Recycle More. Waste Less.

Riverside Secondary School
8465 Jerome Street
Windsor, Ontario
N8S 1W8

2024 Waste Audit

Prepared For:

Rachel Bondy - Energy and Environmental Officer
C 519-796-5718 | T 519-966-0034 X 10560 |
rachel.bondy@publicboard.ca
Greater Essex County District School Board

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Executive Summary

Greater Essex District School Board retained Waste Reduction Group ("WRG") to conduct a solid, non-hazardous waste audit for the Riverside Secondary School (Essex DHS) located at 8465 Jerome Street in Essex, Ontario (the Site). The audit complied with the Environmental Protection Act, O.Reg. 102/94: Waste Audits and Waste Reduction Work Plans, and O.Reg. 103/94: Industrial, Commercial, and Institutional Source Separation Program.

The objectives of the audit were to determine the composition of the garbage, recycling, and organics streams by point of origin, quantify Essex DHS estimated 2024 annual waste generation, determine the waste diversion and capture rates, identify additional opportunities for waste reduction and diversion, and address any specific concerns identified during the study.

The scope of the waste audit included collecting three (3) samples of the Red Box stream, four (4) samples of the Blue Box stream and six (6) samples of the Garbage stream.

Findings and Conclusions

It should be noted that the conclusions and recommendations provided in this report are based on the waste audit sample results, which are considered representative of the annual quantities for this report. The estimates in this report have yet to account for fluctuations in waste quantities generated daily.

The conclusions discussed below are based on the waste audit findings. It should be noted that the conclusions and recommendations provided in this report are based on the waste audit sample results, which are considered representative of the annual quantities for this report. The estimates in this report have yet to account for fluctuations in waste quantities generated daily.

Sample Composition

- The garbage stream sample had the highest sample mass (44.82%) followed by Red Box (25.7%) and Blue Box (29.48%).
- **Garbage Stream** - organics in the garbage stream had the greatest overall sample mass (10.57% of total sample mass), followed by LDPE #4 plastic (6.47% of total sample mass), non-recyclables (6.39%), and PET #1 (5.84% of total sample mass).
- **Red Box** - consisted primarily of fine paper (9.87kg, 11.02% of total sample mass) and cardboard (6.78kg, 7.57% of total sample mass).
- **Blue Box** - consisted primarily of PET #1 (12.63kg, 14.11% of total sample mass) and non-recyclable material (4.09kg, 4.57% of total sample mass).

- **Classrooms** - generated the highest sample mass (56.74% of total sample mass) which consisted primarily of fine paper (11.82% of total sample mass), PET #1 (11.06% of total sample mass), cardboard (7.26%), LDPE #4 plastic (5.81%) and non-recyclables (5.29%).
- **Hall** - generated 16.56% of the total sample mass, primarily of PET #1 (5%) and organics (3.55%).
- **Cafeteria** - generated 15.64% of the total sample mass, which consisted primarily of organics (6.17%), LDPE #4 plastic (2.68%) and PET #1 (2.41%).
- **Gym** - generated 5.08% of the total sample mass which consisted primarily of non-recyclables (2.84%) and PET #1 (1.37%).

Contamination

- The contamination rates for the sampled streams were as follows: Garbage stream - 33.38%, Red Box stream - 15.23% and Blue Box stream - 34.66%.
- The **Red Box** sample consisted of 84.77% Red Box material, 13.61% Garbage material and 1.62% Blue Box material.
- Roughly 15% of the Red Box sample was contaminated with Blue Box material or garbage. **Red Box contamination** consisted primarily of the following materials:
    - Organics - 4.78%
    - LDPE #4 plastic film - 4.02%
    - Paper towels/compostable fibres - 2.52%
    - Plastic strapping - 1.3%
    - PP#5 - 0.83%
- The **Blue Box** sample consisted of 65.34% Blue Box material, 30.42% garbage material and 4.13% Red Box material and 0.08% Electronics
- Roughly 34% of the Blue Box sample was contaminated with garbage or Red Box material. **Blue Box** contamination consisted primarily of the following materials:
    - Non-recyclables - 15.51%
    - LDPE #4 plastic film - 11.27%
    - Organics - 2.58%
    - Boxboard - 2.16%
    - Fine paper - 1%
- The **garbage sample c**onsisted of 66.62% garbage material, 20.38% Blue Box material, 11.85% Red Box material, 0.95% Electronics, and 0.21% Special items
- Roughly 33% of the garbage stream sample was contaminated with Blue Box material, Red Box material, and Electronics/Special Items. Garbage stream contamination consisted primarily of the following materials:
    - PET #1 - 13.03%
    - Cardboard - 3.94%
    - Boxboard - 3.7%
    - PP #5 - 2.41%
    - Aseptic containers - 2.27%
    - Fine paper - 2.19%
    - Kraft paper/other fibres - 1.5%

Recyclables in the Garbage Stream

- The garbage sample consisted of 7.93% Mandatory Recyclables, 25.45% Other Recyclables, and 66.62% Other (Non-Recyclable) material.
- **Mandatory Recyclables** in the garbage stream consisted of (in % of total sample mass):
    - Cardboard - 3.94%
    - Fine paper - 2.19%
    - Aluminum - 1.38%
    - Steel cans - 0.37%
    - Newspaper - 0.05%
- **Other Recyclables** in the garbage stream consisted primarily of:
    - PET #1 - 13.03%
    - Boxboard - 3.73%
    - PP#5 - 2.41%
    - Aseptic containers - 2.27%
    - Kraft paper/other fibres - 1.5%
- **Estimated Annual Quantities Generated** - 17.19 MT of material are expected to be generated annually of which consists of the following materials:
    - PET #1 - 3.49 MT
    - Organics - 2.18 MT
    - Fine paper - 2.14 MT
    - Non-recyclables - 1.92 MT
    - LDPE #4 plastic film - 1.88 MT
    - Cardboard - 1.67 MT
- The 2024 **waste diversion rate was calculated to be 54.71%** (below the provincial objective of 60%) based on 9.4 MT of diverted waste and 17.19 MT of total waste generated.
- The overall **Capture Rate is 73.74%** based on a total diverted quantity of 7.3 MT and a total potential divertible quantity of 9.9 MT. The Blue Box capture rate was 68% and the Red Box capture rate was 81%.

Recommendations

Mandatory Recyclables

- **Cardboard — 0.31 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Red Box stream could **increase the waste diversion rate up to 2.3%** and **could increase the Red Box capture rate up to 6.4%.**
- **Fine paper — 0.17 MT** of material is estimated to be generated annually through the garbage stream. Diverting this through the Red Box stream could **increase the waste diversion rate up to 1.5%** and **could increase the Red Box capture rate up to 3.5%.**
- **Aluminum — 0.11 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Blue Box stream could **increase the waste diversion rate up to 0.6%** and **could increase the Blue Box capture rate up to 2.1%.**
- **Steel cans — 0.03 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Blue Box stream could

increase the waste diversion rate up to 0.4% and **could increase the Blue Box capture rate up to 0.5%.**

Red Box and Blue Box Streams

- **PET #1** - **1.01 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Blue Box stream could **increase the waste diversion rate by up to%** and could **increase the Blue Box capture rate by up to%.**
- **Boxboard** - **0.29 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Red Box stream could **increase the waste diversion rate by up to%** and could **increase the Red Box capture rate by up to%.**
- **PP#5** - **0.19 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing streams could **increase the waste diversion rate by up to%.**
- **Aseptic containers** - **0.18 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Blue Box stream could **increase the waste diversion rate by up to%** and could **increase the Blue Box capture rate by up to%.**

Add Organics Diversion Program

Organics generated in the garbage stream accounted for 1.84 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 11%**.

Dedicated Receptacles and Update Signage

Waste diversion rates could be improved by implementing dedicated receptacles with clear signage to encourage waste separation at the source. Provide dedicated receptacles with signage and pictograms as a clear message to staff and students to separate divertible materials from landfill waste at the source. Pictograms can provide examples of the types of waste suitable for the waste collection stream. Divertible material should be consolidated into a centralized location and picked up by a dedicated contractor.

Promoting Culture

A committee is recommended to oversee waste reduction and sustainability and promote a culture of waste diversion. Educate students and staff on the importance of waste diversion and communicate the corporate goals for waste diversion and sustainability. Create a positive message around the benefits of waste diversion and the individual's role.

- Support and encourage purchasing and using “environmentally friendly,” reusable or recyclable materials, packaging, and/or recycled content.
- Ensure an Environmental Policy is visible in common areas throughout the building and continue to emphasize the facility’s commitment to environmental stewardship through its training program and green or environmental initiatives.

- Encourage staff and students to prioritize bringing reusable containers, water bottles, and coffee cups.
- Promote and highlight current environmental programs and efforts through newsletters, posters, and/or bulletin boards for waste management.

Continuous Monitoring and Process Improvement
Track year-over-year waste diversion change capture rates and communicate progress to staff and students to encourage further participation/engagement.

Continuous monitoring and reporting for this site annually and comparison with year-over-year changes would provide insight into trends, which can be used as a basis for policy decisions regarding solid waste management for future projects. Further refinements to programs/processes can be made, and adherence to provincial requirements can be achieved.

1. Introduction

Greater Essex District School Board retained Waste Reduction Group ("WRG") to conduct a solid, non-hazardous waste audit for the Riverside Secondary School located at 8465 Jerome Street in Essex, Ontario (the Site). The audit complied with the Environmental Protection Act, O.Reg. 102/94: Waste Audits and Waste Reduction Work Plans, and O.Reg. 103/94: Industrial, Commercial, and Institutional Source Separation Program.

1.1 Purpose and Objectives

The purpose of the waste audit was to comply with Ontario Regulation 102/94 – Waste Audits and Waste Reduction Work Plans Part XI, which requires educational institutions to conduct a waste audit covering the waste generated by the establishment operating at the site and prepare and implement a waste reduction work plan on an annual basis to confirm compliance with Ontario Regulation 103/94 – IC&I Source Separation Programs.

The objectives are as follows:

- Determine the composition of the Red Box, Blue Box and Garbage streams by point of origin,
- Quantify the estimated 2024 annual waste generation for all waste streams based on audit data and the number of days in the school year,
- Determine the waste diversion and capture rates,
- Identify additional opportunities for waste reduction and diversion; and
- Address any specific concerns identified during the study.

The Site is considered to apply to O.Reg. 103./94 – Educational Institutions.

2. Scope of Work

To meet the objectives outlined above, the following activities were undertaken by WRG:

- Collected three (3) samples of the Red Box stream, four (4) samples of the Blue Box stream and six (6) samples of the Garbage stream.
- Sorted samples into predetermined categories as set out by WRG (detailed in Appendix A: List of Categories)
- Determined the total quantity of waste diverted from landfill through current reduction, reuse, and recycling programs implemented at the school. Quantities were calculated using sample mass multiplied by the number of school days per year;
- Completed a waste audit report summarizing the audit findings and provided recommendations for increased waste diversion efficiency.
- Conducted a site tour accompanied by Essex personnel and interviewed staff to obtain information on existing waste diversion practices.

3. Sampling Methodology

On November 15th, 2024, WRG collected three (3) samples of the Red Box stream, four (4) samples of the Blue Box stream and six (6) samples of the Garbage stream. The samples were collected from the following functional areas.

Table 1: Sample Summary

Functional Area	Blue Box	Garbage	Red Box	Total
Cafeteria		1		**1**
Classrooms	1	1	1	**3**
Gym	1	1		**2**
Hall	1	1	1	**3**
Office	1	1	1	**3**
Washroom		1		**1**
Total	**4**	**6**	**3**	**13**

Qualified WRG staff sorted the materials using containers to keep them separate. Waste was sorted into individual material categories and weighed using a calibrated scale (Appendix B: Scale Calibration Certificate). It was then re-bagged and disposed of in an appropriate waste container.

4. Waste Audit Findings

A total of 89.53 kg of sample materials was collected for the waste audit. The following sections summarize the site tour findings and analyze the sample composition.

4.1 Site Tour

During the tour of the Site, the following observations were made by WRG representatives:

- The Site implements garbage, Blue Box, and Red Box streams and collects specialty materials, including hazardous waste and medical equipment.
- Dedicated bins were available for each stream
- Signage was observed to be limited.

An analysis of the sample composition is provided in the following sections.

