University of Guelph
2019 Solid Non-Hazardous Waste Audit

Prepared for:

University of Guelph
50 Stone Road East
Guelph, Ontario, N1G 2W1

Prepared by:

Waste Reduction Group Inc
801 King Street West, Unit PH#20
Toronto, Ontario, M5V 3C9
Phone (416) 823-4554

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Executive Summary

University of Guelph retained the services of Waste Reduction Group Inc to conduct a solid non-hazardous waste audit at its campus located in Guelph, Ontario. Twenty-four hour samples of waste materials (i.e. garbage and mixed recycling) were collected from eighteen (18) different areas on campus, consisting of approximately 1425 kg. The collected samples were audited over seven (7) days in March 2019. Waste materials collected for the audit were tagged to indicate the functional area of the campus that generated the waste, including office areas, public areas, classrooms, washrooms, labs, kitchenettes/break rooms, food service kitchens, dining areas and residences. The following list summarizes the overall garbage composition determined from the audit:

- Non-recyclable 46.3%
- Organic Waste 26.6%
- Mixed Papers: 8.2%
- Mixed Containers: 7.4%
- Paper Towels: 5.5%
- Coffee Cups: 4.5%
- Cardboard 1.1%
- Styrofoam: 0.1%
- Scrap metals: 0.1%
- LDPE (#4 Plastic) films, Scrap Woods: Each < 0.1%

The mixed recycling sample consisted of approximately 42% mixed containers, 26% mixed papers and 6.8% cardboard. The mixed recycling stream was determined to have a contamination rate of approximately 25%.

Waste diversion programs have been implemented on campus for cardboard, mixed recycling, papers (including confidential papers), scrap metals, scrap woods, electronics, bulbs, batteries, organics, oil and grease, textbook donations, beverage bottle returns, manure and contaminated wood/paint. Through discussions with University of Guelph personnel, estimates of the annual amounts of solid non-hazardous waste materials disposed, reduced, reused, recycled and composted were determined. The following table summarizes the estimated annual quantities of waste materials generated, diverted and disposed in 2018.

Annual Quantities of Materials Diverted & Disposed

Material	Total Annual Amount	
	Metric Tonnes	Percent
Disposed to Landfill	2050.74	45.3%
Materials Diverted from Landfill	2475.45	54.7%
Total Waste Generated	**4526.19**	**100%**

Based on the total annual amount of waste generated and materials diverted, the university's waste diversion rate was determined to be approximately 55%. The Ministry of the Environment, Conservation & Parks (MECP) provincial objective is 60% waste diversion rate. University of Guelph's management team are committed to improving their waste diversion rate and minimizing the amount of materials disposed to landfill.

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Appendices

1 Introduction

University of Guelph (UofG) retained the services of Waste Reduction Group Inc to conduct a solid non-hazardous waste audit in 2019 at its campus located in Guelph, Ontario. The waste audit examined representative samples of waste from eighteen (18) different areas on campus over a seven (7) day period in March 2019. The goal of the waste audit was to gain an understanding of the quantities and composition of solid non-hazardous wastes generated on campus.

UofG is a multi-building community that has 24,191 Full-Time Equivalent (FTE) students (2018) and staff that generate waste and divertible materials. UofG took the initiative to conduct a solid non-hazardous waste audit with the intent of complying with O.Reg. 102/94, to confirm compliance with O.Reg.103/94 and to further improve upon their present waste reduction, reuse and recycling initiatives.

1.1 Purpose

The purpose of the solid non-hazardous waste audit was to:

- Comply with Part X of O.Reg. 102/94 'Waste Audits and Waste Reduction Work Plans', which requires the operator of an educational institution with more than 350 students enrolled per year, to conduct an annual waste audit and prepare and implement a waste reduction work plan (Refer to Appendix A for a partial excerpt of O.Reg.102/94);

- Confirm compliance with Section 14 of O.Reg.103/94 'Industrial, Commercial and Institutional Source Separation Programs' and Part X 'Educational Institutions' of the Schedule attached to the Regulation (Refer to Appendix A for a partial excerpt of O.Reg.103/94).

- Determine the annual waste diversion rate for UofG resulting from existing waste reduction, reuse, and recycling (3Rs) programs;

- Identify point of generation and quantify composition of wastes at UofG;

- Identify any additional opportunities for waste reduction and diversion that may exist at UofG;

- Address any specific concerns or opportunities identified during the study.

1.2 Scope of Work

To satisfy the purpose of the waste audit, the following scope of work was completed:

- Collected data pertaining to waste composition between March 18 and 26, 2019;

- Determined the total quantity of waste materials diverted from landfill by UofG through current reduction, reuse, and recycling programs;

- Completed a Waste Audit Report (per MECP protocol) that addressed the amount, nature and composition of the waste, the manner by which the waste was generated, including

management decisions and policies that relate to the production of waste, and the way in which the waste is managed on campus; and

- Completed a Waste Reduction Work Plan (per MECP protocol) regarding plans to reduce, reuse and recycle waste on campus. The report set out who will implement each part of the plan, when each part will be implemented and what the expected results shall be.

2 Methodology

Discussions were held with UofG personnel to review existing waste management and recycling programs implemented on campus. Based on information gathered by UofG, a waste audit schedule was developed. The waste audit was performed over seven (7) days, as summarized in Table 1:

Table 1: 2019 Waste Audit Sample Schedule

Date	Building/Location
Mar. 18, 2019	Maids Hall, Johnson Hall, Watson Hall, Lambton Hall
Mar. 19, 2019	MacKinnon Building, McLaughlin Library
Mar. 20, 2019	Alexander Hall, Science Complex & McNaughton
Mar. 21, 2019	OVC Large Animal Clinic, OVC Pathobiology & Animal Health Lab, Biodiversity Institute of Ontario
Mar. 22, 2019	MacDonald Hall, MacDonald Institute, Reynolds & J.D MacLachlan Buildings
Mar. 25, 2019	South Residence, East Residence
Mar. 26, 2019	University Centre, Creelman Hall

In coordination with the UofG staff, 48-hr samples were collected from each residence and 24-hr samples were collected from all remaining buildings. Results were adjusted to 24-hr samples throughout the report. Bags of garbage were collected and labelled describing the functional area within the building that generated the waste material, including office areas, public areas, classrooms, washrooms, labs, kitchenettes/break rooms, food service kitchens, dining areas and residences.

