

Walkerville Collegiate Institute 2100 Richmond Street Windsor, Ontario N8Y 1L4

2024 Waste Audit

Prepared For:

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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 Walkerville Collegiate Institute (Walkerville CI) located at 2100 Richmond Street in Windsor, 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 Walkerville CI 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 one (1) sample of the Red Box stream, one (1) sample 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 Red Box stream sample had the highest sample mass (46.75%) followed by Blue Box (29.79%) and the Garbage stream (23.47%).

Composition By Waste Stream

- **Red Box** fine paper in the Red Box stream had the greatest overall sample mass (43.17kg, 21.4%) followed by cardboard (24.74kg, 12.26%) and boxboard (16.39kg, 8.12%).
- Blue Box consisted primarily of PET #1 (18.88kg, 9.36%), PP #5 (16.76kg, 8.31%), and aluminum (11.35kg, 5.63%).
- **Garbage Stream** the garbage stream consisted primarily of organics (17.37kg, 8.61%) and paper towels/compostable fibres (9.69kg, 4.8%).

Composition by Functional Area



- The classroom (Red Box and Blue Box) generated the highest sample mass (76.53%) which consisted primarily of fine paper, cardboard, PET #1 and boxboard
- **Classroom (Red Box and Blue Box)** generated the highest sample mass (76.53% of total sample mass) which consisted primarily of fine paper, cardboard, PET #1 and boxboard.
- **Classrooms (Garbage)** generated 11.59% of the total sample mass and consisted primarily of organics (7.82kg, 3.88%) and paper towels (6.14kg, 3.04%).
- **Hallway (Garbage)** generated 7.42% of the total sample mass and consisted primarily of organics, paper towels and LDPE #4.
- **Office (Garbage)** generated 2.27% of the total sample mass and consisted primarily of organics
- **Cafeteria (Garbage)** generated 0.89% of the total sample mass and consisted of organics and non-recyclables.
- **Gymnasium (Garbage)** generated 0.86% of the total sample mass and consisted of organics and non-recyclables.
- **Washroom (Garbage)** generated 0.43% of the total sample mass and consisted of non-recyclables and paper towels.

Contamination

- The contamination rates for the sampled streams were as follows: Garbage stream 23.12%, Red Box stream 0.06% and Blue Box stream 0.67%.
- The **Red Box** sample consisted of 99.94% Red Box material, 0.04% Garbage material and 0.02% Blue Box material. The sample composition is shown in the figure below.
 - 45.78% of the Red Box sample consisted of fine paper, 26.74% consisted of cardboard, 17.38% consisted of boxboard, and 9.34% consisted of kraft paper.
 - Roughly 0.06% of the Red Box sample was contaminated with Blue Box material or garbage. Contamination in the Red Box stream consisted of composite cans, non-recyclable material, LDPE #4 plastic film, organics, and polystyrene #6.
- The **Blue Box** sample consisted of 99.33% Blue Box material and 0.67% garbage material.
 - 31.42% of the Blue Box sample consisted of PET #1, 27.89% consisted of PP #5, 18.89% consisted of aluminum, 8.39% consisted of glass, 8.35% consisted of HDPE #2 plastic.
 - Roughly 0.67% of the Blue Box sample was contaminated with garbage (polystyrene #6).
- The **garbage sample** consisted of 76.88% garbage material, 13.46% Red Box material, 9.62% Blue Box material, and 0.02% Electronics/Special items.
 - The garbage sample consisted primarily of organics (36.69%), paper towels/compostable fibres (20.47%), non-recyclables (9.55%), LDPE #4 plastic (8.12%), boxboard (5.64%), and fine paper (4.86%).
 - Roughly 23% of the garbage stream sample was contaminated with Red Box material, Blue Box material, or Electronics/Special items. Contamination in the garbage stream consisted primarily of the following materials:
 - Boxboard 5.67%
 - Fine paper 4.86%



- PET #1 3.14%
- PP #5 2.83%

Recyclables in the Garbage Stream

- The garbage sample consisted of 8.79% Mandatory Recyclables, 76.88% Other Recyclables, and 14.33% Other (Non-Recyclable) material.
- The **Mandatory Recyclables** in the garbage stream consisted of (in % of total sample mass):
 - Fine paper 4.86%
 - Aluminum 1.67%
 - Cardboard 1.35%
 - Steel cans 0.46%
 - Glass 0.44%
 - The **Other Recyclables** in the garbage stream consisted primarily of:
 - Boxboard 5.64%
 - PET #1 3.14%
 - PP#5 2.83%
- Estimated Annual Quantities Generated 39.14 MT of material are expected to be generated annually which consists primarily of the following materials:
 - Fine paper 8.82 MT
 - Cardboard 4.92 MT
 - PET #1 3.95 MT
 - Boxboard 3.7 MT
 - PP #5 3.51 MT
 - Organics 3.37 MT
 - Aluminum 2.36 MT
 - Paper towels 1.88 MT
- The 2024 **waste diversion rate was calculated to be 76.53%** (above the provincial objective of 60%) based on 29.95 MT of diverted waste and 39.14 MT of total waste generated and 194 school days.
- The overall **Capture Rate is 93.36%** based on a total diverted quantity of 29.87 MT and a total potential divertible quantity of 31.99 MT. The Blue Box capture rate was 92.92% and Red Box capture rate was 93.67%.

Recommendations

Mandatory Recyclables

- Fine paper 0.45 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 1.1% and could increase the capture rate up to 1.39%.
- Aluminum 0.15 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 0.39% and could increase the capture rate up to 0.48%.
- **Cardboard 0.12 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 0.32% and could increase the capture rate up to 0.39%.