4.2 Sample Composition by Sampled Stream

Based on the audit findings, the garbage stream sample had the highest sample mass (44.82%) followed by Red Box (25.7%) and Blue Box (29.48%). The figure below shows the sample composition by material and sampled stream.

Table 2: Sample Composition by Sampled Stream and Material (in kg and % of total sample by mass)

Sampled Stream	Red Box		Blue Box		Garbage		Total	
Material	kg	%	kg	%	kg	%	kg	%
PET #1	0.15	0.17%	12.63	14.11%	5.23	5.84%	**18.01**	**20.12%**
Organics	1.10	1.23%	0.68	0.76%	9.46	10.57%	**11.24**	**12.55%**
Fine Paper	9.87	11.02%	0.27	0.30%	0.88	0.98%	**11.01**	**12.30%**
Non-Recyclables	0.06	0.07%	4.09	4.57%	5.73	6.39%	**9.88**	**11.03%**
LDPE (#4) Plastic Films	0.93	1.03%	2.98	3.32%	5.79	6.47%	**9.69**	**10.82%**
Cardboard	6.78	7.57%	0.23	0.26%	1.58	1.76%	**8.59**	**9.59%**
Paper Towels/Compostable Fibres	0.58	0.65%	0.23	0.25%	3.49	3.90%	**4.30**	**4.80%**
Boxboard	2.07	2.31%	0.57	0.64%	1.50	1.67%	**4.13**	**4.61%**
Aluminum	0.01	0.01%	2.63	2.93%	0.55	0.62%	**3.19**	**3.56%**
PP #5	0.19	0.21%	0.67	0.74%	0.97	1.08%	**1.82**	**2.04%**
Aseptic Containers	0.01	0.01%	0.38	0.42%	0.91	1.02%	**1.30**	**1.45%**
HDPE Plastic Containers #2			0.66	0.74%	0.31	0.35%	**0.97**	**1.09%**
Kraft Paper/Other Fibres	0.25	0.27%	0.02	0.02%	0.60	0.67%	**0.86**	**0.96%**
Scrap Wood					0.81	0.90%	**0.81**	**0.90%**
Cold Beverage Wax-Lined Paper Cups	0.16	0.18%	0.02	0.02%	0.56	0.62%	**0.74**	**0.82%**
Polystyrene #6	0.01	0.01%	0.03	0.03%	0.68	0.76%	**0.71**	**0.79%**
Coffee Cups	0.21	0.23%	0.01	0.01%	0.18	0.20%	**0.40**	**0.45%**
Electronic Waste					0.38	0.42%	**0.38**	**0.42%**
Moulded Pulp	0.34	0.38%					**0.34**	**0.38%**
Plastic Strapping	0.30	0.34%					**0.30**	**0.34%**
Glass			0.27	0.30%			**0.27**	**0.30%**
PPE			0.01	0.01%	0.17	0.19%	**0.18**	**0.20%**
Steel Cans			0.01	0.01%	0.15	0.17%	**0.16**	**0.18%**
Textiles			0.01	0.01%	0.09	0.09%	**0.09**	**0.10%**
Styrofoam					0.05	0.06%	**0.05**	**0.06%**
Gable Top Containers	0.01	0.01%	0.01	0.01%	0.02	0.03%	**0.05**	**0.05%**
Other Plastics #7			0.01	0.01%	0.02	0.03%	**0.03**	**0.03%**
Batteries			0.02	0.02%			**0.02**	**0.02%**
Newspaper					0.02	0.02%	**0.02**	**0.02%**
Composite Cans					0.01	0.01%	**0.01**	**0.01%**
Scrap Metal					0.01	0.01%	**0.01**	**0.01%**
Total	**23.01**	**25.70%**	**26.39**	**29.48%**	**40.13**	**44.82%**	**89.53**	**100.00%**

Notable observations are described below:

- **Garbage Stream** - organics in the garbage stream had the greatest overall sample mass (10.57% of total sample mass), followed by LDPE #4 plastic (6.47% of total sample mass), non-recyclables (6.39%), and PET #1 (5.84% of total sample mass).
- **Red Box** - consisted primarily of fine paper (9.87kg, 11.02% of total sample mass) and cardboard (6.78kg, 7.57% of total sample mass).
- **Blue Box** - consisted primarily of PET #1 (12.63kg, 14.11% of total sample mass) and non-recyclable material (4.09kg, 4.57% of total sample mass).

4.3 Sample Composition by Functional Area

The classrooms generated the highest sample mass (56.74%) which consisted primarily of fine paper, PET #1, cardboard, LDPE #4 plastic, and non-recyclables. The figure below shows the sample composition by material and functional area.

Table 3: Sample Composition by Functional Area and Material (in kg and % of total sample by mass)

Functional Area	Cafeteria		Classrooms		Gym		Hall		Office		Washroom		Total	
Material	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%
PET #1	2.16	2.41%	9.90	11.06%	1.23	1.37%	4.48	5.00%	0.01	0.01%	0.24	0.27%	**18.01**	**20.12%**
Organics	5.52	6.17%	0.96	1.07%			3.18	3.55%	0.78	0.87%	0.80	0.89%	**11.24**	**12.55%**
Fine Paper	0.01	0.01%	10.58	11.82%			0.31	0.35%	0.11	0.12%	0.01	0.01%	**11.01**	**12.30%**
Non-Recyclables	0.70	0.78%	4.74	5.29%	2.54	2.84%	1.74	1.94%	0.01	0.01%	0.16	0.18%	**9.88**	**11.03%**
LDPE (#4) Plastic Films	2.40	2.68%	5.20	5.81%	0.27	0.30%	1.12	1.25%	0.22	0.25%	0.48	0.54%	**9.69**	**10.82%**
Cardboard	0.50	0.56%	6.50	7.26%	0.22	0.25%	1.37	1.53%					**8.59**	**9.59%**
Paper Towels/Compostable Fibres	0.24	0.27%	1.42	1.59%			0.20	0.22%	1.58	1.76%	0.86	0.96%	**4.30**	**4.80%**
Boxboard	0.16	0.18%	3.38	3.78%			0.57	0.64%	0.02	0.02%	0.01	0.01%	**4.13**	**4.61%**
Aluminum	0.13	0.14%	2.51	2.80%	0.01	0.01%	0.52	0.58%	0.02	0.02%	0.01	0.01%	**3.19**	**3.56%**
PP #5	0.24	0.27%	1.42	1.59%	0.01	0.01%	0.15	0.17%	0.01	0.01%			**1.82**	**2.04%**
Aseptic Containers	0.34	0.38%	0.93	1.03%	0.01	0.01%	0.02	0.02%			0.01	0.01%	**1.30**	**1.45%**
HDPE Plastic Containers #2	0.28	0.31%	0.43	0.48%			0.25	0.28%	0.01	0.01%	0.01	0.01%	**0.97**	**1.09%**
Kraft Paper/Other Fibres	0.16	0.18%	0.27	0.30%			0.43	0.47%	0.01	0.01%			**0.86**	**0.96%**
Scrap Wood			0.81	0.90%									**0.81**	**0.90%**
Cold Beverage Wax-Lined Paper Cups	0.44	0.49%	0.01	0.01%	0.01	0.01%	0.27	0.30%	0.01	0.01%	0.01	0.01%	**0.74**	**0.82%**
Polystyrene #6	0.48	0.54%	0.20	0.22%	0.01	0.01%	0.02	0.02%	0.01	0.01%			**0.71**	**0.79%**
Coffee Cups	0.01	0.01%	0.37	0.41%			0.02	0.02%	0.01	0.01%	0.01	0.01%	**0.40**	**0.45%**
Electronic Waste			0.38	0.42%									**0.38**	**0.42%**
Moulded Pulp			0.20	0.22%			0.14	0.16%					**0.34**	**0.38%**
Plastic Strapping			0.30	0.34%									**0.30**	**0.34%**
Glass					0.26	0.29%	0.01	0.01%					**0.27**	**0.30%**
PPE	0.01	0.01%	0.17	0.18%			0.01	0.01%			0.01	0.01%	**0.18**	**0.20%**
Steel Cans	0.14	0.16%	0.02	0.02%									**0.16**	**0.18%**
Textiles	0.08	0.09%	0.01	0.01%			0.01	0.01%					**0.09**	**0.10%**
Styrofoam			0.05	0.06%									**0.05**	**0.06%**
Gable Top Containers	0.01	0.01%	0.03	0.03%			0.01	0.01%					**0.05**	**0.05%**
Other Plastics #7	0.01	0.01%	0.01	0.01%			0.01	0.01%	0.01	0.01%			**0.03**	**0.03%**
Batteries							0.02	0.02%					**0.02**	**0.02%**
Newspaper			0.02	0.02%									**0.02**	**0.02%**
Composite Cans	0.01	0.01%											**0.01**	**0.01%**
Scrap Metal							0.01	0.01%					**0.01**	**0.01%**
Total	**14.00**	**15.64%**	**50.80**	**56.74%**	**4.55**	**5.08%**	**14.83**	**16.56%**	**2.78**	**3.10%**	**2.58**	**2.88%**	**89.53**	**100.00%**

Notable observations are described below:

- **Classrooms** - generated the highest sample mass (56.74% of total sample mass) which consisted primarily of fine paper (11.82% of total sample mass), PET #1 (11.06% of total sample mass), cardboard (7.26%), LDPE #4 plastic (5.81%) and non-recyclables (5.29%).
- **Hall** - generated 16.56% of the total sample mass which consisted primarily of PET #1 (5%) and organics (3.55%).
- **Cafeteria** - generated 15.64% of the total sample mass, which consisted primarily of organics (6.17%), LDPE #4 plastic (2.68%) and PET #1 (2.41%).
- **Gym** - generated 5.08% of the total sample mass which consisted primarily of non-recyclables (2.84%) and PET #1 (1.37%).

4.3 Sample Composition

The contamination rates for the sampled streams were as follows: Garbage stream - 33.38%, Red Box stream - 15.23% and Blue Box stream - 34.66%. The figures below show the contamination rate by the sampled stream and functional area.