The collected bags of labelled wastes were brought to a designated collection and waste audit area by UofG staff. The weights of waste materials from each building and functional area were recorded. Refer to Appendix A for a copy of the Scale Calibration Certificate.

Waste materials were then unloaded, sorted into individual waste categories, weighed and disposed of in the appropriate garbage or recycling bins. Waste samples were sorted by a qualified team from Waste Reduction Group. Materials source separated by UofG for recycling were not collected and categorized during the audit however the annual quantity of all diverted materials was reviewed and included in the audit results.

Waste material categories were established prior to the audit based on O.Reg.103/94 requirements for source separation at educational institutions, including:

- Aluminum food or beverage cans (including cans made primarily of aluminum);
- Cardboard (corrugated);
- Fine paper;
- Glass bottles and jars for food or beverages;
- Newsprint; and
- Steel food or beverage cans (including cans made primarily of steel).

In addition to these standard categories other important waste streams such as other mixed containers (PET, HDPE, polypropylene, aseptic), organic wastes, paper towels, mixed plastics, Styrofoam, yard waste, electronic waste, scrap wood, scrap metal and special wastes (i.e. batteries, bulbs and ballasts) were included depending on what auditors found in the samples.

3 Waste Audit Results

3.1 Garbage Quantities & Distribution

A key aspect of O. Reg. 102/94 is for waste generators to gain a good understanding of the areas of their operation that generate the most waste, how it is generated, as well as the waste composition. One can use this information to focus their recycling and waste reduction efforts efficiently and effectively.

Table 2 summarizes the quantity and distribution of garbage materials collected for the waste audit.

Table 2: Quantity & Distribution of Garbage Sample

Building Name/Location	Waste Audit Garbage Sample	
	Sample Weight (kg)	Distribution (%)
University Centre	355.46	32.9%
Creelman Hall	116.84	10.8%
McLaughlin Library	114.41	10.6%
East Residence	107.86	10.0%
Science Complex & McNaughton	59.90	5.5%
Lambton Hall	55.69	5.1%
MacKinnon Hall	51.05	4.7%
OVC Large Animal Clinic	46.62	4.3%
South Residence	42.33	3.9%
Alexander Hall	37.89	3.5%
Biodiversity Institute of Ontario	28.62	2.6%
Maids Hall	27.92	2.6%
MacDonald Hall	15.89	1.5%
Reynolds & J.D MacLachlan Buildings	11.16	1.0%
Watson Hall	6.77	0.6%
Johnson Hall	3.14	0.3%
Total	1081.53	100.0%

Therefore, University Centre, Creelman Hall, McLaughlin Library, East Residence, Science Complex & McNaughton and Lambton Hall generated the most garbage, representing approximately 75% of the waste audit garbage sample.

In addition, a review of UofG's activities identified the following functional areas within campus buildings:

- Office/Administrative Areas
- Public Areas
- Classrooms
- Washrooms
- Laboratories
- Kitchenette/Break Areas
- Hospitality – Front of House
- Hospitality – Back of House
- Residences

Table 3 ranks the quantity of garbage generated per functional area based on the waste audit results.

Table 3: Garbage Generated per Functional Area

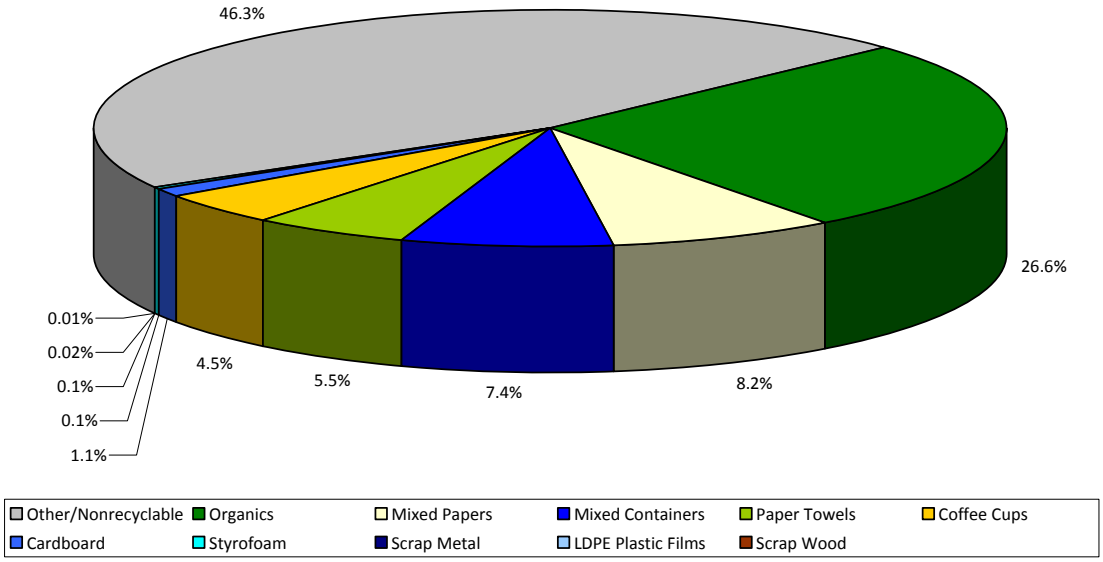
Building Name	Waste Audit Garbage Sample	
	Sample Weight (kg)	Distribution (%)
Hospitality – Front of House	239.36	22.1%
Hospitality – Back of House	232.94	21.5%
Residences	181.76	16.8%
Public Areas	168.24	15.6%
Unlabelled	86.51	8.0%
Classrooms	66.79	6.2%
Washrooms	31.65	2.9%
Labs	27.83	2.6%
Office Areas	26.51	2.5%
Kitchenette/Break Area	19.96	1.8%
Total	1081.53	100.0%

Therefore hospitality areas, residences and public areas generated the most garbage on campus, representing approximately 76% of the sample.