- Steel cans 0.04 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 0.1% and could increase the capture rate up to 0.13%.
- Glass 0.04 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 0.1% and could increase the capture rate up to 0.13%.

Red Box and Blue Box Streams

- **Boxboard 0.52 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 **1.3%**.
- **PET #1 0.29 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 **0.7%**.
- **PP#5 0.26 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 0.66%.**
- Kraft Paper/Other Fibres 0.08 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 0.21%.
- Coffee Cups 0.07 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 0.17%.
- Aseptic containers 0.04 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 0.11%.

Add Organics Diversion Program

Organics generated in the garbage stream accounted for 3.37 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 8.6%**.

Paper towels generated in the garbage stream accounted for 1.88 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 4.8%**.

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 Walkerville Collegiate Institute located at 2100 Richmond Street in Windsor, 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 one (1) sample of the Red Box stream, one (1) sample 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 site personnel and interviewed staff to obtain information on existing waste diversion practices.



3. Sampling Methodology

On November 7th, 2024, WRG collected one (1) sample of the Red Box stream, one (1) sample of the Blue Box stream and six (6) samples of the Garbage stream. The samples were collected from the following functional areas.

Table 1. Gample Gammary						
Functional Area	Blue Box	Garbage	Red Box	Total		
Cafeteria		1		1		
Classroom	1		1	2		
Classrooms		1		1		
Gymnasium		1		1		
Hallway		1		1		
Office		1		1		
Washroom		1		1		
Total	1	6	1	8		

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 201.74 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 Red Box stream sample had the highest sample mass (46.75%) followed by Blue Box (29.79%) and the Garbage stream (23.47%). 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	%
Fine Paper	43.17	21.40%	0.00	0.00%	2.30	1.14%	45.47	22.54%
Cardboard	24.74	12.26%	0.00	0.00%	0.64	0.32%	25.38	12.58%
PET #1	0.00	0.00%	18.88	9.36%	1.49	0.74%	20.37	10.10%
Boxboard	16.39	8.12%	0.00	0.00%	2.67	1.32%	19.06	9.45%
PP #5	0.00	0.00%	16.76	8.31%	1.34	0.66%	18.10	8.97%
Organics	0.01	0.00%	0.00	0.00%	17.37	8.61%	17.38	8.62%
Aluminum	0.00	0.00%	11.35	5.63%	0.79	0.39%	12.14	6.02%
Paper Towels/Compostable Fibres	0.01	0.00%	0.00	0.00%	9.69	4.80%	9.70	4.81%
Kraft Paper/Other Fibres	8.81	4.37%	0.00	0.00%	0.42	0.21%	9.23	4.57%
Glass	0.00	0.00%	5.04	2.50%	0.21	0.10%	5.25	2.60%
HDPE Plastic Containers #2	0.00	0.00%	5.02	2.49%	0.12	0.06%	5.14	2.55%
Non-Recyclables	0.01	0.00%	0.00	0.00%	4.52	2.24%	4.53	2.24%
LDPE (#4) Plastic Films	0.01	0.00%	0.00	0.00%	3.84	1.90%	3.85	1.91 %
Polystyrene #6	0.01	0.00%	0.40	0.20%	0.79	0.39%	1.20	0.59%
Steel Cans	0.00	0.00%	0.88	0.44%	0.22	0.11%	1.10	0.55%
Aseptic Containers	0.01	0.00%	0.86	0.43%	0.22	0.11%	1.09	0.54%
Coffee Cups	0.66	0.33%	0.00	0.00%	0.35	0.17%	1.01	0.50%
Gable Top Containers	0.00	0.00%	0.90	0.45%	0.02	0.01%	0.92	0.46%
Moulded Pulp	0.48	0.24%	0.00	0.00%	0.00	0.00%	0.48	0.24%
Cold Beverage Wax-Lined Paper Cups	0.00	0.00%	0.00	0.00%	0.13	0.06%	0.13	0.06%
Other Plastics #7	0.00	0.00%	0.00	0.00%	0.13	0.06%	0.13	0.06%
PPE	0.00	0.00%	0.00	0.00%	0.04	0.02%	0.04	0.02%
Composite Cans	0.01	0.00%	0.00	0.00%	0.02	0.01%	0.03	0.01%
Bubble Wrap/Shrink Wrap	0.00	0.00%	0.00	0.00%	0.01	0.01%	0.01	0.01%
Batteries	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%
Textiles	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%
Diapers	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Electronic Waste	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Lightbulbs	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Newspaper	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Plastic Strapping	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Printer Toners	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Scrap Metal	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Scrap Wood	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Styrofoam	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Total	94.31	46.75%	60.09	29.79%	47.34	23.47%	201.74	100.00%

Notable observations are described below:

• **Red Box** - fine paper in the Red Box stream had the greatest overall sample mass (43.17kg, 21.4%) followed by cardboard (24.74kg, 12.26%) and boxboard (16.39kg, 8.12%).



- Blue Box consisted primarily of PET #1 (18.88kg, 9.36%), PP #5 (16.76kg, 8.31%), and aluminum (11.35kg, 5.63%).
- **Garbage Stream** the garbage stream consisted primarily of organics (17.37kg, 8.61%) and paper towels/compostable fibres (9.69kg, 4.8%).

4.3 Sample Composition by Functional Area

The classroom (Red Box and Blue Box) generated the highest sample mass (76.53%) which consisted primarily of fine paper, cardboard, PET #1 and boxboard. The figure below shows the sample composition by material and functional area.