Figure 1a: Contamination Rate by Sampled Stream

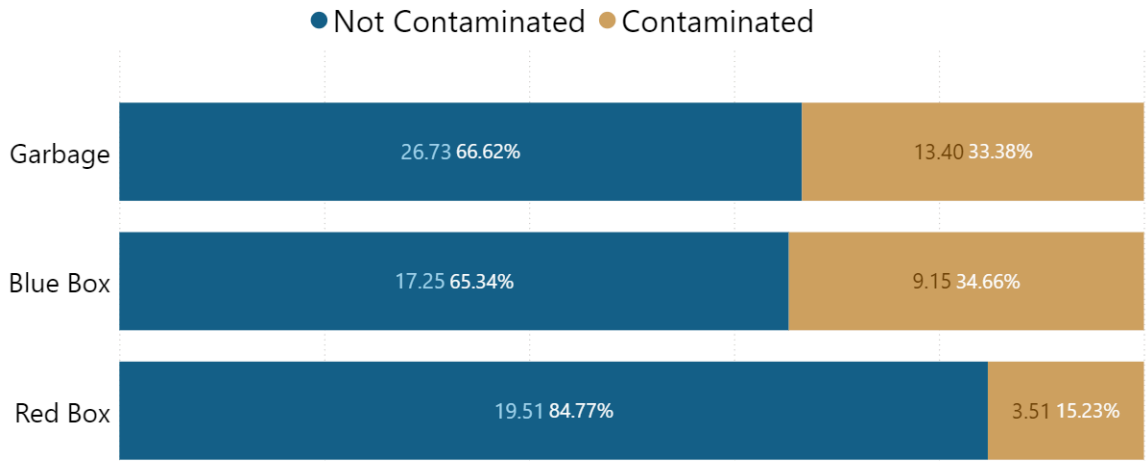
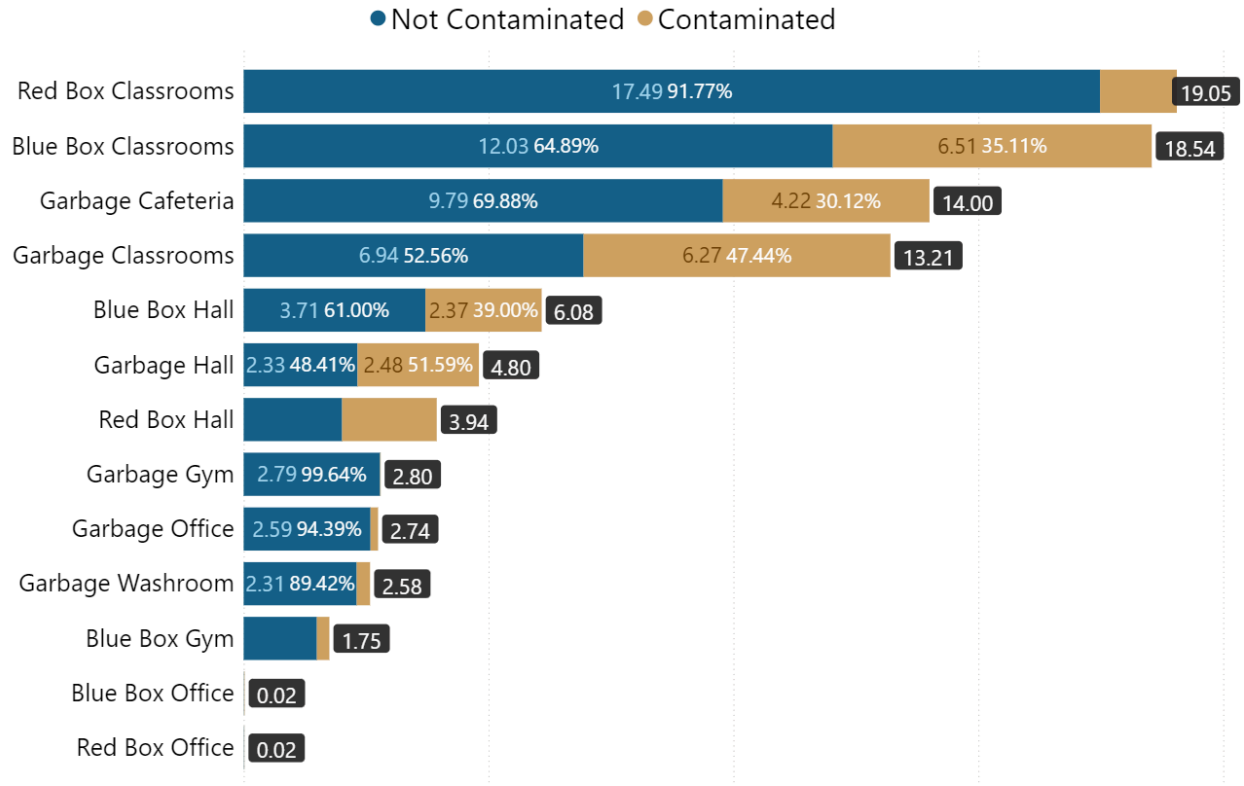


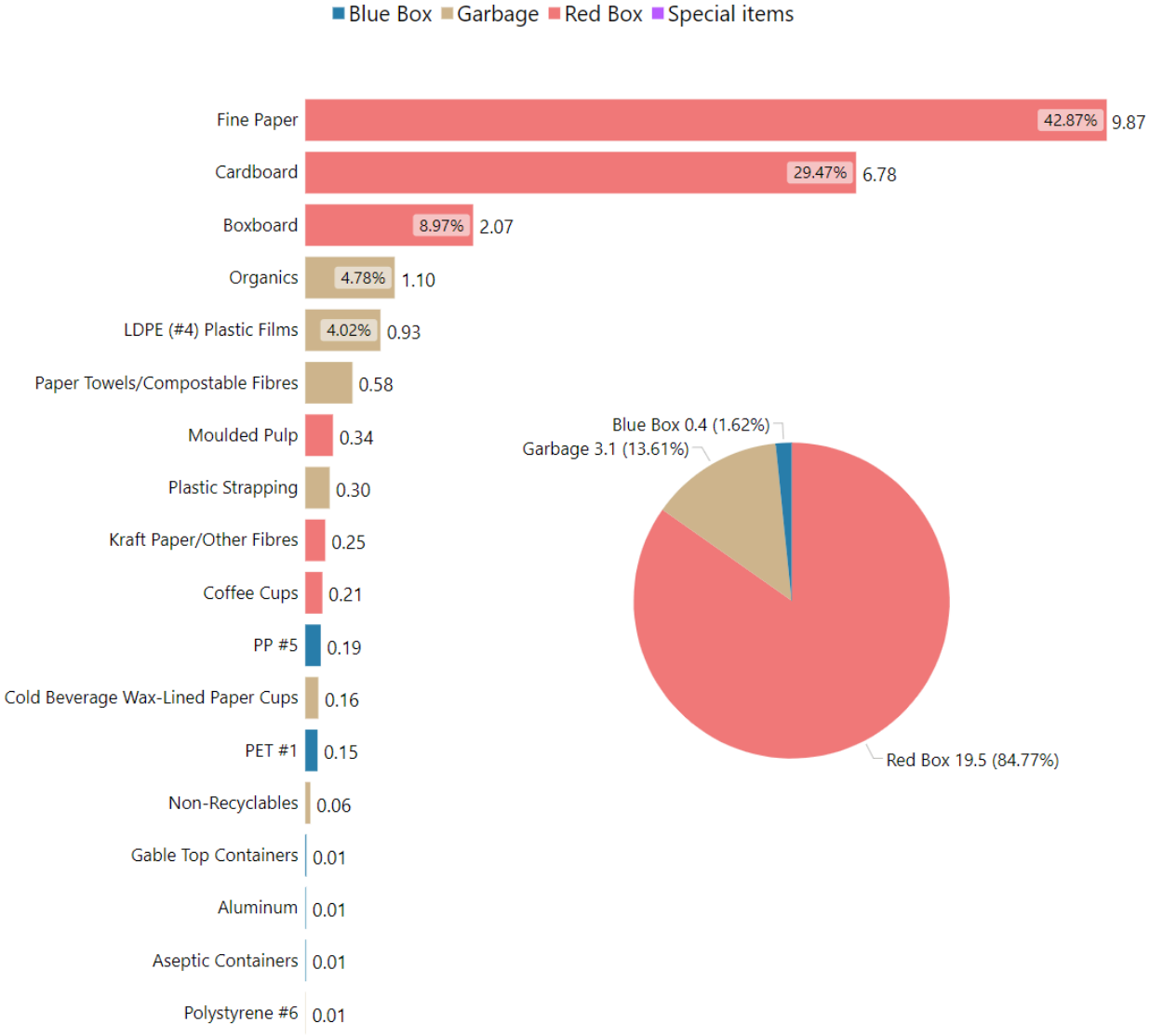
Figure 2a: Contamination Rate by Sampled Stream and Functional Area



4.3.1 Red Box Sample Composition and Contamination

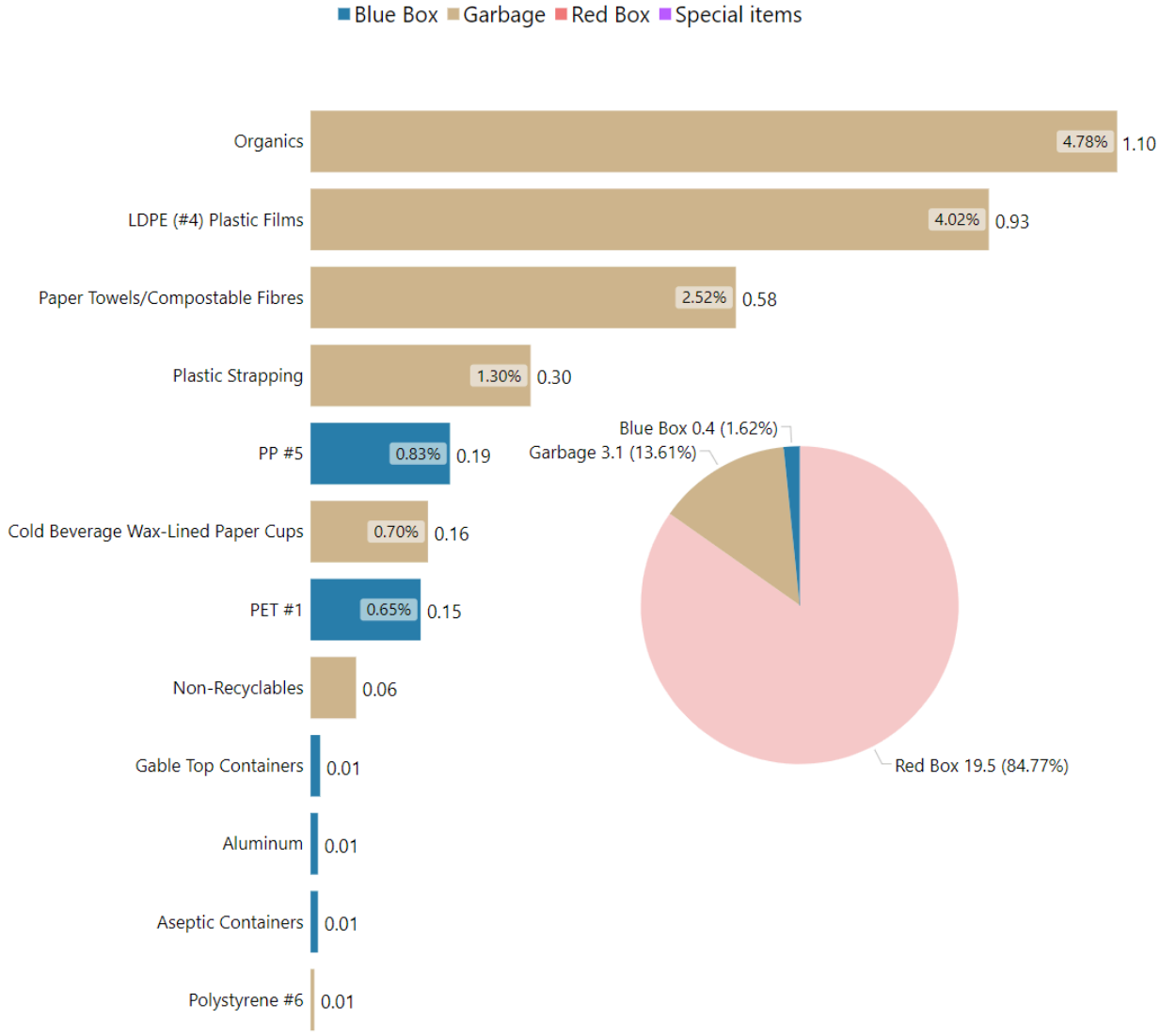
The Red Box sample consisted of 84.77% Red Box material, 13.61% Garbage material and 1.62% Blue Box material. The sample composition is shown in the figure below.

Figure 2a: Red Box Sample Composition
(kg and % of sample stream)



Roughly 15% of the Red Box sample was contaminated with Blue Box material or garbage. The breakdown of contamination is shown in the figure below.

