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The Regional Municipality of Durham Information Report

From: Acting Commissioner of Works
Report: #2023-INFO-96
Date: November 24, 2023

Subject:

Waste Management Curbside and Multi-Residential Waste and Green Bin Audit

Recommendation:

Receive for information.

Report:

1. Purpose

- 1.1 The purpose of this report is to provide information on the Regional Municipality of Durham's (Region) Waste Audit Program and the subsequent waste audit conducted by Waste Reduction Group Inc. (WRG) on behalf of the Region. The Waste Audit Program was developed and implemented in the fall of 2022 through early 2023 to assist in establishing a baseline for waste composition as the Region transitions to the Extended Producer Responsibility (EPR) program and implements new programs.
- 1.2 The primary objective of the audit program is to gain an understanding of the composition of black bag garbage and green bin material for single-family residential curbside households and multi-residential buildings/complexes. This data will support the goals of the Long-Term Waste Management Plan, which aims to reduce the quantity of divertible items in the garbage and avoidable food waste in the Green Bin and enhance or develop new programs to divert additional segments of the waste stream.

2. Background

- 2.1 The Region developed the Long-Term Waste Management Plan (Waste Plan) for the next twenty years (2022 to 2040) to plan for the expected population growth and the waste generation that will follow. A copy of the Waste Management Plan can be viewed at <https://www.durham.ca/en/living-here/long-term-waste-management-strategy.aspx>
- 2.2 Several Waste Management Plan objectives require that the Region establish new baseline data for specific waste types to track trends and support new waste diversion efforts. Auditing of waste composition on a regular basis will provide quantities of unavoidable/avoidable food waste, recyclable materials, durable goods, textiles, single-use plastics, etc. remaining in black bag garbage, and avoidable food waste and compostable packaging in the Green Bin organics program, which will help inform future communication priorities.
- 2.3 Consistent data collection will be especially important as the private sector takes over responsibility for the Blue Box program in Durham Region on July 1, 2024. The transition will occur as part of the implementation of the provincial extended producer responsibility framework, and although the program should not experience changes initially the Region will benefit from continuing to assess any impacts post transition.
- 2.4 Data from the audit program will also evaluate resident participation in the Enhanced Green Bin Program launching July 1, 2024, which moves diapers, personal sanitary products, incontinence products, pet waste and pet litter from the garbage stream to the Green Bin.

3. Previous Reports and Decisions

- a. In January 2022, Report #2022-WR-1, Regional Council endorsed the Long-term Waste Management Plan 2022-2040 with actions to support the objective to reduce the quantity of waste generated.

4. Project Results for Initial Single-Family Residential Curbside Waste Audit

- 4.1 The Region contracted the services of Waste Reduction Group (WRG) to conduct a single-family residential curbside waste composition study, where 1000 households from the eight municipalities in Durham Region were sampled over a two-week period where samples from the garbage and organic streams were

collected and audited from December 19 – December 22, 2022, and January 9 – January 13, 2023.

5. Key Findings of Single-Family Garbage Stream Composition

- a. An average of 2.5 bags/containers were set out per household per week, with a participation rate of 71 per cent.
- b. 16,669 kg of garbage was collected over the two-week period or an average of 6.3 kilograms per household per week (kg/hh/wk).
- c. Based on the kilograms generated per week and census data of 2.87 persons per household as of 2021, annual curbside waste generation was extrapolated as 114 kg/per capita. While this is less than the 166 kg/per capita reported in the 2022 Waste Management Annual Report, the annual report also includes garbage disposed at the Region's Waste Management Facilities, multi-residential garbage and bulky item collection.
- d. Divertible materials in the garbage by Municipality ranged from 36 per cent to 54 per cent. The average percentage of divertible materials in garbage from all municipalities was 43 per cent. The previous audit data from 2018 showed 38 per cent of divertible materials in the garbage waste stream.
- e. Non-recyclable and non-organic material (i.e., chip bags, pet waste, plastic bags) represented the largest material category in the garbage stream with a percentage of 57 per cent.
- f. Textiles made up 2 per cent of single-family garbage audited. This establishes the baseline data for the Region's goal of reducing textile waste by up to 5 per cent through promotion and education campaigns in the first five years of the Long-term Waste Management Plan.
- g. Pet waste, diapers and sanitary products were found to be 5.5 per cent of the garbage stream. These materials will be accepted and processed as part of the Enhanced Green Bin Program starting 2024.