Functional Area	Caf	eteria	Class	room	Class	rooms	Gym	nasium	Hall	way	O	ffice	Was	hroom	To	otal
Material	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	_kg	%
Fine Paper	0.01	0.00%	43.17	21.40%	1.98	0.98%	0.01	0.00%	0.00	0.00%	0.30	0.15%	0.00	0.00%	45.47	22.54%
Cardboard	0.00	0.00%	24.74	12.26%	0.64	0.32%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	25.38	12.58%
PET #1	0.00	0.00%	18.88	9.36%	0.46	0.23%	0.36	0.18%	0.66	0.33%	0.01	0.00%	0.00	0.00%	20.37	10.10%
Boxboard	0.01	0.00%	16.39	8.12%	2.41	1.19%	0.01	0.00%	0.14	0.07%	0.10	0.05%	0.00	0.00%	19.06	9.45%
PP #5	0.00	0.00%	16.76	8.31%	0.28	0.14%	0.01	0.00%	0.70	0.35%	0.34	0.17%	0.01	0.00%	18.10	8.97%
Organics	1.04	0.52%	0.01	0.00%	7.82	3.88%	0.62	0.31%	5.15	2.55%	2.74	1.36%	0.00	0.00%	17.38	8.62%
Aluminum	0.16	0.08%	11.35	5.63%	0.29	0.14%	0.01	0.00%	0.32	0.16%	0.01	0.00%	0.00	0.00%	12.14	6.02%
Paper Towels/Compostable Fibres	0.14	0.07%	0.01	0.00%	6.14	3.04%	0.14	0.07%	2.63	1.30%	0.44	0.22%	0.20	0.10%	9.70	4.81%
Kraft Paper/Other Fibres	0.01	0.00%	8.81	4.37%	0.12	0.06%	0.01	0.00%	0.14	0.07%	0.00	0.00%	0.14	0.07%	9.23	4.57%
Glass	0.01	0.00%	5.04	2.50%	0.20	0.10%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	5.25	2.60%
HDPE Plastic Containers #2	0.00	0.00%	5.02	2.49%	0.10	0.05%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	5.14	2.55%
Non-Recyclables	0.39	0.19%	0.01	0.00%	1.72	0.85%	0.31	0.15%	1.38	0.68%	0.22	0.11%	0.50	0.25%	4.53	2.24%
LDPE (#4) Plastic Films	0.01	0.00%	0.01	0.00%	0.32	0.16%	0.01	0.00%	3.32	1.65%	0.18	0.09%	0.00	0.00%	3.85	1.91%
Polystyrene #6	0.01	0.00%	0.41	0.20%	0.22	0.11%	0.10	0.05%	0.26	0.13%	0.20	0.10%	0.00	0.00%	1.20	0.59%
Steel Cans	0.00	0.00%	0.88	0.44%	0.22	0.11%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	1.10	0.55%
Aseptic Containers	0.00	0.00%	0.87	0.43%	0.01	0.00%	0.00	0.00%	0.20	0.10%	0.01	0.00%	0.00	0.00%	1.09	0.54%
Coffee Cups	0.00	0.00%	0.66	0.33%	0.32	0.16%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	1.01	0.50%
Gable Top Containers	0.00	0.00%	0.90	0.45%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.01	0.00%	0.92	0.46%
Moulded Pulp	0.00	0.00%	0.48	0.24%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.48	0.24%
Cold Beverage Wax-Lined Paper Cups	0.00	0.00%	0.00	0.00%	0.10	0.05%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.13	0.06%
Other Plastics #7	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.12	0.06%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.13	0.06%
PPE	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.04	0.02%
Composite Cans	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.03	0.01%
Bubble Wrap/Shrink Wrap	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.01	0.01%
Batteries	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%
Textiles	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%
Total	1.79	0.89%	154.39	76.53%	23.39	11.59%	1.74	0.86%	14.97	7.42%	4.59	2.27%	0.87	0.43%	201.74	100.00%

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



Notable observations are described below:

- **Classroom (Red Box and Blue Box)** generated the highest sample mass (76.53% of total sample mass) which consisted primarily of fine paper, cardboard, PET #1 and boxboard.
- **Classrooms (Garbage)** generated 11.59% of the total sample mass and consisted primarily of organics (7.82kg, 3.88%) and paper towels (6.14kg, 3.04%).
- **Hallway (Garbage)** generated 7.42% of the total sample mass and consisted primarily of organics, paper towels and LDPE #4.
- **Office (Garbage)** generated 2.27% of the total sample mass and consisted primarily of organics
- **Cafeteria (Garbage)** generated 0.89% of the total sample mass and consisted of organics and non-recyclables.
- **Gymnasium (Garbage)** generated 0.86% of the total sample mass and consisted of organics and non-recyclables.
- **Washroom (Garbage)** generated 0.43% of the total sample mass and consisted of non-recyclables and paper towels.

4.4 Sample Composition and Contamination

The contamination rates for the sampled streams were as follows: Garbage stream - 23.12%, Red Box stream - 0.06% and Blue Box stream - 0.67%. The figures below show the contamination rate by the sampled stream and functional area.



Figure 1a: Contamination Rate by Sampled Stream



Figure 1b: Contamination Rate by Sampled Stream and Functional Area





4.4.1 Red Box Sample Composition and Contamination

The Red Box sample consisted of 99.94% Red Box material, 0.04% Garbage material and 0.02% Blue Box material. The sample composition is shown in the figure below.