Figure 2b: Red Box Sample Contamination (kg and % of sample stream)



Notable Observations

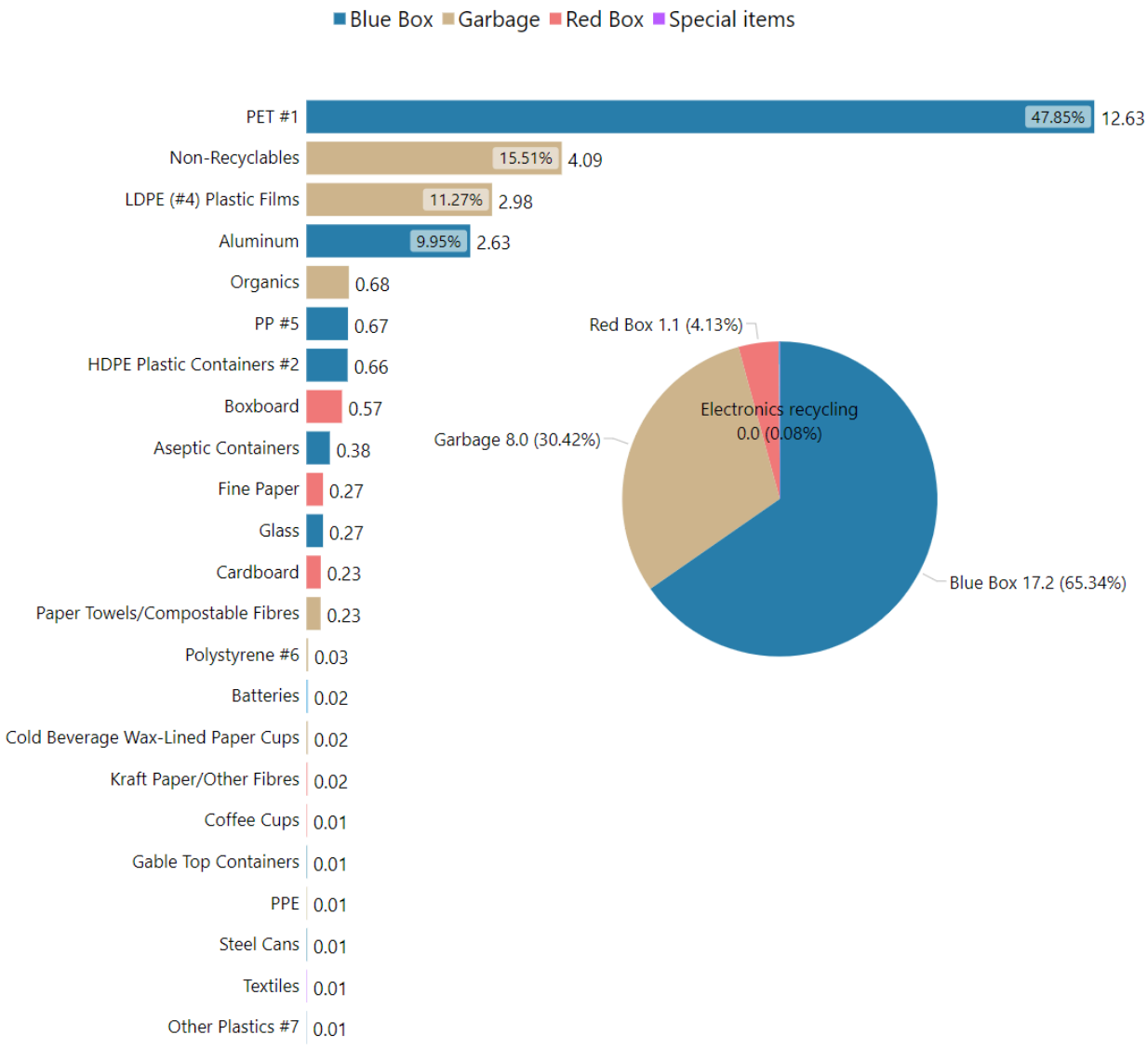
- The Red Box sample consisted of 84.77% Red Box material, 13.61% Blue Box material and 1.62% Garbage material.
- 42.87% of the Red Box sample consisted of fine paper, 29.47% consisted of cardboard, 8.97% consisted of boxboard, 4.78% consisted of organics, and 4.02% consisted of LDPE #4 plastic film.
- Roughly 15% of the Red Box sample was contaminated with Blue Box material or garbage. Contamination in the Red Box stream consisted primarily of the following materials:
    - Organics - 4.78%
    - LDPE #4 plastic film - 4.02%
    - Paper towels/compostable fibres - 2.52%

- Plastic strapping - 1.3%
- PP#5 - 0.83%

4.3.2 Blue Box Sample Composition and Contamination

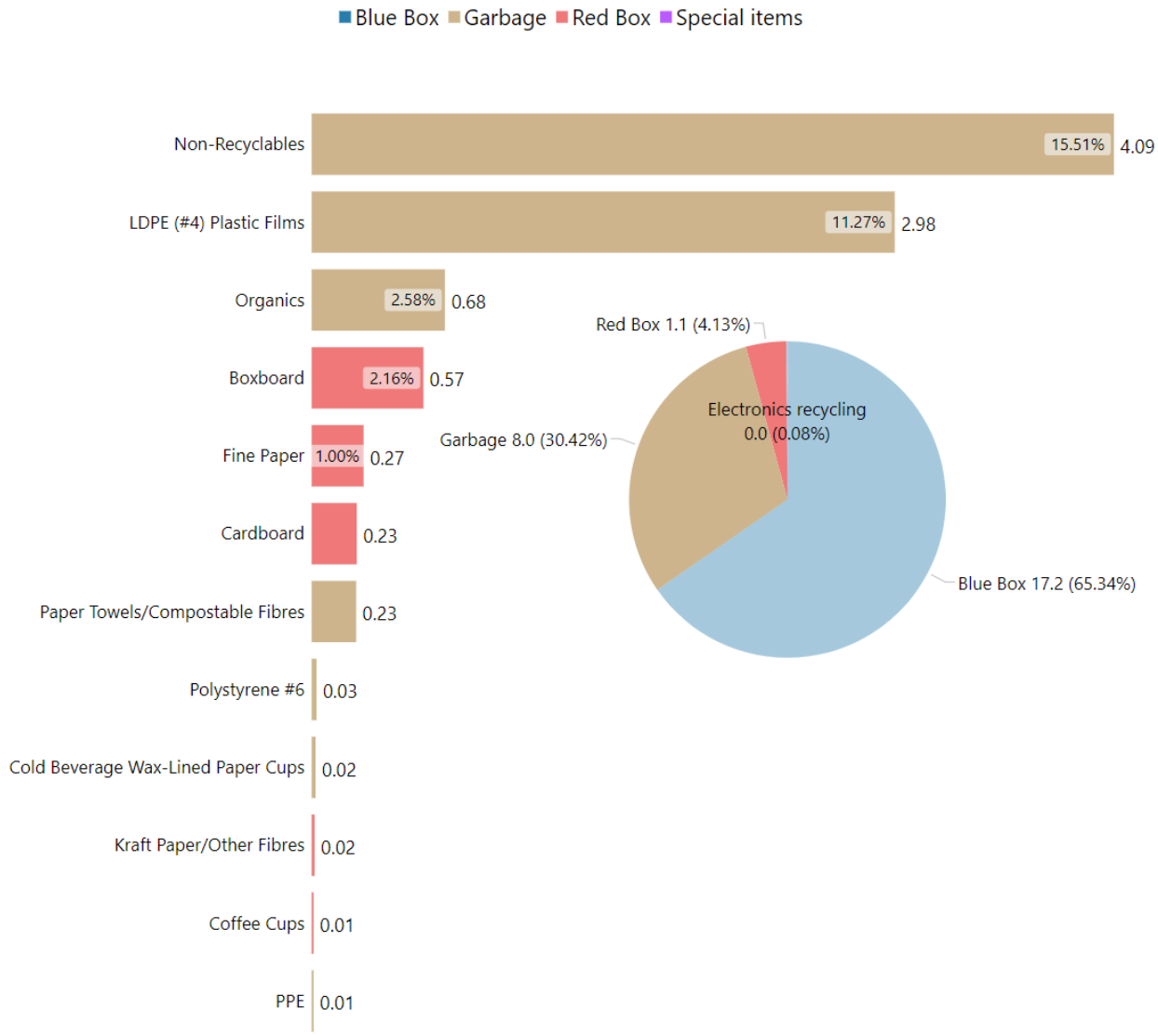
The Blue Box sample consisted of 65.34% Blue Box material, 30.42% garbage material and 4.13% Red Box material and 0.08% Electronics. The sample composition is shown in the figure below.

Figure 3a: Blue Box Sample Composition
(kg and % of sample stream)



Roughly 34% of the Blue Box sample was contaminated with garbage, Red Box material, or Electronics. The breakdown of contamination is shown in the figure below.

Figure 3b: Blue Box Sample Contamination
(% of total sample mass and kg)



Notable Observations

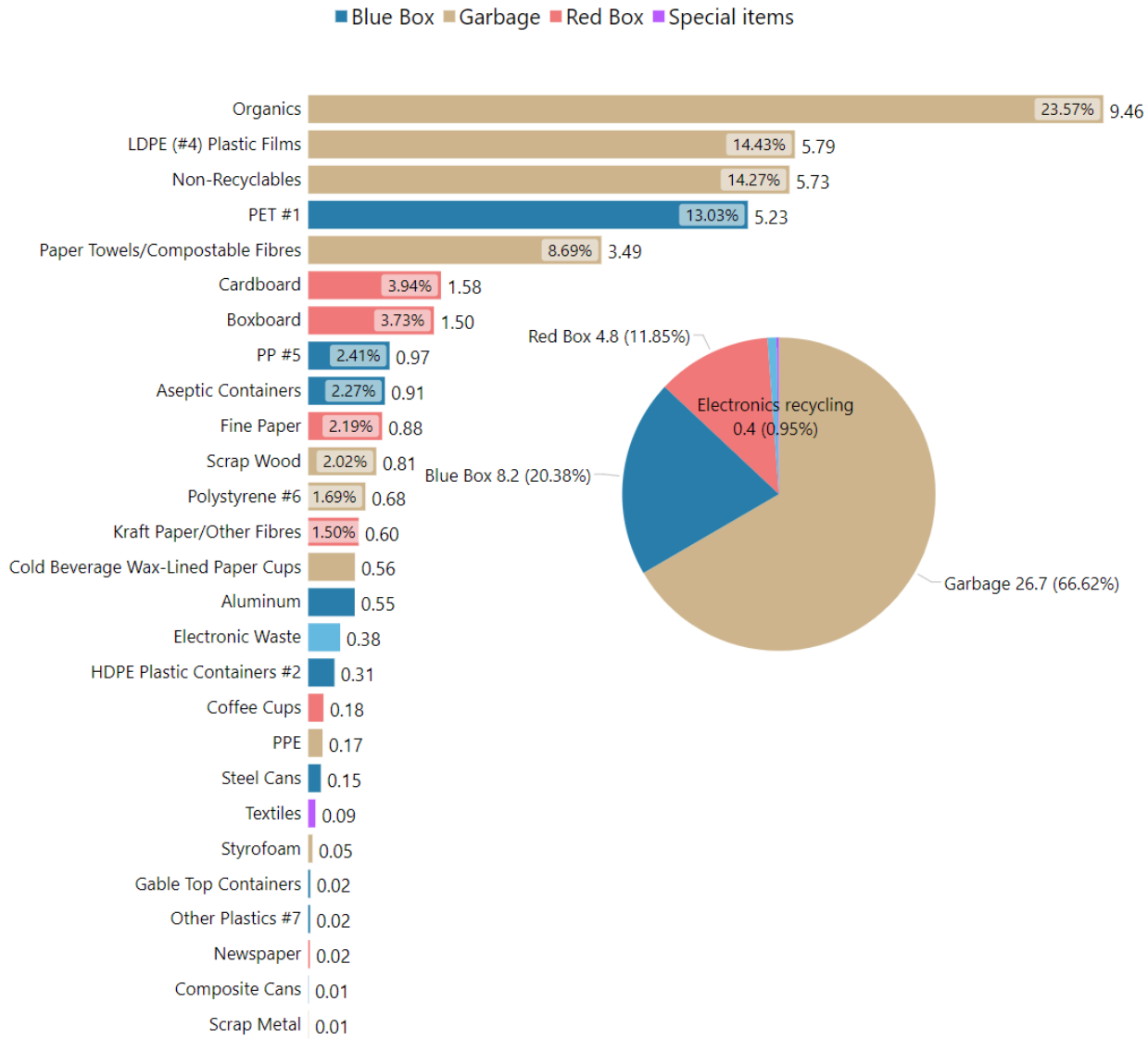
- The Blue Box sample consisted of 65.34% Blue Box material, 30.42% garbage material and 4.13% Red Box material and 0.08% Electronics.
- 47.85% of the Blue Box sample consisted of PET #1, 15.51% consisted of non-recyclables, 11.27% consisted of LDPE #4 plastic, and 9.95% aluminum.
- Roughly 34% of the Blue Box sample was contaminated with garbage or Red Box material. Contamination in the Blue Box stream consisted of the following materials:
    - Non-recyclables - 15.51%
    - LDPE #4 plastic film - 11.27%
    - Organics - 2.58%
    - Boxboard - 2.16%