3.2 Garbage Composition

The total weight of garbage collected and sorted for the audit was approximately 1081.53 kg. Figure 1 summarizes the overall combined garbage composition from the waste audit.

Figure 1: Overall Garbage Composition



Summary tables for each building per waste generation functional area, including waste composition, weights and percentages, are included in Appendix B. Refer to Appendix A for a photo summary of typical materials found during the sorting activity.

Table 4 summarizes the largest primary categories (i.e. >5%) of waste materials per functional area based on the total amount of garbage sorted for the waste audit:

Table 4: Primary Material Categories per Functional Area

Functional Area	Percent of Sample (By Weight)	Non-recyclable	Organics	Mixed Papers	Mixed Containers	Paper Towels	Coffee Cups
Hospitality – Front of House	22.1%	35.4%	40.3%	15.4%			
Hospitality – Back of House	21.5%	42.3%	46.0%				
Residences	16.8%	37.7%	23.0%	10.1%	21.4%		
Public Areas	15.6%	62.3%	11.0%	6.2%	7.9%		8.3%
Unlabelled	8.0%	63.3%	7.1%			12.8%	9.6%
Classrooms	6.2%	62.8%			9.7%		13.7%
Washrooms	2.9%	9.4%	10.8%	6.4%		70.7%	
Labs	2.6%	98.3%					
Office Areas	2.5%	39.1%	20.4%	14.1%	6.0%	11.6%	7.0%
Kitchenette/Break Areas	1.8%	33.5%	29.8%	7.1%	8.4%	13.3%	6.8%
Total	100.0%	46.3%	26.6%	8.2%	7.4%	5.5%	

Organic food wastes were found in high quantities in the garbage stream from most areas of the university (except classrooms and labs) representing 26.6% of the overall garbage stream, or approximately 546 MT annually. Organics were present in very high quantities in hospitality areas, exceeding 40%. An organics program is implemented in some areas on campus. Results suggest that program expansion, improved collection systems, improved bin labels, program promotion and/or improved student/employee/cleaner education may be required to capture more of this material. Organic food wastes are currently not a mandatory recyclable material per O.Reg.102/94.

Mixed papers and mixed containers were found in high quantities in the garbage stream, representing a combined 15.7% of the overall garbage stream (or approximately 321 MT annually). UofG has implemented a mixed recycling program that accepts both mixed papers and mixed containers. Results suggest that improved collection systems, improved labels, program promotion and/or improved student/employee/cleaner education may be required to capture more of these materials. Fine paper and newsprint as well as aluminum, steel and glass food and beverage containers are mandatory recyclable materials per O.Reg.102/94 for educational institutions.

Approximately 5.5% of the garbage stream was comprised of paper towels, or approximately 114 MT annually. The majority of paper towels were found in washroom areas wastes. UofG may wish to investigate the feasibility of implementing a paper towel recycling program to divert this material from landfill. Paper towels are currently not a mandatory recyclable material per O.Reg.102/94.

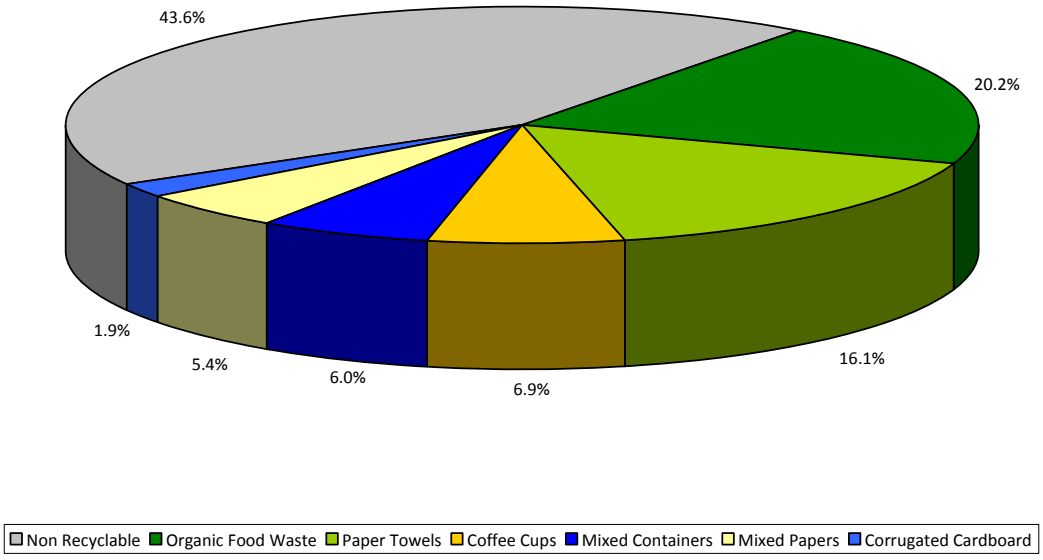
3.3 Garbage Composition per Audit Location

The garbage composition determined for each building/location based on 24-hour sample results is presented below.

3.3.1 Maids Hall

Figure 2 summarizes the overall garbage composition determined at Maids Hall.