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



Blue Box Garbage Red Box Special items

Roughly 0.06% of the Red Box sample was contaminated with Blue Box material (composite cans) or garbage (non-recyclable material, LDPE #4, organics, polystyrene #6).

Notable Observations

- The Red Box sample consisted of 99.94% Red Box material, 0.04% Garbage material and 0.02% Blue Box material.
- 45.78% of the Red Box sample consisted of fine paper, 26.74% consisted of cardboard, 17.38% consisted of boxboard, and 9.34% consisted of kraft paper.
- Roughly 0.06% of the Red Box sample was contaminated with Blue Box material or garbage. Contamination in the Red Box stream consisted of composite cans, non-recyclable material, LDPE #4 plastic film, organics, and polystyrene #6.

4.4.2 Blue Box Sample Composition and Contamination

The Blue Box sample consisted of 99.33% Blue Box material and 0.67% garbage material. The sample composition is shown in the figure below.



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



Blue Box Garbage Red Box Special items

Roughly 0.67% of the Blue Box sample was contaminated with garbage material.

Notable Observations

- The Blue Box sample consisted of 99.33% Blue Box material and 0.67% garbage material.
- 31.42% of the Blue Box sample consisted of PET #1, 27.89% consisted of PP #5, 18.89% consisted of aluminum, 8.39% consisted of glass, 8.35% consisted of HDPE #2 plastic.
- Roughly 0.67% of the Blue Box sample was contaminated with garbage (polystyrene #6).

4.4.3 Garbage Sample Composition and Contamination

The garbage sample consisted of 76.88% garbage material, 13.46% Red Box material, 9.62% Blue Box material, and 0.02% Electronics/Special items. The sample composition is shown in the figure below.

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



Blue Box Garbage Red Box Special items

Roughly 23% of the garbage stream sample was contaminated with Red Box material, Blue 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) Blue Box = Garbage = Red Box = Special items



Notable Observations

- The garbage sample consisted of 76.88% garbage material, 13.46% Red Box material, 9.62% Blue Box material, and 0.02% Electronics/Special items.
- The garbage sample consisted primarily of organics (36.69%), paper towels/compostable fibres (20.47%), non-recyclables (9.55%), LDPE #4 plastic (8.12%), boxboard (5.64%), and fine paper (4.86%).
- Roughly 23% of the garbage stream sample was contaminated with Red Box material, Blue Box material, or Electronics/Special items. Contamination in the garbage stream consisted primarily of the following materials:
 - Boxboard 5.67%
 - Fine paper 4.86%
 - PET #1 3.14%
 - PP #5 2.83%



4.5 Recyclables in the Garbage Stream

Based on the waste sample composition analysis, Mandatory Recyclables and Other Recyclables were identified in the garbage stream. The garbage sample consisted of 8.79% Mandatory Recyclables, 76.88% Other Recyclables, and 14.33% 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 schools 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



Mandatory Recyclable
 Non-Recyclable
 Other Recyclable

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

(III ky and % of garbage sample mass)						
Sampled Stream	Garbage					
O.Reg 103/94 Type	Annual Quantity (MT)	%				
Mandatory Recyclable	0.81	8.79%				
Fine Paper	0.45	4.86%				
Aluminum	0.15	1.67%				
Cardboard	0.12	1.35%				
Steel Cans	0.04	0.46%				
Glass	0.04	0.44%				
Total	0.81	8.79%				

0.81 8.79%

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



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

	'				
Sampled Stream	Garbage				
O.Reg 103/94 Type	Annual Quantity (MT)	%			
Other Recyclable	1.32	14.33%			
Boxboard	0.52	5.64%			
PET #1	0.29	3.14%			
PP #5	0.26	2.83%			
Kraft Paper/Other Fibres	0.08	0.88%			
Coffee Cups	0.07	0.74%			
Aseptic Containers	0.04	0.46%			
Other Plastics #7	0.03	0.27%			
HDPE Plastic Containers #2	0.02	0.25%			
Composite Cans	0.00	0.04%			
Gable Top Containers	0.00	0.04%			
Batteries	0.00	0.02%			
Textiles	0.00	0.02%			
Total	1.32	14.33%			

Notable observations are discussed below:

- The garbage sample consisted of 8.79% Mandatory Recyclables, 76.88% Other Recyclables, and 14.33% Other (Non-Recyclable) material.
- The Mandatory Recyclables in the garbage stream consisted of (in % of total sample mass):
 - Fine paper 4.86%
 - Aluminum 1.67%
 - Cardboard 1.35%
 - Steel cans 0.46%
 - Glass 0.44%
- The Other Recyclables in the garbage stream consisted primarily of:
 - Boxboard 5.64%
 - PET #1 3.14%
 - PP#5 2.83%



4.6 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.