- Fine paper - 1%

4.3.3 Garbage Sample Composition and Contamination

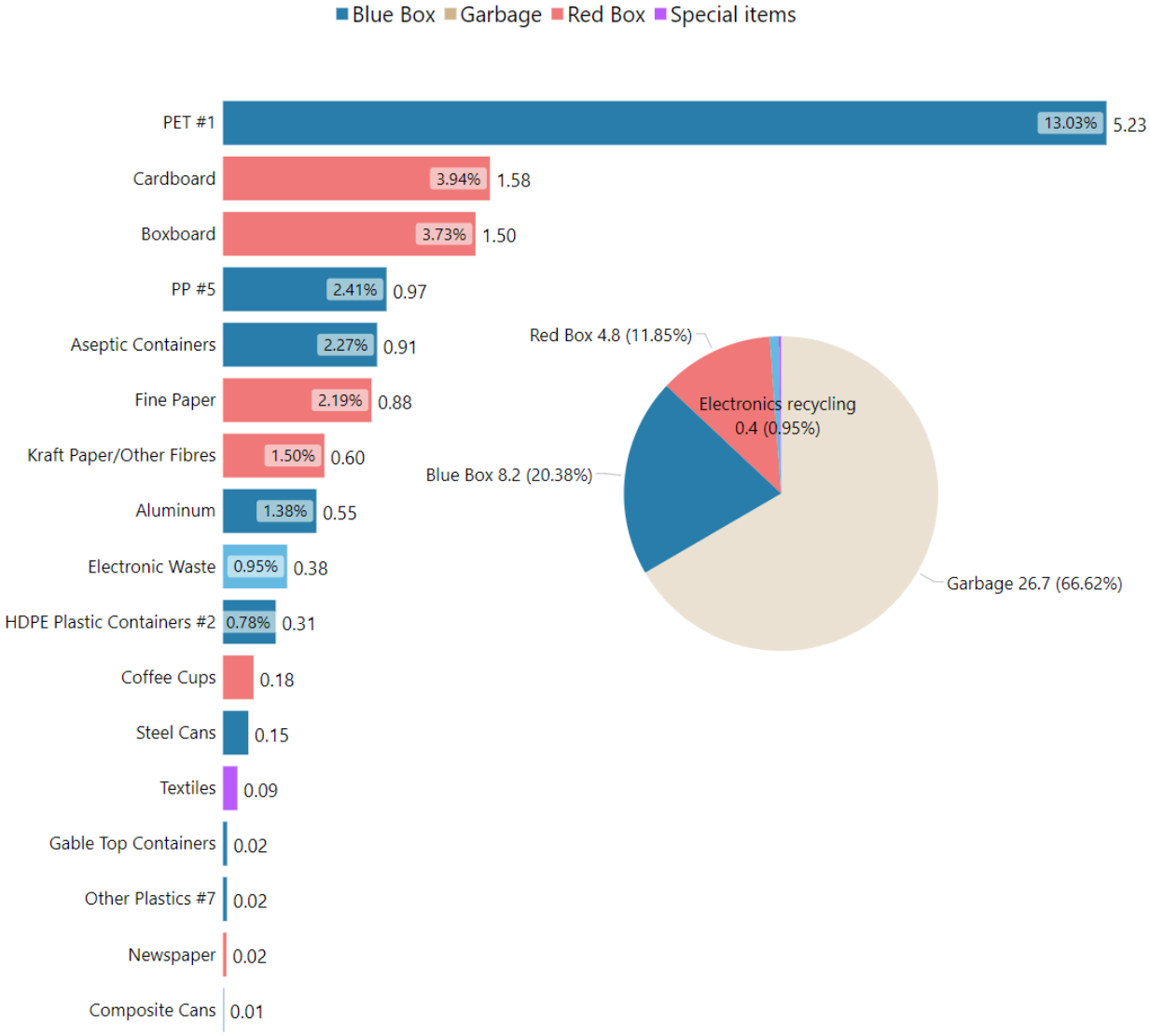
The garbage sample consisted of 66.62% garbage material, 20.38% Blue Box material, 11.85% Red Box material, 0.95% Electronics, and 0.21% Special items. The sample composition is shown in the figure below.

Figure 4a: Garbage Sample Composition
(% of total sample mass and kg)



Roughly 33% of the garbage stream sample was contaminated with Blue Box material, Red Box material, or Electronics/special Items. A breakdown of the contamination is shown in the figure below.

Figure 4b: Garbage Sample Contamination
(% of total sample mass and kg)



Notable Observations

- The garbage sample consisted of 66.62% garbage material, 20.38% Blue Box material, 11.85% Red Box material, 0.95% Electronics, and 0.21% Special items.
- The garbage sample consisted primarily of organics (23.57%), LDPE #4 plastic film (14.43%), non-recyclables (14.27%), PET #1 (13.03%), paper towels/compostable fibres (8.69%), cardboard (3.94%) and boxboard (3.73%).
- Roughly 33% of the garbage stream sample was contaminated with Blue Box material, Red Box material, and Electronics/special Items. Contamination in the garbage stream consisted primarily of the following materials:
    - PET #1 - 13.03%
    - Cardboard - 3.94%
    - Boxboard - 3.7%
    - PP #5 - 2.41%

- Aseptic containers - 2.27%
- Fine paper - 2.19%
- Kraft paper/other fibres - 1.5%

4.4 Recyclables in the Garbage Stream

Based on the waste sample composition analysis for the garbage and organics streams, Mandatory Recyclables and Other Recyclables were identified in the garbage stream. The garbage sample consisted of 7.93% Mandatory Recyclables, 25.45% Other Recyclables, and 66.62% Other (Non-Recyclable) material.

A description of the recyclable materials subject to O.Reg. 103/94 is provided below.

Mandatory Recyclables

O.Reg.193/04 requires that hospitals source separate the following materials (at a minimum):

- Aluminum food and beverage cans
- Cardboard (corrugated)
- Fine paper
- Glass food and beverage bottles/jars
- Newsprint
- Steel food and beverage cans

Other Recyclables

This includes any material eligible for recycling or that can be diverted from landfills. Other Recyclables include the following materials:

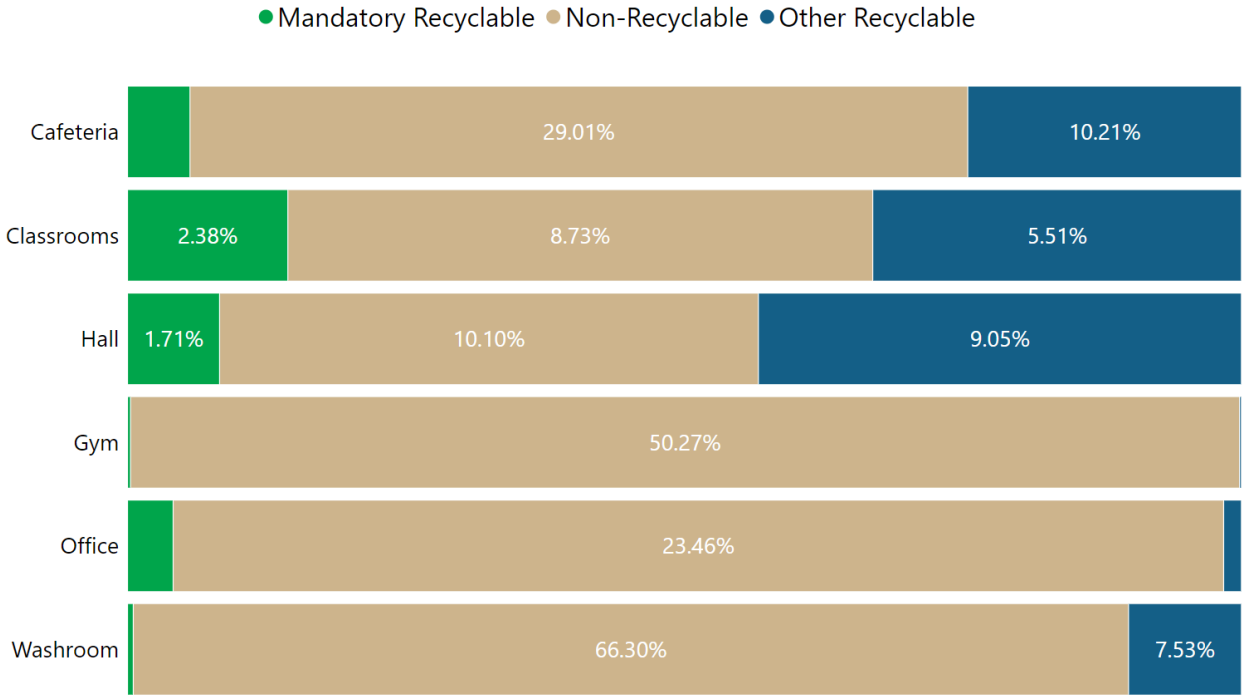
- Aseptic containers
- Batteries
- Boxboard
- Coffee Cups
- Composite Cans
- Electronics Waste
- Gable top containers
- HDPE #2 plastic containers
- Kraft paper/other fibres
- Lightbulbs
- Molded pulp
- Other plastics #7
- PET #1
- PP #5
- Printer toner/cartridges
- Scrap wood
- Scrap metal
- Textiles

Other (Non-Recyclables)

Includes all other non-recyclable materials.

Below is an analysis of the garbage sample composition by material and material type (Mandatory Recyclables, Other Recyclables, and Non-Recyclables).

Figure 5: Ratio of Recyclables in Garbage Stream by Type of Recyclable Organized by Functional Area



The breakdown of recyclables in the garbage stream by material is shown in the figures below.

Table 4: Breakdown of Mandatory Recyclables in Garbage Sample by Material (in kg and % of garbage sample mass)

Sampled Stream	Garbage	
O.Reg 103/94 Type	kg	%
Mandatory Recyclable	**3.18**	**7.93%**
Cardboard	1.58	3.94%
Fine Paper	0.88	2.19%
Aluminum	0.55	1.38%
Steel Cans	0.15	0.37%
Newspaper	0.02	0.05%
Total	**3.18**	**7.93%**

Table 5: Breakdown of Other Recyclables in Garbage Sample by Material (in kg and % of garbage sample mass)

Sampled Stream	Garbage	
O.Reg 103/94 Type	kg	%
Other Recyclable	**10.22**	**25.45%**
PET #1	5.23	13.03%
Boxboard	1.50	3.73%
PP #5	0.97	2.41%
Aseptic Containers	0.91	2.27%
Kraft Paper/Other Fibres	0.60	1.50%
Electronic Waste	0.38	0.95%
HDPE Plastic Containers #2	0.31	0.78%
Coffee Cups	0.18	0.45%
Textiles	0.09	0.21%
Gable Top Containers	0.02	0.06%
Other Plastics #7	0.02	0.06%
Composite Cans	0.01	0.01%
Total	**10.22**	**25.45%**

Notable observations are discussed below:

- The garbage sample consisted of 7.93% Mandatory Recyclables, 25.45% Other Recyclables, and 66.62% Other (Non-Recyclable) material.
- The Mandatory Recyclables in the garbage stream consisted of (in % of total sample mass):
    - Cardboard - 3.94%
    - Fine paper - 2.19%
    - Aluminum - 1.38%
    - Steel cans - 0.37%
    - Newspaper - 0.05%
- The Other Recyclables in the garbage stream consisted primarily of:
    - PET #1 - 13.03%
    - Boxboard - 3.73%
    - PP#5 - 2.41%
    - Aseptic containers - 2.27%
    - Kraft paper/other fibres - 1.5%

4.5 Estimated Annual Quantities Generated

The annual quantity was calculated using the following equation, based on 194 days in the school year and the sample mass generated over a one-day sampling period.

Estimated Annual Quantity = Number of days in school year x sample mass

Each material's estimated annual quantities were calculated and provided in the table below.