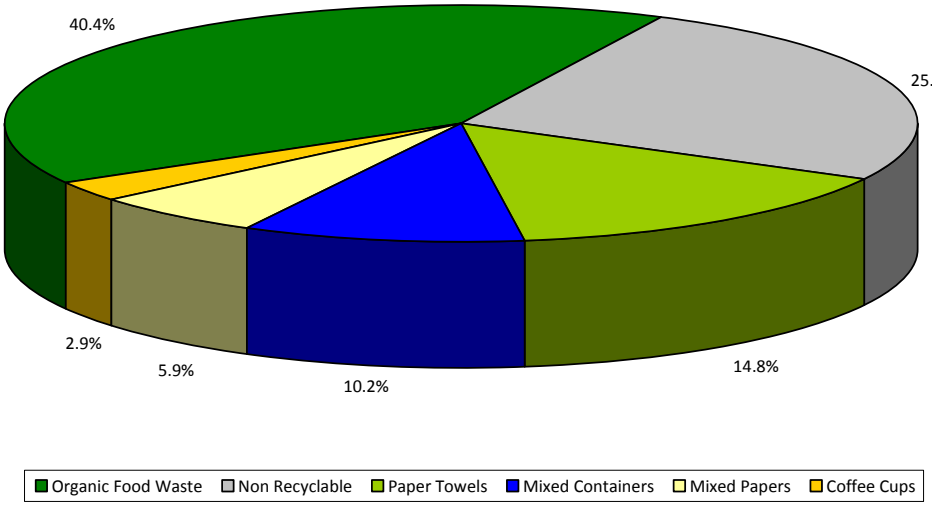
Figure 2: Maids Hall Garbage Composition



3.3.2 Johnson Hall

Figure 3 summarizes the overall garbage composition determined at Johnson Hall.

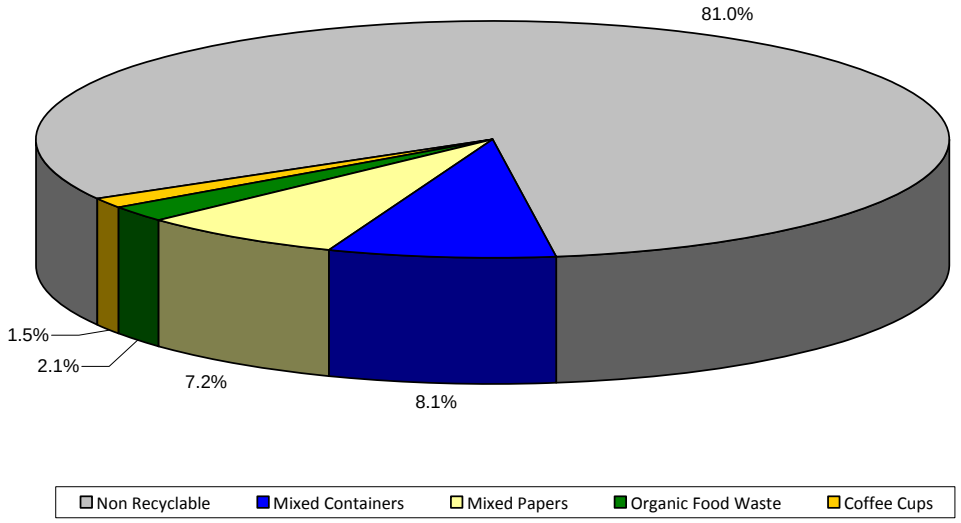
Figure 3: Johnson Hall Garbage Composition



3.3.3 Watson Hall

Figure 4 summarizes the overall garbage composition determined at Watson Hall.

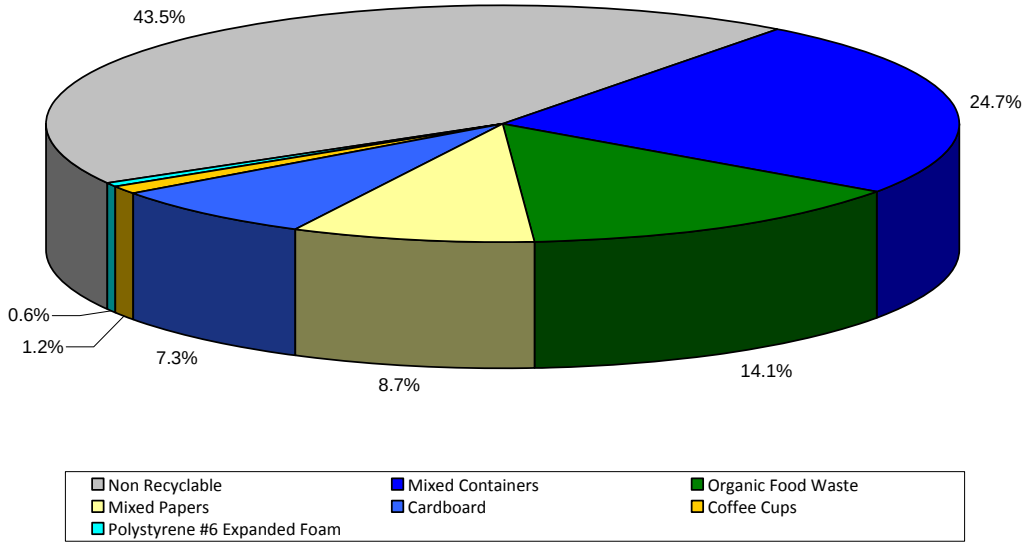
Figure 4: Watson Hall Garbage Composition



3.3.4 Lambton Hall

Figure 5 summarizes the overall garbage composition determined at Lambton Hall.