Divertible Material	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Landfill Quantity (MT)	Total Generated (MT)	%
Walkerville Collegiate Institute	18.30	11.66	9.18	39.14	100.00%
Fine Paper	8.37	0.00	0.45	8.82	22.54%
Cardboard	4.80	0.00	0.12	4.92	12.58%
PET #1	0.00	3.66	0.29	3.95	10.10%
Boxboard	3.18	0.00	0.52	3.70	9.45%
PP #5	0.00	3.2 5	0.26	3.51	8.97%
Organics	0.00	0.00	3.37	3.37	8.62%
Aluminum	0.00	2.20	0.15	2.36	6.02%
Paper Towels/Compostable Fibres	0.00	0.00	1.88	1.88	4.81%
Kraft Paper/Other Fibres	1.71	0.00	0.08	1.79	4.57%
Glass	0.00	0.98	0.04	1.02	2.60%
HDPE Plastic Containers #2	0.00	0.97	0.02	1.00	2.55%
Non-Recyclables	0.00	0.00	0.88	0.88	2.24%
LDPE (#4) Plastic Films	0.00	0.00	0.75	0.75	1.91%
Polystyrene #6	0.00	0.08	0.15	0.23	0.59%
Steel Cans	0.00	0.17	0.04	0.21	0.55%
Aseptic Containers	0.00	0.17	0.04	0.21	0.54%
Coffee Cups	0.13	0.00	0.07	0.20	0.50%
Gable Top Containers	0.00	0.17	0.00	0.18	0.46%
Moulded Pulp	0.09	0.00	0.00	0.09	0.24%
Cold Beverage Wax-Lined Paper Cups	0.00	0.00	0.03	0.03	0.06%
Other Plastics #7	0.00	0.00	0.03	0.03	0.06%
PPE	0.00	0.00	0.01	0.01	0.02%
Composite Cans	0.00	0.00	0.00	0.01	0.01%
Bubble Wrap/Shrink Wrap	0.00	0.00	0.00	0.00	0.01%
Batteries	0.00	0.00	0.00	0.00	0.00%
Textiles	0.00	0.00	0.00	0.00	0.00%
Total	18.30	11.66	9.18	39.14	100.00%

Table 6: Estimated Annual Quantities by Material



Notable Observations are discussed below:

- 39.14 MT of material are expected to be generated annually which consists primarily of the following materials:
 - Fine paper 8.82 MT
 - Cardboard 4.92 MT
 - PET #1 3.95 MT
 - Boxboard 3.7 MT
 - PP #5 3.51 MT
 - Organics 3.37 MT
 - Aluminum 2.36 MT
 - Paper towels 1.88 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:

Waste Diversion Rate = <u>Total Waste Diverted (3Rs)</u> x 100 Total Waste Generated

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						
Walkerville Collegiate Institute	9.18	18.30	11.66	29.95	39.14	76.53%

Table 7: Waste Diversion Rate

The 2024 **waste diversion rate was calculated to be 76.53%** (above the provincial objective of 60%) based on 29.95 MT of diverted waste and 39.14 MT of total waste generated and 194 school days.

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:



Capture Rate = <u>Total Divertible Material Captured (3Rs)</u> x 100 Total Divertible Material Generated

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

Divertible Material	Landfill Quantity (MT)	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Total Generated (MT)	Capture Rate	
Walkerville Collegiate Institute						
Red Box	1.24	18.28	0.00	19.52	93.67%	
Blue Box	0.88	0.00	11.58	12.47	92.92%	
Total	2.12	18.29	11.58	31.99	93.37%	

Table 8: Capture Rates for Diversion Programs

The overall **Capture Rate is 93.36%** based on a total diverted quantity of 29.87 MT and a total potential divertible quantity of 31.99 MT. The Blue Box capture rate was 92.92% and Red Box capture rate was 93.67%.

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.

Sample Composition

- The Red Box stream sample had the highest sample mass (46.75%) followed by Blue Box (29.79%) and the Garbage stream (23.47%).
 Composition By Waste Stream
- **Red Box** fine paper in the Red Box stream had the greatest overall sample mass (43.17kg, 21.4%) followed by cardboard (24.74kg, 12.26%) and boxboard (16.39kg, 8.12%).



- Blue Box consisted primarily of PET #1 (18.88kg, 9.36%), PP #5 (16.76kg, 8.31%), and aluminum (11.35kg, 5.63%).
- **Garbage Stream** the garbage stream consisted primarily of organics (17.37kg, 8.61%) and paper towels/compostable fibres (9.69kg, 4.8%).

Composition by Functional Area

- The classroom (Red Box and Blue Box) generated the highest sample mass (76.53%) which consisted primarily of fine paper, cardboard, PET #1 and boxboard
- **Classroom (Red Box and Blue Box)** generated the highest sample mass (76.53% of total sample mass) which consisted primarily of fine paper, cardboard, PET #1 and boxboard.
- **Classrooms (Garbage)** generated 11.59% of the total sample mass and consisted primarily of organics (7.82kg, 3.88%) and paper towels (6.14kg, 3.04%).
- **Hallway (Garbage)** generated 7.42% of the total sample mass and consisted primarily of organics, paper towels and LDPE #4.
- **Office (Garbage)** generated 2.27% of the total sample mass and consisted primarily of organics
- **Cafeteria (Garbage)** generated 0.89% of the total sample mass and consisted of organics and non-recyclables.
- **Gymnasium (Garbage)** generated 0.86% of the total sample mass and consisted of organics and non-recyclables.
- **Washroom (Garbage)** generated 0.43% of the total sample mass and consisted of non-recyclables and paper towels.

