn from other cities who show success.

The *Benchmarking* memo includes a comparison to 11 other Canadian jurisdictions and showed that households in HRM place approximately 34% less waste (garbage, organics and recyclables combined) for curbside collection<sup>44</sup>. Limited garbage and organics collection costs were available from other jurisdictions; therefore no comparison was made. Relative to the cost of recyclables, the memo does show HRM costs for collection and processing averaged 36% lower compared to the other jurisdictions scanned. Generally, the memo supports that HRM is performing well in comparison to the jurisdictions scanned.

Additionally, the *Benchmarking* memo provided waste generation forecasting for residential and IC&I waste streams, based on multiple population growth scenarios. This information is important to inform future program and facility plans. Staff note that forecasting future population and distribution of housing types (i.e., eligible for curbside collection versus multi-residential dwellings) continues to be a challenge. This highlights the importance of maintaining collaboration with the Planning & Development to understand how initiatives such as the Housing Accelerator Fund will have on collection services and facility capacity.

Key Theme 9 also included a characterization audit of residential and IC&I organics. The *2023 Organic Waste Audit* concluded that the percentage of unacceptable material in the organics stream has increased since the last audit conducted in 2017. The most common form of unacceptable material was plastic bags which were used to contain food waste. This information can help inform education campaigns and curbside inspection efforts to ensure reduced contamination in the organics stream.

### **What Next?**

The Terms of Reference for the New Strategy also identified the need to review and modernize By-law S-600. Given the complexity of the regulation, this review is expected to extend beyond the completion of the New Strategy. Several key outcomes identified in the review may require amendments, including:

- Clarifications to the section on flow control to accommodate potential export of recyclables managed through an EPR program (December 2025).
- Clear bags for IC&I (2025/26).
- Regulation containers for curbside garbage and requirements related to automated collection.

These updates will set the framework for future modernization of the By-law and will be evaluated in conjunction with the applicable future initiatives.

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<sup>42</sup> Metrics included: Solid Waste disposed per capita, Diversion rate, Weight of residential material collected and diverted per household and Cost per tonne of residential collection per waste stream.

<sup>43</sup> Jurisdictions: Ontario: Ottawa, Markham, Hamilton, Simcoe County, Region of Waterloo, Halton, and Niagara; in BC: Vancouver and Richmond; Edmonton, AB and one city that wished to remain anonymous.

<sup>44</sup> Over the four years reviewed, HRM households placed an average of 22% less garbage, 39% less recyclables and 19% less organics compared to the average of all jurisdictions reviewed.