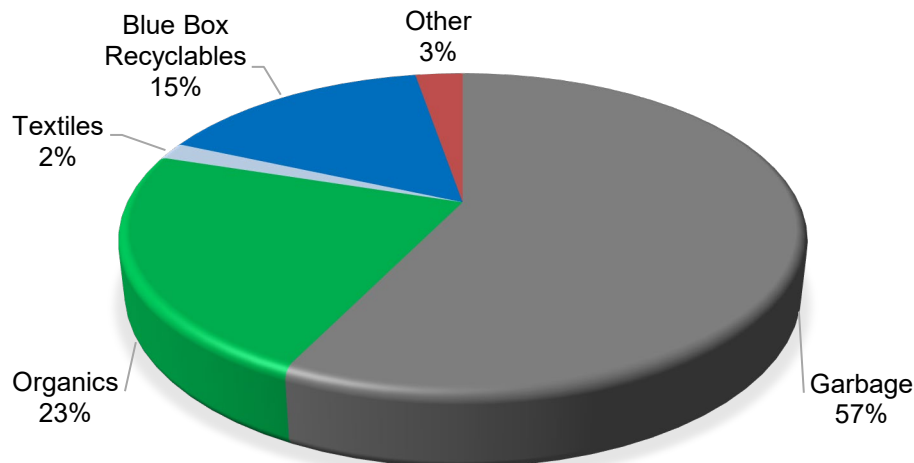


Figure 1: Composition of Divertible Materials and Non-Divertible Materials in Single Family Residential Garbage

6. Key Findings of Single-Family Organics Stream Composition

- a. An average of 0.5 bags/containers were set out per household per week, with a participation rate of 53 per cent.
- b. The percentage of non-organics in the organic stream by Municipality ranged from 4 per cent to 16 per cent. The average contamination rate from all municipalities was 9 per cent.
- c. The total sorted weight of organics set out was 1700 kg or an average of 3.4 kg/hh/wk.
- d. The organic materials in the green bin were found to be 90 per cent or 3 kg/hh/wk., with unavoidable food waste as the largest material category with 48 per cent or 1.6 kg/hh/wk.
- e. Avoidable food waste was found to comprise 33 per cent of the stream, consisting mainly of produce and bakery items. This establishes the baseline data for the Region's goal of reducing avoidable food waste through promotion and education campaigns in the first five years of the Long-term Waste Management Plan.
- f. Pet waste, diapers and sanitary products were 8 per cent of the organic waste stream. While these materials are not accepted in the current program, they

will be accepted and processed as part of the Enhanced Green Bin Program in 2024.

- g. The overall capture rate for all organic materials was 52 per cent. This number includes those materials that will be moved into the expanded stream.

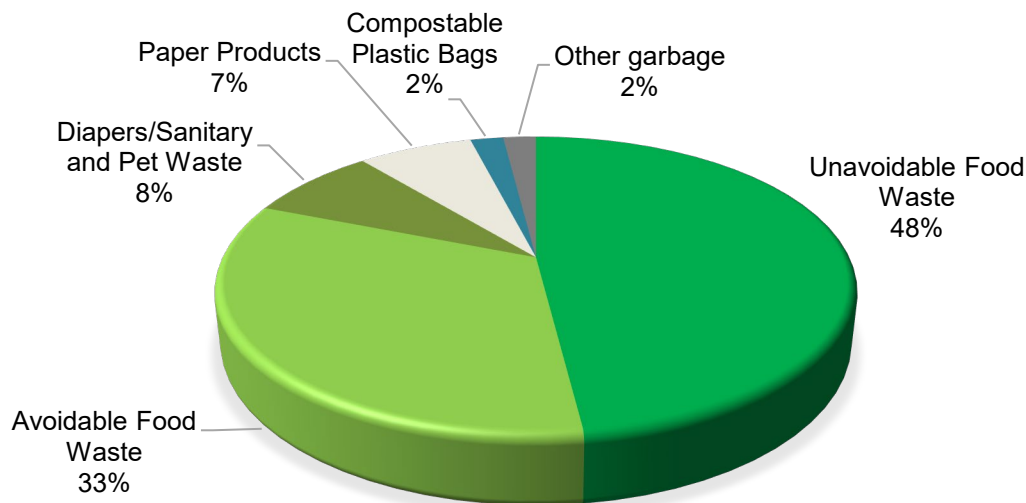


Figure 2: Composition of Organic and Non-Organic Materials in the Organic Stream

7. Project Results for Initial Multi-Residential Waste Audit

- 7.1 The Region contracted WRG to conduct a multi-residential waste composition study, where six multi-unit residential buildings from four municipalities within Durham Region were sampled over a one-week period. Samples from the garbage streams were collected and audited from March 27 – 31, 2023. The subsequent report included an analysis of the waste audit data to help develop a greater understanding of residential waste disposal practices in the multi-residential sector and guide policy decisions that aim to improve awareness and performance among this resident group.
- 7.2 The multi-residential audit gathered data from six buildings, ranging in size from 76 to 215 dwelling units located within Ajax, Oshawa, Pickering, and Whitby. The buildings represent a mix of rental and condominium ownership, and included townhouse complexes, and two to twelve storey buildings with one to three bedroom units.