Contamination

- The contamination rates for the sampled streams were as follows: Garbage stream 23.12%, Red Box stream 0.06% and Blue Box stream 0.67%.
- The **Red Box** sample consisted of 99.94% Red Box material, 0.04% Garbage material and 0.02% Blue Box material. The sample composition is shown in the figure below.
 - 45.78% of the Red Box sample consisted of fine paper, 26.74% consisted of cardboard, 17.38% consisted of boxboard, and 9.34% consisted of kraft paper.
 - Roughly 0.06% of the Red Box sample was contaminated with Blue Box material or garbage. Contamination in the Red Box stream consisted of composite cans, non-recyclable material, LDPE #4 plastic film, organics, and polystyrene #6.
- The **Blue Box** sample consisted of 99.33% Blue Box material and 0.67% garbage material.
 - 31.42% of the Blue Box sample consisted of PET #1, 27.89% consisted of PP #5, 18.89% consisted of aluminum, 8.39% consisted of glass, 8.35% consisted of HDPE #2 plastic.
 - Roughly 0.67% of the Blue Box sample was contaminated with garbage (polystyrene #6).
- The **garbage sample** consisted of 76.88% garbage material, 13.46% Red Box material, 9.62% Blue Box material, and 0.02% Electronics/Special items.
 - The garbage sample consisted primarily of organics (36.69%), paper towels/compostable fibres (20.47%), non-recyclables (9.55%), LDPE #4 plastic (8.12%), boxboard (5.64%), and fine paper (4.86%).



- Roughly 23% of the garbage stream sample was contaminated with Red Box material, Blue Box material, or Electronics/Special items. Contamination in the garbage stream consisted primarily of the following materials:
 - Boxboard 5.67%
 - Fine paper 4.86%
 - PET #1 3.14%
 - PP #5 2.83%

Recyclables in the Garbage Stream

- The garbage sample consisted of 8.79% Mandatory Recyclables, 76.88% Other Recyclables, and 14.33% Other (Non-Recyclable) material.
- The **Mandatory Recyclables** in the garbage stream consisted of (in % of total sample mass):
 - Fine paper 4.86%
 - Aluminum 1.67%
 - Cardboard 1.35%
 - Steel cans 0.46%
 - Glass 0.44%
- The **Other Recyclables** in the garbage stream consisted primarily of:
 - Boxboard 5.64%
 - PET #1 3.14%
 - PP#5 2.83%

Estimated Annual Quantities Generated

- 39.14 MT of material are expected to be generated annually which consists primarily of the following materials:
 - Fine paper 8.82 MT
 - Cardboard 4.92 MT
 - PET #1 3.95 MT
 - Boxboard 3.7 MT
 - PP #5 3.51 MT
 - Organics 3.37 MT
 - Aluminum 2.36 MT
 - Paper towels 1.88 MT

Waste Diversion Rate

• The 2024 waste diversion rate was calculated to be 76.53% (above the provincial objective of 60%) based on 29.95 MT of diverted waste and 39.14 MT of total waste generated and 194 school days.

Capture Rate

• The overall **Capture Rate is 93.36**% based on a total diverted quantity of 29.87 MT and a total potential divertible quantity of 31.99 MT. The Blue Box capture rate was 92.92% and Red Box capture rate was 93.67%.



8 Recommendations

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

The Site diverts 76.53% of generated waste through existing programs, above the provincial objective of 60%. The capture rate is 93.37%. 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

- Fine paper 0.45 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 1.1% and could increase the capture rate up to 1.39%.
- Aluminum 0.15 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 0.39% and could increase the capture rate up to 0.48%.
- **Cardboard 0.12 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 0.32% and could increase the capture rate up to 0.39%.
- Steel cans 0.04 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 0.1% and could increase the capture rate up to 0.13%.
- **Glass 0.04 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 0.1%** and **could increase the capture rate up to 0.13%**.

Red Box and Blue Box Streams

- **Boxboard 0.52 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 1.3%.**
- **PET #1 0.29 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 0.7%.**
- **PP#5 0.26 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 0.66%.**



- Kraft Paper/Other Fibres 0.08 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 0.21%.
- Coffee Cups 0.07 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 0.17%.
- Aseptic containers 0.04 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 0.11%.

8.2 Add Organics/Paper Towels Diversion Programs

Organics generated in the garbage stream accounted for 3.37 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 8.6%**.

Paper towels generated in the garbage stream accounted for 1.88 MT of material annually. Diverting this material through a new organics diversion program **could increase waste diversion by up to 4.8%**.

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





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	
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.
4. Organics Organic Food Waste Other Organics:	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. 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.
 4. Organics Organic Food Waste Other Organics: Compostable fibres 	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. 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. Include paper towels, paper napkins, toilet paper, facial tissues, etc.
 4. Organics Organic Food Waste Other Organics: Compostable fibres 5. Operational 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. 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. Include paper towels, paper napkins, toilet paper, facial tissues, etc.



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							
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.						