Table 6: Estimated Annual Quantities by Material

Divertible Material	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Landfill Quantity (MT)	Total Generated (MT)	%
Riverside Secondary School	**4.34**	**5.07**	**7.79**	**17.19**	**100.00%**
PET #1	0.03	2.45	1.01	3.49	20.33%
Organics	0.21	0.13	1.84	2.18	12.68%
Fine Paper	1.91	0.05	0.17	2.14	12.42%
Non-Recyclables	0.01	0.79	1.11	1.92	11.15%
LDPE (#4) Plastic Films	0.18	0.58	1.12	1.88	10.94%
Cardboard	1.32	0.04	0.31	1.67	9.69%
Paper Towels/Compostable Fibres	0.11	0.04	0.68	0.83	4.85%
Boxboard	0.40	0.11	0.29	0.80	4.66%
Aluminum	0.00	0.51	0.11	0.62	3.60%
PP #5	0.04	0.13	0.19	0.35	2.06%
Aseptic Containers	0.00	0.07	0.18	0.25	1.46%
HDPE Plastic Containers #2	0.00	0.13	0.06	0.19	1.10%
Kraft Paper/Other Fibres	0.05	0.00	0.12	0.17	0.97%
Scrap Wood	0.00	0.00	0.16	0.16	0.91%
Cold Beverage Wax-Lined Paper Cups	0.03	0.00	0.11	0.14	0.83%
Polystyrene #6	0.00	0.00	0.13	0.14	0.80%
Coffee Cups	0.04	0.00	0.04	0.08	0.45%
Electronic Waste	0.00	0.00	0.07	0.07	0.43%
PPE	0.00	0.00	0.03	0.03	0.20%
Steel Cans	0.00	0.00	0.03	0.03	0.18%
Textiles	0.00	0.00	0.02	0.02	0.10%
Styrofoam	0.00	0.00	0.01	0.01	0.06%
Gable Top Containers	0.00	0.00	0.00	0.01	0.05%
Other Plastics #7	0.00	0.00	0.00	0.01	0.03%
Newspaper	0.00	0.00	0.00	0.00	0.02%
Composite Cans	0.00	0.00	0.00	0.00	0.01%
Scrap Metal	0.00	0.00	0.00	0.00	0.01%
Total	**4.34**	**5.07**	**7.79**	**17.19**	**100.00%**

Notable Observations are discussed below:

- 17.19 MT of material are expected to be generated annually of which consists of the following materials:
    - PET #1 - 3.49 MT
    - Organics - 2.18 MT
    - Fine paper - 2.14 MT
    - Non-recyclables - 1.92 MT
    - LDPE #4 plastic film - 1.88 MT
    - Cardboard - 1.67 MT

5.0 Performance Metrics

5.1 Waste Diversion Rate

Waste diversion is the percentage of waste materials a facility diverts from landfills due to reducing, reuse and recycling (3Rs) programs versus the total amount of waste generated (3Rs plus landfill waste). The Ministry of the Environment, Conservation and Parks defines the Waste Diversion rate calculation as follows:

$$\text{Waste Diversion Rate} = \frac{\text{Total Waste Diverted (3Rs)}}{\text{Total Waste Generated}} \times 100$$

Table 7: Waste Diversion Rate

Year	Garbage Annual Quantity (MT)	Red Box Annual Quantity (MT)	Blue Box Annual Quantity (MT)	Total Diverted (MT)	Total Generated (MT)	Waste Diversion Rate
2024						
Riverside Secondary School	7.79	4.34	5.07	9.40	17.19	54.71%

The 2024 **waste diversion rate was calculated to be 54.71%** (below the provincial objective of 60%) based on 9.4 MT of diverted waste and 17.19 MT of total waste generated.

5.2 Capture Rate

The capture rate is the proportion of divertible waste materials successfully diverted from disposal compared to the total amount of divertible waste materials generated. It measures the effectiveness of existing recycling programs.

The Recycling Council of Ontario defines the Capture Rate calculation as follows:

$$\text{Capture Rate} = \frac{\text{Total Divertible Material Captured (3Rs)}}{\text{Total Divertible Material Generated}} \times 100$$

Below are the capture rates for all divertible materials included in existing waste diversion programs at the Site.

Table 8: Capture Rates for Diversion Programs

Divertible Material	Landfill Quantity (MT)	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Total Generated (MT)	Capture Rate
Riverside Secondary School					
Blue Box	1.59	0.07	3.29	4.95	67.97%
Red Box	0.92	3.72	0.21	4.85	80.99%
Electronics recycling	0.07	0.00	0.00	0.07	0.00%
Special items	0.02	0.00	0.00	0.02	8.60%
Total	**2.60**	**3.79**	**3.51**	**9.90**	**73.74%**

The overall **Capture Rate is 73.74%** based on a total diverted quantity of 7.3 MT and a total potential divertible quantity of 9.9 MT. The Blue Box capture rate was 68% and Red Box capture rate was 81%.

6.0 Waste Audit Summary and Waste Reduction Work Plan

Refer to Appendix F for the Waste Audit Summary and the Waste Reduction Work Plan.

According to O.Reg.102/94, the Waste Reduction Work Plan or a plan summary must be posted at the facility where employees can review it. If a summary is posted, the entire Work Plan should also be made available for review by any employee upon request.

7.0 Findings and Conclusions

The conclusions discussed below are based on the waste audit findings. It should be noted that the conclusions and recommendations provided in this report are based on the waste audit sample results, which are considered representative of the annual quantities for this report. The estimates in this report have yet to account for fluctuations in waste quantities generated daily.

<u>Sample Composition</u>

- The garbage stream sample had the highest sample mass (44.82%) followed by Red Box (25.7%) and Blue Box (29.48%).

Composition By Waste Stream

- **Garbage Stream** - organics in the garbage stream had the greatest overall sample mass (10.57% of total sample mass), followed by LDPE #4 plastic (6.47% of total sample mass), non-recyclables (6.39%), and PET #1 (5.84% of total sample mass).

- **Red Box** - consisted primarily of fine paper (9.87kg, 11.02% of total sample mass) and cardboard (6.78kg, 7.57% of total sample mass).
- **Blue Box** - consisted primarily of PET #1 (12.63kg, 14.11% of total sample mass) and non-recyclable material (4.09kg, 4.57% of total sample mass).

Composition by Functional Area

- **Classrooms** - generated the highest sample mass (56.74% of total sample mass), which consisted primarily of fine paper (11.82% of total sample mass), PET #1 (11.06% of total sample mass), cardboard (7.26%), LDPE #4 plastic (5.81%) and non-recyclables (5.29%).
- **Hall** - generated 16.56% of the total sample mass which consisted primarily of PET #1 (5%) and organics (3.55%).
- **Cafeteria** - generated 15.64% of the total sample mass which consisted primarily of organics (6.17%), LDPE #4 plastic (2.68%) and PET #1 (2.41%).
- **Gym** - generated 5.08% of the total sample mass which consisted primarily of non-recyclables (2.84%) and PET #1 (1.37%).

<u>Contamination</u>

- The contamination rates for the sampled streams were as follows: Garbage stream - 33.38%, Red Box stream - 15.23% and Blue Box stream - 34.66%.
- The **Red Box** sample consisted of 84.77% Red Box material, 13.61% Garbage material and 1.62% Blue Box material.
- Roughly 15% of the Red Box sample was contaminated with Blue Box material or garbage. **Red Box contamination** consisted primarily of the following materials:
    - Organics - 4.78%
    - LDPE #4 plastic film - 4.02%
    - Paper towels/compostable fibres - 2.52%
    - Plastic strapping - 1.3%
    - PP#5 - 0.83%
- The **Blue Box** sample consisted of 65.34% Blue Box material, 30.42% garbage material 4.13% Red Box material and 0.08% Electronics
- Roughly 34% of the Blue Box sample was contaminated with garbage or Red Box material. **Blue Box** contamination consisted primarily of the following materials:
    - Non-recyclables - 15.51%
    - LDPE #4 plastic film - 11.27%
    - Organics - 2.58%
    - Boxboard - 2.16%
    - Fine paper - 1%
- The **garbage sample c**onsisted of 66.62% garbage material, 20.38% Blue Box material, 11.85% Red Box material, 0.95% Electronics, and 0.21% Special items
- Roughly 33% of the garbage stream sample was contaminated with Blue Box material, Red Box material, and Electronics/Special Items. Garbage stream contamination consisted primarily of the following materials:
    - PET #1 - 13.03%
    - Cardboard - 3.94%
    - Boxboard - 3.7%
    - PP #5 - 2.41%

- Aseptic containers - 2.27%
- Fine paper - 2.19%
- Kraft paper/other fibres - 1.5%

Recyclables in the Garbage Stream

- The garbage sample consisted of 7.93% Mandatory Recyclables, 25.45% Other Recyclables, and 66.62% Other (Non-Recyclable) material.
- **Mandatory Recyclables** in the garbage stream consisted of (in % of total sample mass):
  - Cardboard - 3.94%
  - Fine paper - 2.19%
  - Aluminum - 1.38%
  - Steel cans - 0.37%
  - Newspaper - 0.05%
- **Other Recyclables** in the garbage stream consisted primarily of:
  - PET #1 - 13.03%
  - Boxboard - 3.73%
  - PP#5 - 2.41%
  - Aseptic containers - 2.27%
  - Kraft paper/other fibres - 1.5%

Estimated Annual Quantities Generated

- 17.19 MT of material are expected to be generated annually of which consists of the following materials:
  - PET #1 - 3.49 MT
  - Organics - 2.18 MT
  - Fine paper - 2.14 MT
  - Non-recyclables - 1.92 MT
  - LDPE #4 plastic film - 1.88 MT
  - Cardboard - 1.67 MT

Waste Diversion Rate

- The 2024 **waste diversion rate was calculated to be 54.71%** (below the provincial objective of 60%) based on 9.4 MT of diverted waste and 17.19 MT of total waste generated.

Capture Rate

- The overall **Capture Rate is 73.74%** based on a total diverted quantity of 7.3 MT and a total potential divertible quantity of 9.9 MT. The Blue Box capture rate was 68%, and the Red Box capture rate was 81%.

8 Recommendations

Based on the conclusions, the following recommendations are tied to the conclusions discussed in the previous section.

The Site diverts 54.71% of generated waste through existing programs, below the provincial objective of 60%. The capture rate is 73.74%. There are opportunities to improve the waste diversion rate and capture rate further.

8.1 Improve Existing Waste Diversion Programs

Improving the following existing diversion programs could improve waste diversion and capture rates.

Mandatory Recyclables

- **Cardboard — 0.31 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Red Box stream could **increase the waste diversion rate up to 2.3%** and **could increase the Red Box capture rate up to 6.4%.**
- **Fine paper — 0.17 MT** of material is estimated to be generated annually through the garbage stream. Diverting this through the Red Box stream could **increase the waste diversion rate up to 1.5%** and **could increase the Red Box capture rate up to 3.5%.**
- **Aluminum — 0.11 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Blue Box stream could **increase the waste diversion rate up to 0.6%** and **could increase the Blue Box capture rate up to 2.1%.**
- **Steel cans — 0.03 MT** of material is estimated to be generated annually through the garbage stream. Diverting this material through the existing Blue Box stream could **increase the waste diversion rate up to 0.4%** and **could increase the Blue Box capture rate up to 0.5%.**

Red Box and Blue Box Streams

- **PET #1 - 1.01 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Blue Box stream could **increase the waste diversion rate by up to%** and could **increase the Blue Box capture rate by up to%.**
- **Boxboard - 0.29 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Red Box stream could **increase the waste diversion rate by up to%** and could **increase the Red Box capture rate by up to%.**
- **PP#5 - 0.19 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing streams could **increase the waste diversion rate by up to%.**
- **Aseptic containers - 0.18 MT** of material is estimated to be generated annually through the garbage stream. Diverting this quantity through the existing Blue Box stream could **increase the waste diversion rate by up to%** and could **increase the Blue Box capture rate by up to%.**

8.2 Add Organics Diversion Programs

Organics generated in the garbage stream accounted for 1.84 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 11%**.

8.3 Dedicated Receptacles and Update Signage

Waste diversion rates could be improved by implementing dedicated receptacles with clear signage to encourage waste separation at the source. Provide dedicated receptacles with signage and pictograms as a clear message to staff and students to separate divertible materials from landfill waste at source. Pictograms can provide examples of the types of waste suitable for the waste collection stream. Divertible material should be consolidated into a centralized location and picked up by a dedicated contractor.

8.4 Promoting Culture

A committee is recommended to oversee waste reduction and sustainability and promote a culture of waste diversion. Educate students and staff on the importance of waste diversion and communicate the corporate goals for waste diversion and sustainability. Create a positive message around the benefits of waste diversion and the individual's role.