8. Key Findings of the Multi-Residential Garbage Composition

- a. The average percentage of divertible materials in garbage from all the multi-residential buildings was 70 per cent, with a range of 65 to 73 per cent.
- b. Organic materials (i.e., food waste, tissues, compostable bags) represented the largest material category in the garbage stream with 44 per cent.
- c. Municipal hazardous and special waste (i.e., batteries, pressurized cylinders) represented the smallest material category in the garbage stream with 0.8 per cent.

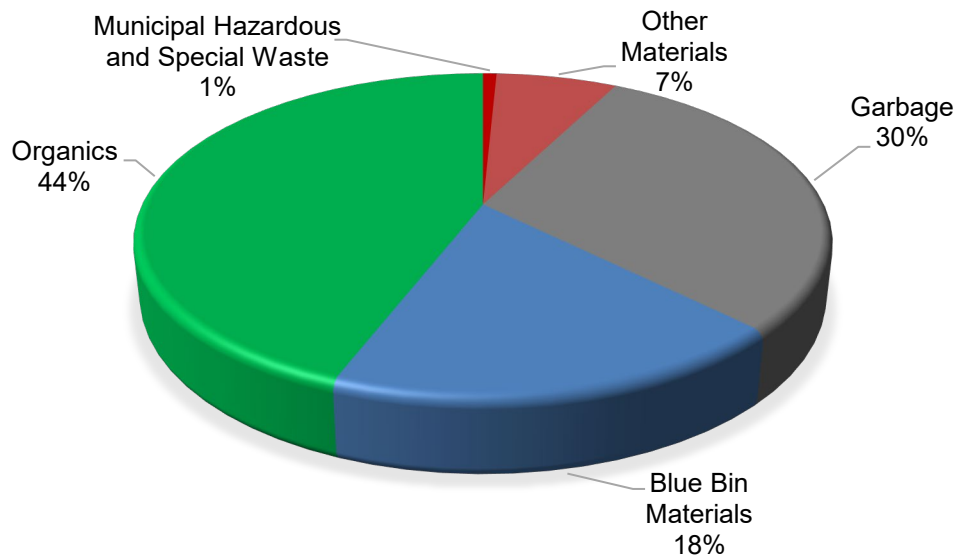


Figure 3: Composition of Divertible Materials and Non-Divertible Materials in Multi-Residential Garbage

9. Relationship to Strategic Plan

- 9.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:
 - a. Goal 1.2 Increase waste diversion and resource recovery
 - b. Goal 5.1 Optimize resources and partnerships to deliver exceptional quality services and value

10. Conclusion

- 10.1 The waste composition audit provides the Regional Municipality of Durham with valuable data that establishes a baseline for future waste composition audits. The comparison analysis will allow staff to track the progress of waste diversion of single-family households and multi-residential buildings/complexes in the Regional Municipality of Durham. Increasing the Regional Municipality of Durham's diversion rate is a key component of the Waste Management Plan. Currently, divertible materials in the garbage stream for single-family homes are estimated to be 43 per cent. If all materials from the current Blue Box and Green Bin programs are diverted into the appropriate streams, divertible materials would decrease to 4.4 per cent remaining in the garbage for this sector.
- 10.2 A notable part of the Regional Municipality of Durham's single-family garbage stream consisted of organic food waste and other organic waste. This result suggests that the Regional Municipality of Durham's upcoming Green Bin Enhancement Program will be a key opportunity to relaunch the program for those households that are not currently participating and encourage additional sorting of accepted organics from the garbage into the diversion program.
- 10.3 Based on the result of the single-family residential curbside waste audit and the multi-residential waste audit conducted for the Regional Municipality of Durham, there are opportunities for residents of the Region to improve the diversion rate through increased participation in the Green Bin program, and improved sorting of organic and recyclable materials in the garbage stream. Staff will continue to carefully review the barriers and benefits residents experience using the Regional Municipality of Durham's waste programs to improve upon campaign messaging and reference the ongoing waste composition audit program to track progress.
- 10.4 For additional information, please contact Andrew Evans, Director of Waste Management, at 905-668-4113, extension 4102.

Respectfully submitted,

Original signed by:

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