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



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

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



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	Clas	sroom	T	otal	Clas	sroom	T	otal	Caf	Cafeteria Classrooms Gymnasium Hallway Office					ffice	Washroom Total								
O.Reg 103/94 Type	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	_ ^{kg}	%
Mandatory Recyclable	67.91	33.66%	67.91	33.66%	17.27	8.56%	17.27	8.56%	0.18	0.09%	3.33	1.65%	0.02	0.01%	0.32	0.16%	0.31	0.15%	0.00	0.00%	4.16	2.06%	89.34	44.29%
Fine Paper	43.17	21.40%	43.17	21.40%	0.00	0.00%	0.00	0.00%	0.01	0.00%	1.98	0.98%	0.01	0.00%	0.00	0.00%	0.30	0.15%	0.00	0.00%	2.30	1.14%	45.47	22.54%
Cardboard	24.74	12.26%	24.74	12.26%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.64	0.32%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.64	0.32%	25.38	12.58%
Aluminum	0.00	0.00%	0.00	0.00%	11.35	5.63%	11.35	5.63%	0.16	0.08%	0.29	0.14%	0.01	0.00%	0.32	0.16%	0.01	0.00%	0.00	0.00%	0.79	0.39%	12.14	6.02%
Glass	0.00	0.00%	0.00	0.00%	5.04	2.50%	5.04	2.50%	0.01	0.00%	0.20	0.10%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.21	0.10%	5.25	2.60%
Steel Cans	0.00	0.00%	0.00	0.00%	0.88	0.44%	0.88	0.44%	0.00	0.00%	0.22	0.11%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.22	0.11%	1.10	0.55%
Other Recyclable	26.36	13.07%	26.36	13.07%	42.42	21.03%	42.42	21.03%	0.02	0.01%	3.73	1.85%	0.52	0.26%	1.88	0.93%	0.47	0.23%	0.17	0.08%	6.78	3.36%	75.56	37.46%
PET #1	0.00	0.00%	0.00	0.00%	18.88	9.36%	18.88	9.36%	0.00	0.00%	0.46	0.23%	0.36	0.18%	0.66	0.33%	0.01	0.00%	0.00	0.00%	1.49	0.74%	20.37	10.10%
Boxboard	16.39	8.12%	16.39	8.12%	0.00	0.00%	0.00	0.00%	0.01	0.00%	2.41	1.19%	0.01	0.00%	0.14	0.07%	0.10	0.05%	0.00	0.00%	2.67	1.32%	19.06	9.45%
PP #5	0.00	0.00%	0.00	0.00%	1 <mark>6</mark> .76	8.31%	16.76	8.31%	0.00	0.00%	0.28	0.14%	0.01	0.00%	0.70	0.35%	0.34	0.17%	0.01	0.00%	1.34	0.66%	18.10	8.97%
Kraft Paper/Other Fibres	8.81	4.37%	8.81	4.37%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.12	0.06%	0.01	0.00%	0.14	0.07%	0.00	0.00%	0.14	0.07%	0.42	0.21%	9.23	4.57%
HDPE Plastic Containers #2	0.00	0.00%	0.00	0.00%	5.02	2.49%	5.02	2.49%	0.00	0.00%	0.10	0.05%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.12	0.06%	5.14	2.55%
Aseptic Containers	0.01	0.00%	0.01	0.00%	0.86	0.43%	0.86	0.43%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.20	0.10%	0.01	0.00%	0.00	0.00%	0.22	0.11%	1.09	0.54%
Coffee Cups	0.66	0.33%	0.66	0.33%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.32	0.16%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.35	0.17%	1.01	0.50%
Gable Top Containers	0.00	0.00%	0.00	0.00%	0.90	0.45%	0.90	0.45%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.01	0.00%	0.02	0.01%	0.92	0.46%
Moulded Pulp	0.48	0.24%	0.48	0.24%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.48	0.24%
Other Plastics #7	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.12	0.06%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.13	0.06%	0.13	0.06%
Composite Cans	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.02	0.01%	0.03	0.01%
Batteries	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%
Textiles	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%
Non-Recyclable	0.04	0.02%	0.04	0.02%	0.40	0.20%	0.40	0.20%	1.59	0.79%	16.33	8.09%	1.20	0.59%	12.77	6.33%	3.80	1.89%	0.71	0.35%	36.40	18.04%	36.83	18.26%
Organics	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	1.04	0.52%	7.82	3.88%	0.62	0.31%	5.15	2.55%	2.74	1.36%	0.00	0.00%	17.37	8.61%	17.38	8.62%
Paper Towels/Compostable Fibres	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.14	0.07%	6.14	3.04%	0.14	0.07%	2.63	1.30%	0.44	0.22%	0.20	0.10%	9.69	4.80%	9.70	4.81%
Non-Recyclables	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.39	0.19%	1.72	0.85%	0.31	0.15%	1.38	0.68%	0.22	0.11%	0.50	0.25%	4.52	2.24%	4.53	2.24%
LDPE (#4) Plastic Films	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.32	0.16%	0.01	0.00%	3.32	1.65%	0.18	0.09%	0.00	0.00%	3.84	1.90%	3.85	1.91%
Polystyrene #6	0.01	0.00%	0.01	0.00%	0.40	0.20%	0.40	0.20%	0.01	0.00%	0.22	0.11%	0.10	0.05%	0.26	0.13%	0.20	0.10%	0.00	0.00%	0.79	0.39%	1.20	0.59%
Cold Beverage Wax- Lined Paper Cups	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.10	0.05%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.13	0.06%	0.13	0.06%
PPE	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.01	0.00%	0.04	0.02%	0.04	0.02%
Bubble Wrap/Shrink Wrap	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.01	0.00%	0.01	0.00%	0.00	0.00%	0.01	0.01%	0.01	0.01%
Total	94.31	46.75%	94.31	46.75%	60.09	29.79%	60.09	29.79%	1.79	0.89%	23.39	11.59%	1.74	0.86%	14.97	7.42%	4.59	2.27%	0.87	0.43%	47.34	23.47%	201.74	100.00%