- Support and encourage purchasing and using “environmentally friendly,” reusable or recyclable materials, packaging, and/or recycled content.
- Ensure an Environmental Policy is visible in common areas throughout the building and continue to emphasize the facility’s commitment to environmental stewardship through its training program and green or environmental initiatives.
- Encourage staff and students to prioritize bringing reusable containers, water bottles, and coffee cups.
- Promote and highlight current environmental programs and efforts through newsletters, posters, and/or bulletin boards for waste management.

8.5 Continuous Monitoring and Process Improvement

Track year-over-year changes in waste diversion capture rates and communicate progress to staff and students to encourage further participation/engagement.

Continuous monitoring and reporting for this site annually and comparison with year-over-year changes would provide insight into trends, which can be used as a basis for policy decisions regarding solid waste management for future projects. Further refinements to programs/processes can be made, and adherence to provincial requirements can be achieved.

Appendices

Appendix A: List of Categories

Material Category	Description
1. Paper and Paper Products	
Fine Paper	Includes mixed fine papers, writing paper, office paper, copy paper, bills and statements, ad mail, lottery tickets, receipts, envelopes, promotional cards, promotional calendars, printed information found within packaged products, etc. • Also includes softcover books, booklets, magazines, catalogues, calendars, flyers, and inserts.
Newsprint	Major daily and weekly newspapers and community newspapers. Does not include flyers and inserts.
Shredded Confidential Papers	Any paper that has been shredded.
Boxboard	Single-layered paperboard and fibre board with no corrugation. This includes cereal boxes, shoe boxes, cores from toilet paper, paper towels, gift wrap, etc.
Kraft Paper	Kraft paper bags and wrap, grocery or retail bags, potato bags, pet food bags, etc. Includes brown, white, and coloured kraft paper and bags. No bags with bonded plastic or foil lining.
Corrugated Cardboard	Waxed or unwaxed corrugated cardboard containers. Includes moulded pulp materials such as egg cartons, drink trays, other trays, etc.
Gable Top Containers	Polycoat containers with a gable-shaped top are used for milk, juice, some foods, etc.
Aseptic Containers	Tetra-pak-type polycoat packaging containers are used for juice, milk, soups and broths, alternative milk beverages, and alcoholic beverages.
Composite Cans	Spiral-wound cans with paper walls and plastic or metal tops or bottoms. They contain frozen juice, Pringles chips, dough, some raisins, etc.

Coffee Cups	All cups and containers used for hot/cold beverages and food (without a plastic oHot Primarily, hot/cold food and beverage containers are common in the fast food industry. Includes paper-based cups with a plastic lining, water cooler cups, freezer boxes, etc.
2. Plastic	
#1 Polyethylene Terephthalate (PET)	All PET #1 plastics. This includes clear or coloured thermoform packaging, beverage bottles, and non-beverage bottles used for food and non-food items such as dish soap, shampoo, mouthwash, window cleaner, and floor cleaner. ● Does not include Black Plastics.
#2 High-Density Polyethylene (HDPE)	All HDPE #2 plastics. Includes natural and coloured bottles, jugs, and containers for beverages, food items, and non-food items such as laundry soap, shampoo, bleach, vinegar, pill bottles, etc. ● Does not include Black Plastics.
#4 Low-Density Polyethylene (LDPE) Films	All #4 LDPE plastic films. This includes soft, "stretchy" PE plastic used for items such as produce bags, water bottle overwraps, garbage bags, kitchen liners, blue or clear recycling bags, sandwich and freezer bags, etc. ● Does not include Black Plastics.
#5 Polypropylene (PP)	All #5 PP plastics. Includes clear and coloured food containers, jugs, jars, take-out beverage cups, bottles, and jars for food items. ● Does not include Black Plastics.
#6 Non-Expanded Polystyrene (PS)	All Non-Expanded (rigid) #6 PS plastics. Includes clear or coloured rigid food trays, clamshells, cup lids, yogurt cups, CD and DVD cases only (no disk), etc. ● Does not include Black Plastics.
Other Recyclable Plastics (#3, 4, 7)	All other recyclable plastics (#3, 4, 7). Includes clear and coloured bottles, jugs, jars, and containers.
3. Glass/Metal	

Glass:	All clear and coloured glass. Includes bottles and containers for food, beverages, cosmetics, toiletries, household pharmaceutical products, candle jars, etc. • Does not include non-recyclable glass such as windowpane glass, plates, drinking glasses, figures, or incandescent light bulbs.
Aluminum	All aluminum containers and foils. Includes food and beverage containers, rigid aluminum trays (pie plates, baking trays, etc.), empty aerosol containers, and containers for hair products, tubes, etc. • Does not include full or partially full pressurized cans.
Steel	All steel containers. Includes food and beverage containers, empty spray cans (for cooking oil, whipped cream, etc.), and empty paint cans. • Does not include full or partially full pressurized cans.
4. Organics	
Organic Food Waste	All edible and non-edible organic waste from food items. Includes untouched and leftover bakery, meat & fish, dried food, fruits & vegetables, dairy, and other foods.
Other Organics:	All other organic materials that are not derived from food items. Includes yard waste, grass clippings, small wood waste, pet waste, diapers and sanitary products, certified compostable plastic bin liners, and other compostable papers.
Compostable fibres	Include paper towels, paper napkins, toilet paper, facial tissues, etc.
5. Operational waste	
Other metals,	Scrap metals, copper pipes, hardware, etc. Includes multi-material items that are mainly metal.

Non-Treated Wood	Non-treated wood materials. Includes skids/pallets, wooden furniture, etc. • Does not include branches, brush, or wood chips.
Batteries	All single-use and rechargeable batteries. Includes Alkaline-Manganese, Lithium, Silver Oxide, Zinc Air, Zinc-Carbon, etc.
Printer Toners	All ink cartridges and printer toners.
E-Waste	All waste is from electrical and electronic equipment (WEEE). Anything that is battery-operated and/or can be plugged into an electrical outlet. Includes computer/IT equipment, telecom equipment, TV & audio equipment, small kitchen appliances, wires/chargers /adapters, cocks, gadgets, etc.
Plastic Strapping	This is All-Plastic Strapping material. It is used to bundle products for retail sales and can come in various colours and plastic materials.
6. Non-Recyclable Waste	
Non-Recyclable/Garbage	All other non-recyclable waste materials are not classified elsewhere. Includes hazardous waste, coffee cups, black plastics, and expanded polystyrene, all described below. Includes chip bags, furnace filters, laminated papers, rigid or durable plastics, non-recyclable glass, dust, single-use cleaning wipes, single-use coffee pods, plastic straws and cutlery, materials too small to process, etc.
Hazardous Wastes	All hazardous wastes are not classified elsewhere. Includes full or partially full pressurized cans, paints, and oil containers. • Also includes fluorescent light bulbs and tubes, medical sharps and syringes, mercury-containing devices, pharmaceuticals, antifreeze, fertilizers, solvents, pesticides, etc. • Also includes all other liquid or non-liquid items with signal words such as "Poison," "Danger," "Warning," "Caution," and "Precautionary Statements."

Cold Beverage Wax-Lined Cups	All cups and containers have a plastic or wax lining. Multiple-layered, primarily fibre, hot/cold food and beverage containers are common in the fast food industry. This includes paper-based cups with a plastic lining, water cooler cups, freezer boxes, etc.
Black Plastics	Includes all Black Plastics #1-7 and unmarked. • Also includes rigid, durable, and expanded Black Plastics and black plastic bags.
Expanded Polystyrene	This includes white, coloured, and black polystyrene foam packaging for food trays, clamshells, etc., as well as foam packaging for "peanuts" and foam blocks used to protect boxed products.

Appendix B: Scale Calibration Certificate

CANADIAN SCALE COMPANY LIMITED

CALIBRATION CERTIFICATE

DATE: July 05 2024 **SR #** 52342

CUSTOMER:
Waste Reduction Group
214 Merton St. # 101
Toronto ON

REMARKS

This is to certify that the following scale has been tested and verified in relation to the Standards maintained by **CANADIAN SCALE COMPANY LIMITED**, with test weights traceable to the Legal Metrology Laboratories of, Industry Canada and National Research Council, Canada.

Western model - EWH150
Capacity - 150 kg
S/N - 202104114

CANADIAN SCALE COMPANY LIMITED is an Authorized Service Provider of Measurement Canada

Technician's signature

wrg | waste reduction group Inc.
+416 823 4554 | admin@wastereductiongroup.ca

Measurement Canada Authorized Service Provider – Fournisseur de services autorisé de Mesures Canada

CANADIAN SCALE COMPANY LIMITED
305 Horner Avenue, Toronto, ON M8W 1Z4
1-800-461-0634 www.canscale.com

Appendix C: Detailed Sample Composition

(Note: higher intensity of **blue** highlighting indicates higher sample weight/percent)