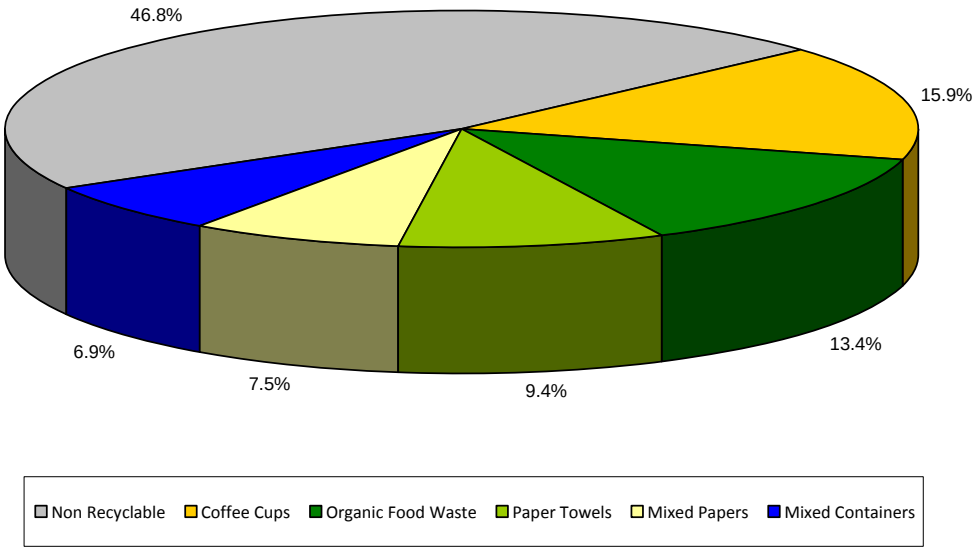
Figure 5: Lambton Hall Garbage Composition



3.3.5 MacKinnon Building

Figure 6 summarizes the overall garbage composition determined at the MacKinnon Building.

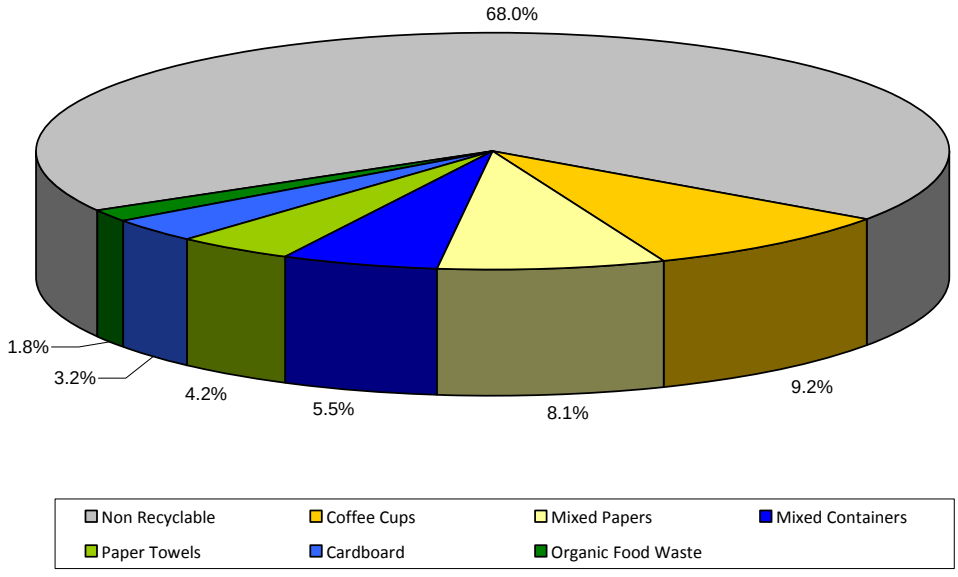
Figure 6: MacKinnon Garbage Composition



3.3.6 McLaughlin Library

Figure 7 summarizes the overall garbage composition determined at McLaughlin Library.

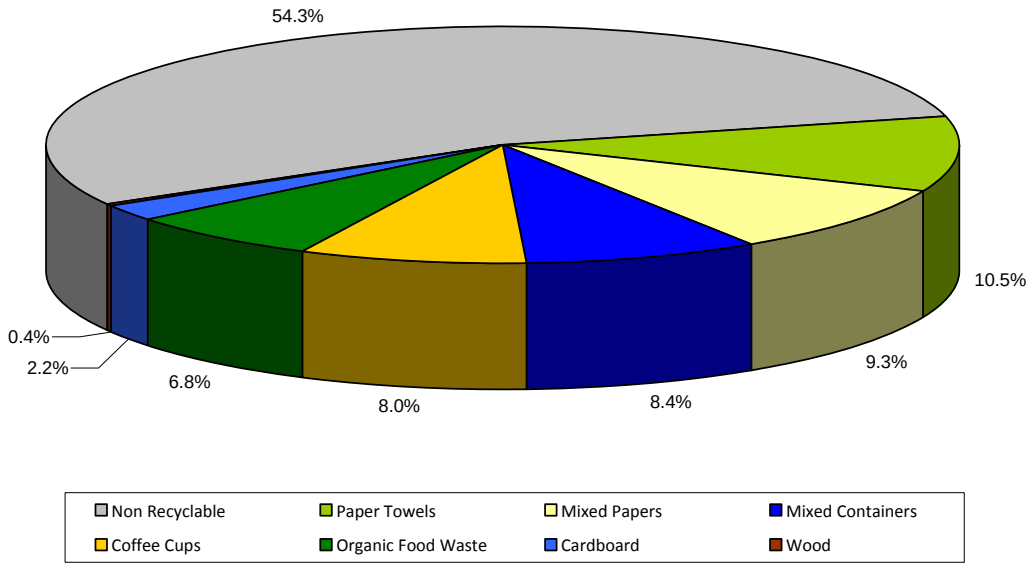
Figure 7: McLaughlin Library Garbage Composition



3.3.7 Alexander Hall

Figure 8 summarizes the overall garbage composition determined at Alexander Hall.