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

Divertible Material	Total Generated (MT) ▼	Diverted Through Red Box Program (MT)	Diverted Through Blue Box Program (MT)	Total Diverted (MT)	Landfill Quantity (MT)	Capture Rate	
Walkerville Collegiate Institute	39.14	18.30	11.66	29.95	9.18	76.53%	
Mandatory Recyclable	17.33	13.17	3.35	16.52	0.81	95.34%	
Fine Paper	8.82	8.37	0.00	8.37	0.45	94.94%	
Cardboard	4.92	4.80	0.00	4.80	0.12	97.48%	
Aluminum	2.36	0.00	2.20	2.20	0.15	93.49%	
Glass	1.02	0.00	0.98	0.98	0.04	96.00%	
Steel Cans	0.21	0.00	0.17	0.17	0.04	80.00%	
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00%	
Other Recyclable	14.66	5.11	8.23	13.34	1.32	91.02%	
PET #1	3.95	0.00	3.66	3.66	0.29	92.69%	
Boxboard	3.70	3.18	0.00	3.18	0.52	85.99%	
PP #5	3.51	0.00	3. <mark>2</mark> 5	3.25	0.26	92.60%	
Kraft Paper/Other Fibres	1.79	1.71	0.00	1.71	0.08	95.50%	
HDPE Plastic Containers #2	1.00	0.00	0.97	0.97	0.02	97.70%	
Aseptic Containers	0.21	0.00	0.17	0.17	0.04	79.96%	
Coffee Cups	0.20	0.13	0.00	0.13	0.07	65.48%	
Gable Top Containers	0.18	0.00	0.17	0.17	0.00	98.04%	
Moulded Pulp	0.09	0.09	0.00	0.09	0.00	100.00%	
Other Plastics #7	0.03	0.00	0.00	0.00	0.03	0.00%	
Composite Cans	0.01	0.00	0.00	0.00	0.00	33.33%	
Batteries	0.00	0.00	0.00	0.00	0.00	0.00%	
Textiles	0.00	0.00	0.00	0.00	0.00	0.00%	
Electronic Waste	0.00	0.00	0.00	0.00	0.00	0.00%	
Lightbulbs	0.00	0.00	0.00	0.00	0.00	0.00%	
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00%	
Non-Recyclable	7.15	0.01	0.08	0.08	7.06	1.18%	
Organics	3.37	0.00	0.00	0.00	3.37	0.06%	
Paper Towels/Compostable Fibres	1.88	0.00	0.00	0.00	1.88	0.10%	
Non-Recyclables	0.88	0.00	0.00	0.00	0.88	0.11%	
LDPE (#4) Plastic Films	0.75	0.00	0.00	0.00	0.75	0.13%	
Polystyrene #6	0.23	0.00	0.08	0.08	0.15	33.89%	
Cold Beverage Wax-Lined Paper Cups	0.03	0.00	0.00	0.00	0.03	0.00%	
PPE	0.01	0.00	0.00	0.00	0.01	0.00%	
Bubble Wrap/Shrink Wrap	0.00	0.00	0.00	0.00	0.00	0.00%	
Diapers	0.00	0.00	0.00	0.00	0.00	0.00%	
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00%	
Scrap Metal	0.00	0.00	0.00	0.00	0.00	0.00%	
Scrap Wood	0.00	0.00	0.00	0.00	0.00	0.00%	
Styrofoam	0.00	0.00	0.00	0.00	0.00	0.00%	
Total	39.14	18.30	11.66	29.95	9.18	76.53%	

Appendix E: Site Photographs







Waste audit - organics in garbage in classrooms



Waste audit - paper towels in garbage in classrooms

Appendix F: School Calendar

Greater Essex County District School Board Student Calendar 2024-2025 Ontario Elementary and Secondary Secondary Only PA Days Holidays **Elementary and Secondary PA Days Elementary Only PA Days** Exam Days (Grades 9-12) Break SEPTEMBER NOVEMBER OCTOBER DECEMBER S S M т w т т W T S S M F Т W т M 25 28 29 30 31 26 27 21 5 2 15 3, 11 7 43 1 21 3, 54 65 91 102 11 12 1 4**2** 53 64 7 6 74 85 3 81 9 31 42 53 64 75 8 91 10<u>z</u> 113 124 135 14 101 112 123 134 14 13 14 153 164 175 181 19 10 112 123 134 145 15 16 8 15 161 172 183 194 205 21 95 20 21z 22z 23z 23z 24z 25z 26 17 18z 19z 20z 21z 22z 23 15 165 171 182 193 21 22 23 24 25 26 27 28 22 234 245 251 262 273 28 27 282 293 304 315 24 251 262 273 284 295 30 29 30 31 29 304 JANUARY FEBRUARY MARCH APRIL S. м т Т м т F S M т w т s F S M 1 2 3 4 1 1 42 5 8 8 11₂ 12 5 94 105 11 52 63 74 2 55 61 72 6 7. 84 9 10 61 72 83 2 3s 41 33 44 9 10₅ 11₁ 12₂ 13₃ 14 15 9 10 11 12 13 14 15 **13** 143 154 165 171 18 19 12 131 142 153 164 17 18 **16 17** 184 195 201 212 **22 16** 173 184 195 201 212 **22** 20 21 222 233 244 255 26 19 20s 211 222 233 244 25 26 275 281 292 303 314 23 249 254 265 271 282 23 243 254 265 271 282 29 27 281 292 303 30 313 May June First Day of Cla September 3rd S M т W Т M т W т F S 7 25 1 25 31 40 52 6 14 94 105 11₁ 12₂ 13₃ 14 62 73 84 95 10 8 11 121 132 143 154 165 164 175 181 192 203 21 17 15 18 19 201 212 223 234 24 22 234 245 251 262 27 28



29 30

25 265 271 282 293 304 **31**

Building Tomorrow Together

Last Day of Classes	6	June 26th							
194 Instructional I	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 October 11th November 15th February 14th June 27th	January 17th June 6th	January 3 1st April 25th	January 24th—30th June 20th—25th						
	Holidays a	nd 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							

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