Sampled Stream	Red Box						Blue Box								Garbage												Total	
Functional Area	Classrooms		Hall		Office		Classrooms		Gym		Hall		Office		Cafeteria		Classrooms		Gym		Hall		Office		Washroom			
O.Reg 103/94 Type	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%
Non-Recyclable	**1.24**	**1.38%**	**1.89**	**2.11%**	**0.01**	**0.01%**	**5.68**	**6.34%**	**0.04**	**0.04%**	**2.32**	**2.59%**	**0.01**	**0.01%**	**9.79**	**10.93%**	**6.94**	**7.75%**	**2.79**	**3.11%**	**2.33**	**2.60%**	**2.59**	**2.89%**	**2.31**	**2.58%**	**37.90**	**42.32%**
Organics			1.10	1.23%			0.16	0.18%			0.52	0.58%			5.52	6.17%	0.80	0.89%			1.56	1.74%	0.78	0.87%	0.80	0.89%	**11.24**	**12.55%**
Non-Recyclables	0.06	0.06%	0.01	0.01%			2.67	2.98%			1.43	1.59%			0.70	0.78%	2.02	2.25%	2.54	2.84%	0.30	0.34%	0.01	0.01%	0.16	0.18%	**9.88**	**11.03%**
LDPE (#4) Plastic Films	0.48	0.54%	0.44	0.49%	0.01	0.01%	2.60	2.90%	0.03	0.03%	0.34	0.38%	0.01	0.01%	2.40	2.68%	2.12	2.37%	0.24	0.27%	0.34	0.38%	0.21	0.23%	0.48	0.54%	**9.69**	**10.82%**
Paper Towels/Compostable Fibres	0.40	0.45%	0.18	0.20%			0.22	0.25%			0.01	0.01%			0.24	0.27%	0.80	0.89%			0.01	0.01%	1.58	1.76%	0.86	0.96%	**4.30**	**4.80%**
Scrap Wood																	0.81	0.90%									**0.81**	**0.90%**
Cold Beverage Wax-Lined Paper Cups			0.16	0.18%			0.01	0.01%	0.01	0.01%	0.01	0.01%			0.44	0.49%	0.01	0.01%			0.10	0.11%	0.01	0.01%	0.01	0.01%	**0.74**	**0.82%**
Polystyrene #6			0.01	0.01%			0.02	0.02%			0.01	0.01%			0.48	0.54%	0.18	0.20%	0.01	0.01%	0.01	0.01%	0.01	0.01%			**0.71**	**0.79%**
Plastic Strapping	0.30	0.34%																									**0.30**	**0.34%**
PPE							0.01	0.01%			0.01	0.01%			0.01	0.01%	0.16	0.18%							0.01	0.01%	**0.18**	**0.20%**
Styrofoam																	0.05	0.06%									**0.05**	**0.06%**
Scrap Metal																					0.01	0.01%					**0.01**	**0.01%**
Other Recyclable	**2.46**	**2.75%**	**0.76**	**0.85%**	**0.01**	**0.01%**	**10.49**	**11.71%**	**1.23**	**1.37%**	**3.24**	**3.62%**	**0.01**	**0.01%**	**3.44**	**3.85%**	**4.38**	**4.89%**	**0.01**	**0.01%**	**2.09**	**2.33%**	**0.04**	**0.05%**	**0.26**	**0.29%**	**28.41**	**31.73%**
PET #1	0.14	0.16%	0.01	0.01%			8.46	9.45%	1.22	1.36%	2.95	3.29%	0.01	0.01%	2.16	2.41%	1.30	1.45%	0.01	0.01%	1.52	1.70%	0.01	0.01%	0.24	0.27%	**18.01**	**20.12%**
Boxboard	1.72	1.92%	0.34	0.38%	0.01	0.01%	0.56	0.63%			0.01	0.01%			0.16	0.18%	1.10	1.23%			0.22	0.25%	0.01	0.01%	0.01	0.01%	**4.13**	**4.61%**
PP #5	0.18	0.20%	0.01	0.01%			0.66	0.74%	0.01	0.01%					0.24	0.27%	0.58	0.65%			0.14	0.16%	0.01	0.01%			**1.82**	**2.04%**
Aseptic Containers	0.01	0.01%	0.01	0.01%			0.36	0.40%	0.01	0.01%	0.01	0.01%			0.34	0.38%	0.56	0.63%			0.01	0.01%			0.01	0.01%	**1.30**	**1.45%**
HDPE Plastic Containers #2							0.42	0.47%			0.24	0.27%			0.28	0.31%	0.01	0.01%			0.01	0.01%	0.01	0.01%	0.01	0.01%	**0.97**	**1.09%**
Kraft Paper/Other Fibres	0.01	0.01%	0.24	0.27%			0.01	0.01%			0.01	0.01%	0.01	0.01%	0.16	0.18%	0.26	0.29%			0.18	0.20%					**0.86**	**0.96%**
Coffee Cups	0.20	0.22%	0.01	0.01%			0.01	0.01%							0.01	0.01%	0.16	0.18%			0.01	0.01%	0.01	0.01%	0.01	0.01%	**0.40**	**0.45%**
Electronic Waste																	0.38	0.42%									**0.38**	**0.42%**
Moulded Pulp	0.20	0.22%	0.14	0.16%																							**0.34**	**0.38%**
Textiles											0.01	0.01%			0.08	0.09%	0.01	0.01%									**0.09**	**0.10%**
Gable Top Containers	0.01	0.01%	0.01	0.01%			0.01	0.01%							0.01	0.01%	0.01	0.01%			0.01	0.01%					**0.05**	**0.05%**
Other Plastics #7											0.01	0.01%			0.01	0.01%	0.01	0.01%					0.01	0.01%			**0.03**	**0.03%**
Batteries											0.02	0.02%															**0.02**	**0.02%**
Composite Cans															0.01	0.01%											**0.01**	**0.01%**
Mandatory Recyclable	**15.36**	**17.16%**	**1.29**	**1.44%**	**0.01**	**0.01%**	**2.38**	**2.66%**	**0.49**	**0.54%**	**0.53**	**0.59%**	**0.01**	**0.01%**	**0.77**	**0.86%**	**1.89**	**2.11%**	**0.01**	**0.01%**	**0.39**	**0.44%**	**0.11**	**0.12%**	**0.01**	**0.01%**	**23.23**	**25.95%**
Fine Paper	9.56	10.68%	0.30	0.34%	0.01	0.01%	0.26	0.29%			0.01	0.01%			0.01	0.01%	0.76	0.85%			0.01	0.01%	0.10	0.11%	0.01	0.01%	**11.01**	**12.30%**
Cardboard	5.80	6.48%	0.98	1.09%					0.22	0.25%	0.01	0.01%			0.50	0.56%	0.70	0.78%			0.38	0.42%					**8.59**	**9.59%**
Aluminum			0.01	0.01%			2.11	2.36%	0.01	0.01%	0.51	0.57%	0.01	0.01%	0.13	0.14%	0.40	0.45%	0.01	0.01%	0.01	0.01%	0.01	0.01%	0.01	0.01%	**3.19**	**3.56%**
Glass									0.26	0.29%	0.01	0.01%															**0.27**	**0.30%**
Steel Cans							0.01	0.01%							0.14	0.16%	0.01	0.01%									**0.16**	**0.18%**
Newspaper																	0.02	0.02%									**0.02**	**0.02%**
Total	**19.05**	**21.28%**	**3.94**	**4.40%**	**0.02**	**0.02%**	**18.54**	**20.71%**	**1.75**	**1.95%**	**6.08**	**6.80%**	**0.02**	**0.02%**	**14.00**	**15.64%**	**13.21**	**14.75%**	**2.80**	**3.12%**	**4.80**	**5.36%**	**2.74**	**3.06%**	**2.58**	**2.88%**	**89.53**	**100.00%**

Appendix D: Estimated Annual Quantities Generated and Capture Rates by Material

Divertible Material	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Landfill Quantity (MT)	Total Generated (MT)	%
Riverside Secondary School	**4.34**	**5.07**	**7.79**	**17.19**	**100.00%**
PET #1	0.03	2.45	1.01	3.49	20.33%
Organics	0.21	0.13	1.84	2.18	12.68%
Fine Paper	1.91	0.05	0.17	2.14	12.42%
Non-Recyclables	0.01	0.79	1.11	1.92	11.15%
LDPE (#4) Plastic Films	0.18	0.58	1.12	1.88	10.94%
Cardboard	1.32	0.04	0.31	1.67	9.69%
Paper Towels/Compostable Fibres	0.11	0.04	0.68	0.83	4.85%
Boxboard	0.40	0.11	0.29	0.80	4.66%
Aluminum	0.00	0.51	0.11	0.62	3.60%
PP #5	0.04	0.13	0.19	0.35	2.06%
Aseptic Containers	0.00	0.07	0.18	0.25	1.46%
HDPE Plastic Containers #2	0.00	0.13	0.06	0.19	1.10%
Kraft Paper/Other Fibres	0.05	0.00	0.12	0.17	0.97%
Scrap Wood	0.00	0.00	0.16	0.16	0.91%
Cold Beverage Wax-Lined Paper Cups	0.03	0.00	0.11	0.14	0.83%
Polystyrene #6	0.00	0.00	0.13	0.14	0.80%
Coffee Cups	0.04	0.00	0.04	0.08	0.45%
Electronic Waste	0.00	0.00	0.07	0.07	0.43%
PPE	0.00	0.00	0.03	0.03	0.20%
Steel Cans	0.00	0.00	0.03	0.03	0.18%
Textiles	0.00	0.00	0.02	0.02	0.10%
Styrofoam	0.00	0.00	0.01	0.01	0.06%
Gable Top Containers	0.00	0.00	0.00	0.01	0.05%
Other Plastics #7	0.00	0.00	0.00	0.01	0.03%
Newspaper	0.00	0.00	0.00	0.00	0.02%
Composite Cans	0.00	0.00	0.00	0.00	0.01%
Scrap Metal	0.00	0.00	0.00	0.00	0.01%
Total	**4.34**	**5.07**	**7.79**	**17.19**	**100.00%**

Appendix E: Site Photographs

Site Tour - typical red box and blue box receptacles

Site Tour - typical red box and blue box receptacles

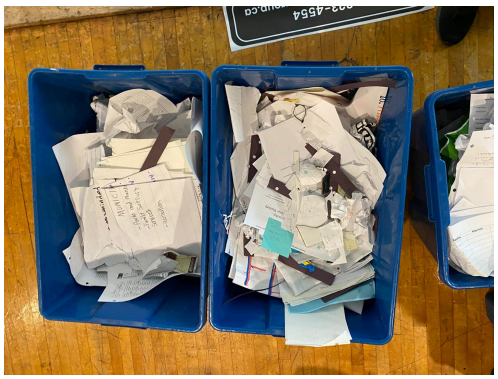
Site Tour - garbage receptacle

Site Tour - typical receptacles

Waste audit - signage

Waste audit - organics

Waste audit - PET #1



Waste audit - fine paper

Waste audit - LDPE #4

Appendix F: School Calendar

Greater Essex County District School Board

Ontario

Student Calendar 2024-2025

Elementary and Secondary

Elementary and Secondary PA Days	Secondary Only PA Days	Holidays
Elementary Only PA Days	Exam Days (Grades 9-12)	Break

SEPTEMBER

S	M	T	W	T	F	S
25	26	27	28	29	30	31
1	2	3$_1$	4$_2$	5$_3$	6$_4$	7
8	9$_5$	10$_1$	11$_2$	12$_3$	13$_4$	14
15	16$_5$	17$_1$	18$_2$	19$_3$	20	21
22	23$_4$	24$_5$	25$_1$	26$_2$	27$_3$	28
29	30$_4$					

OCTOBER

S	M	T	W	T	F	S
		1$_5$	2$_1$	3$_2$	4$_3$	5
6	7$_4$	8$_5$	9$_1$	10$_2$	11	12
13	14	15$_3$	16$_4$	17$_5$	18$_1$	19
20	21$_2$	22$_3$	23$_4$	24$_5$	25$_1$	26
27	28$_2$	29$_3$	30$_4$	31$_5$		

NOVEMBER

S	M	T	W	T	F	S
					1$_1$	2
3	4$_2$	5$_3$	6$_4$	7$_5$	8$_1$	9
10	11$_2$	12$_3$	13$_4$	14$_5$	15	16
17	18$_1$	19$_2$	20$_3$	21$_4$	22$_5$	23
24	25$_1$	26$_2$	27$_3$	28$_4$	29$_5$	30

DECEMBER

S	M	T	W	T	F	S
1	2$_1$	3$_2$	4$_3$	5$_4$	6$_5$	7
8	9$_1$	10$_2$	11$_3$	12$_4$	13$_5$	14
15	16$_1$	17$_2$	18$_3$	19$_4$	20$_5$	21
22	23	24	25	26	27	28
29	30	31				

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6$_1$	7$_2$	8$_3$	9$_4$	10$_5$	11
12	13$_1$	14$_2$	15$_3$	16$_4$	17	18
19	20$_5$	21$_1$	22$_2$	23$_3$	24$_4$	25
26	27$_5$	28$_1$	29$_2$	30$_3$	31$_4$	

FEBRUARY

S	M	T	W	T	F	S
						1
2	3$_5$	4$_1$	5$_2$	6$_3$	7$_4$	8
9	10$_5$	11$_1$	12$_2$	13$_3$	14	15
16	17	18$_4$	19$_5$	20$_1$	21$_2$	22
23	24$_3$	25$_4$	26$_5$	27$_1$	28$_2$	

MARCH

S	M	T	W	T	F	S
						1
2	3$_3$	4$_4$	5$_5$	6$_1$	7$_2$	8
9	10	11	12	13	14	15
16	17$_3$	18$_4$	19$_5$	20$_1$	21$_2$	22
23	24$_3$	25$_4$	26$_5$	27$_1$	28$_2$	29
30	31$_3$					

APRIL

S	M	T	W	T	F	S
		1$_4$	2$_5$	3$_1$	4$_2$	5
6	7$_3$	8$_4$	9$_5$	10$_1$	11$_2$	12
13	14$_3$	15$_4$	16$_5$	17$_1$	18	19
20	21	22$_2$	23$_3$	24$_4$	25$_5$	26
27	28$_1$	29$_2$	30$_3$			

May

S	M	T	W	T	F	S
				1$_4$	2$_5$	3
4	5$_1$	6$_2$	7$_3$	8$_4$	9$_5$	10
11	12$_1$	13$_2$	14$_3$	15$_4$	16$_5$	17
18	19	20$_1$	21$_2$	22$_3$	23$_4$	24
25	26$_5$	27$_1$	28$_2$	29$_3$	30$_4$	31

June

S	M	T	W	T	F	S
1	2$_5$	3$_1$	4$_2$	5$_3$	6	7
8	9$_4$	10$_5$	11$_1$	12$_2$	13$_3$	14
15	16$_4$	17$_5$	18$_1$	19$_2$	20$_3$	21
22	23$_4$	24$_5$	25$_1$	26$_2$	27	28
29	30					

Important Dates	
First Day of Classes	September 3rd
Last Day of Classes	June 26th
194 Instructional Days	Large numbers in black
Elementary 5 Day Cycle (1-5)	Small numbers in black

Elem. and Sec. PA Days	Elementary PA Days	Secondary PA Days	Exam Days (Grades 9-12)
September 20th	January 17th	January 31st	January 24th—30th
October 11th	June 6th	April 25th	June 20th—26th
November 15th			
February 14th			
June 27th			

Holidays and Breaks			
Labour Day	September 2nd	March Break	March 10th—14th
Thanksgiving	October 14th	Good Friday	April 18th
Holiday Break	Dec. 23rd—Jan. 3rd	Easter	April 21st
Family Day	February 17th	Victoria Day	May 19th

GREATER ESSEX COUNTY District School Board

Building Tomorrow Together

Appendix G: Waste Audit and Reduction Work Plan