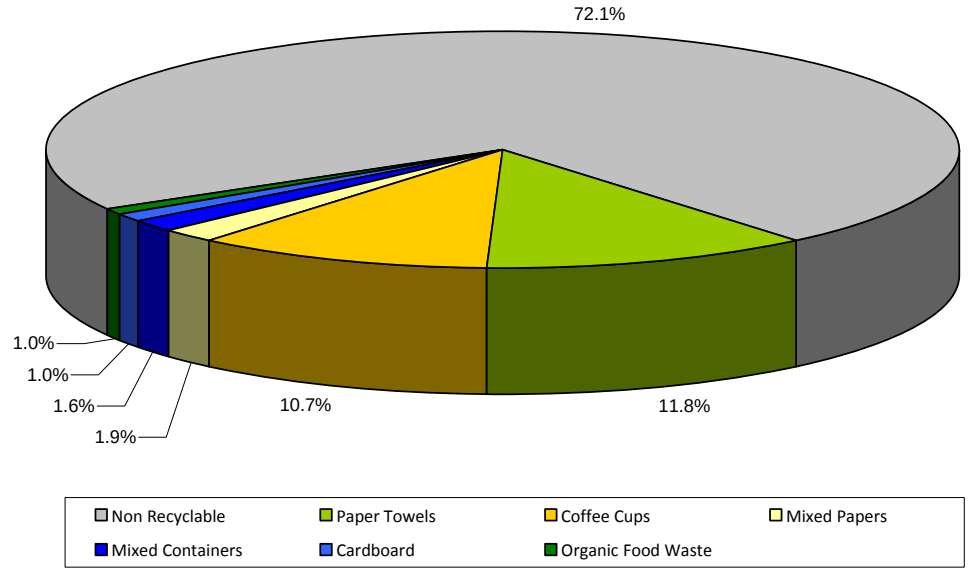
Figure 8: Alexander Hall Garbage Composition



3.3.8 Science Complex & McNaughton

Figure 9 summarizes the overall garbage composition determined at the Science Complex & McNaughton.

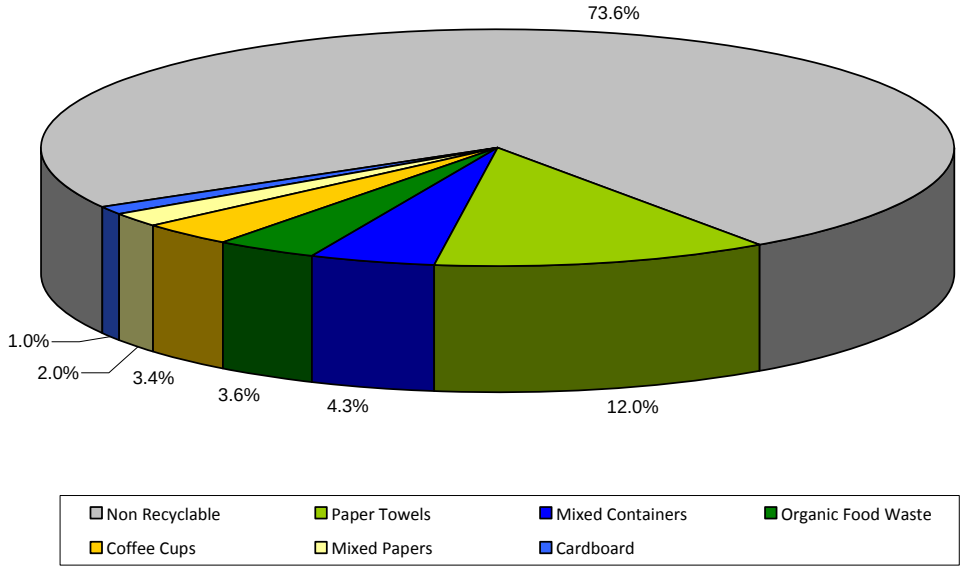
Figure 9: Science Complex & McNaughton Garbage Composition



3.3.9 OVC Large Animal Clinic

Figure 10 summarizes the overall garbage composition determined at the OVC Large Animal Clinic.

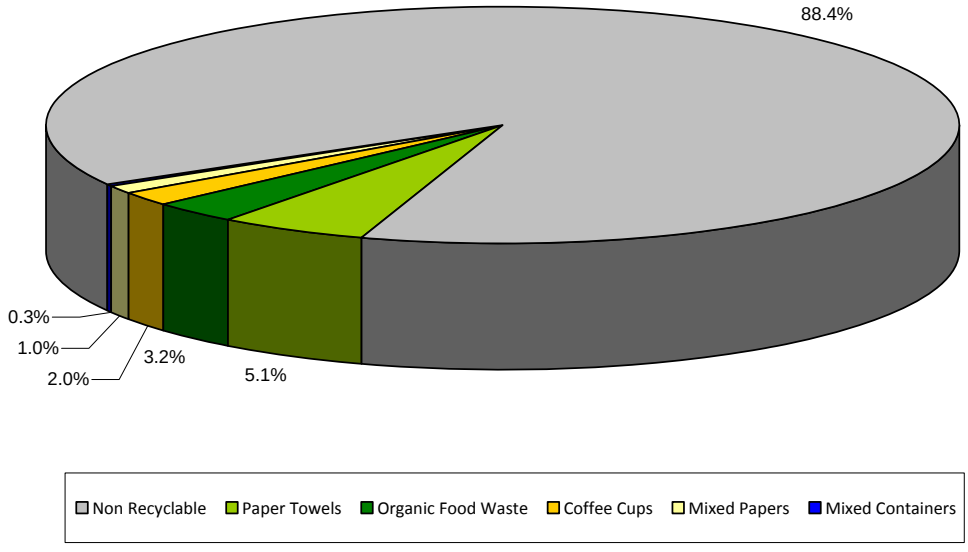
Figure 10: OVC Large Animal Clinic Garbage Composition



3.3.10 Biodiversity Institute of Ontario

Figure 11 summarizes the overall garbage composition determined at the Biodiversity Institute of Ontario.

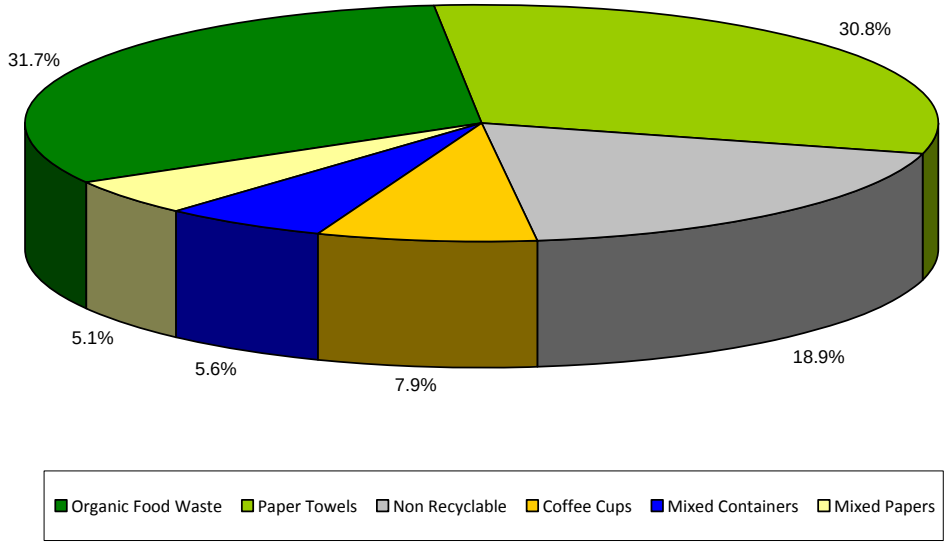
Figure 11: Biodiversity Institute of Ontario Garbage Composition



3.3.11 MacDonald Hall

Figure 12 summarizes the overall garbage composition determined at MacDonald Hall.

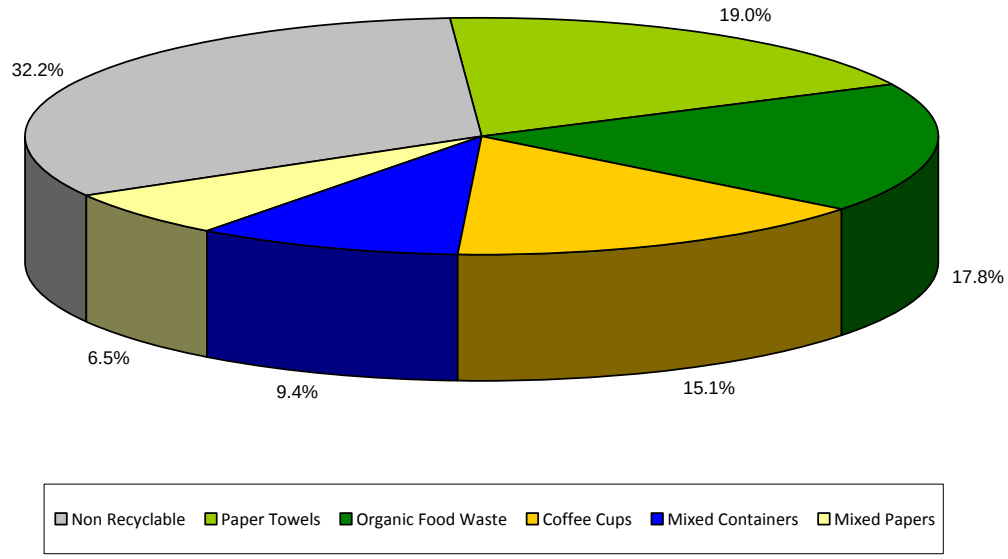
Figure 12: MacDonald Hall Garbage Composition



3.3.12 Reynolds & J.D. MacLachlin Buildings

Figure 13 summarizes the overall garbage composition determined at Reynolds & J.D. MacLachlin Buildings.

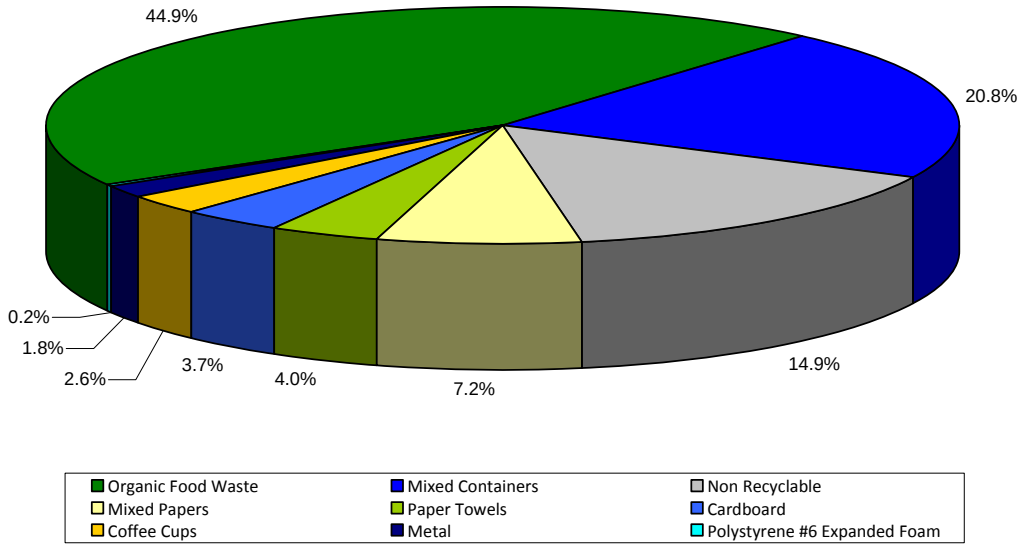
Figure 13: Reynolds & J.D. MacLachlin Buildings Garbage Composition



3.3.13 South Residence

Figure 14 summarizes the overall garbage composition determined at South Residence.

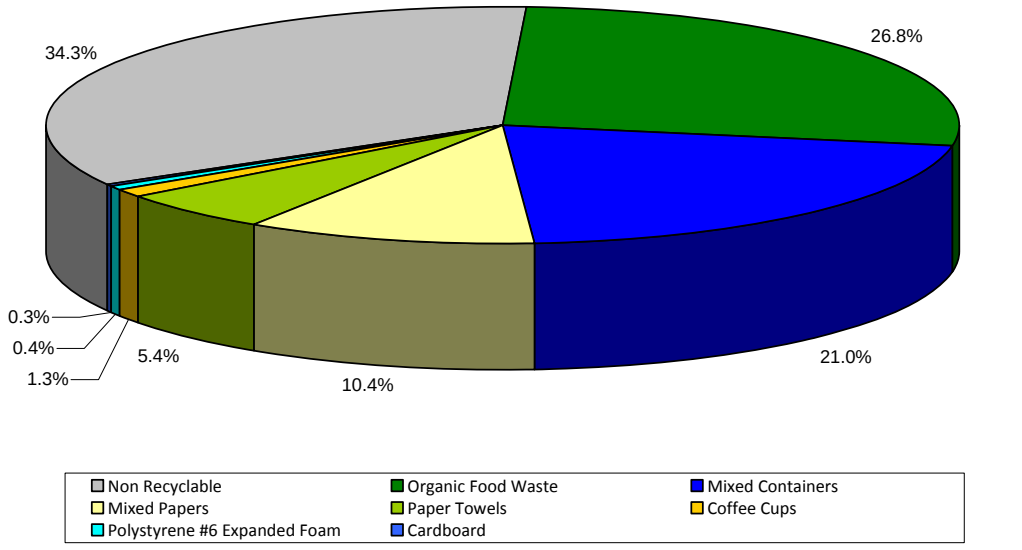
Figure 14: South Residence Garbage Composition



3.3.14 East Residence

Figure 15 summarizes the overall garbage composition determined at East Residence.

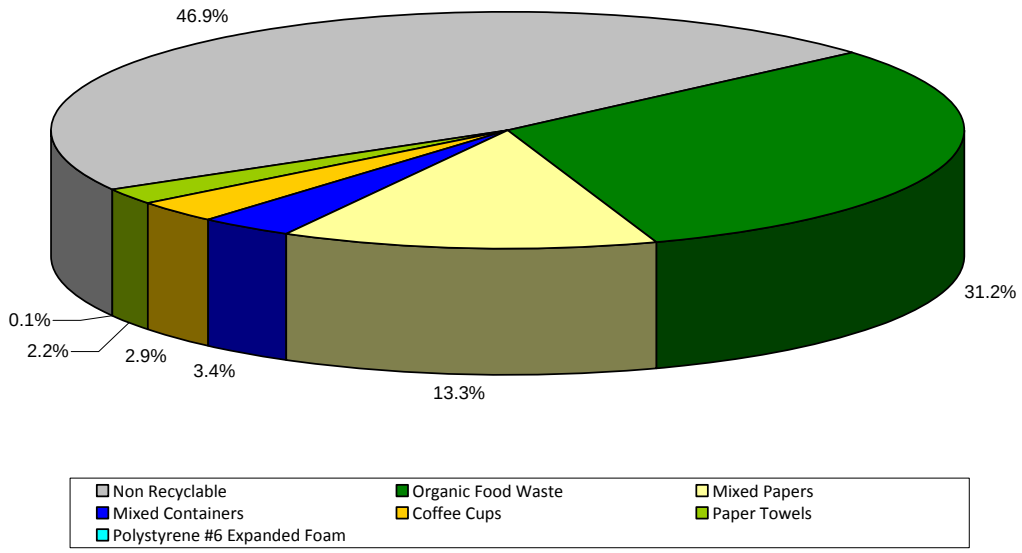
Figure 15: East Residence Garbage Composition



3.3.15 University Centre

Figure 16 summarizes the overall garbage composition determined at University Centre.

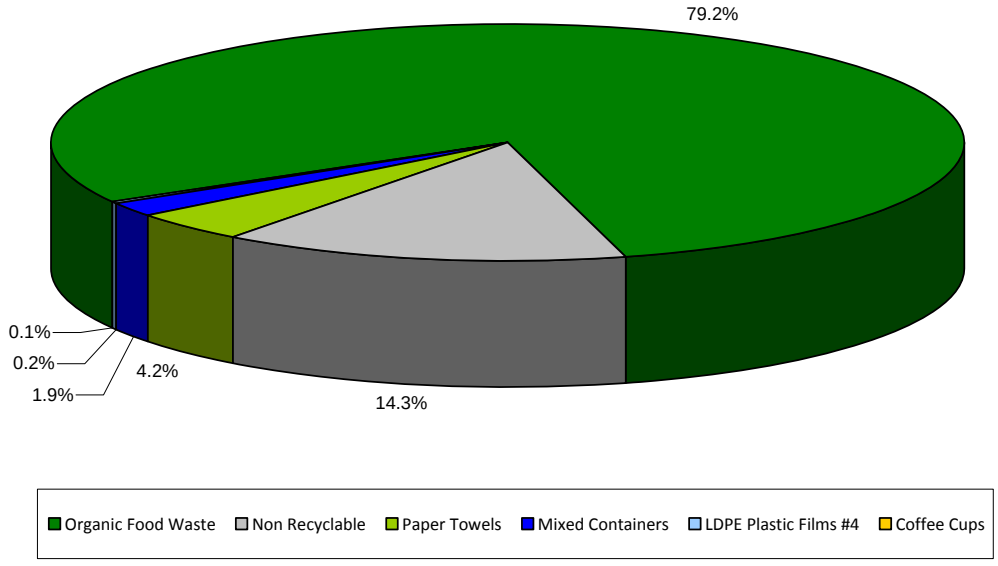
Figure 16: University Centre Garbage Composition



3.3.16 Creelman Hall

Figure 17 summarizes the overall garbage composition determined at Creelman Hall.

Figure 17: Creelman Hall Garbage Composition



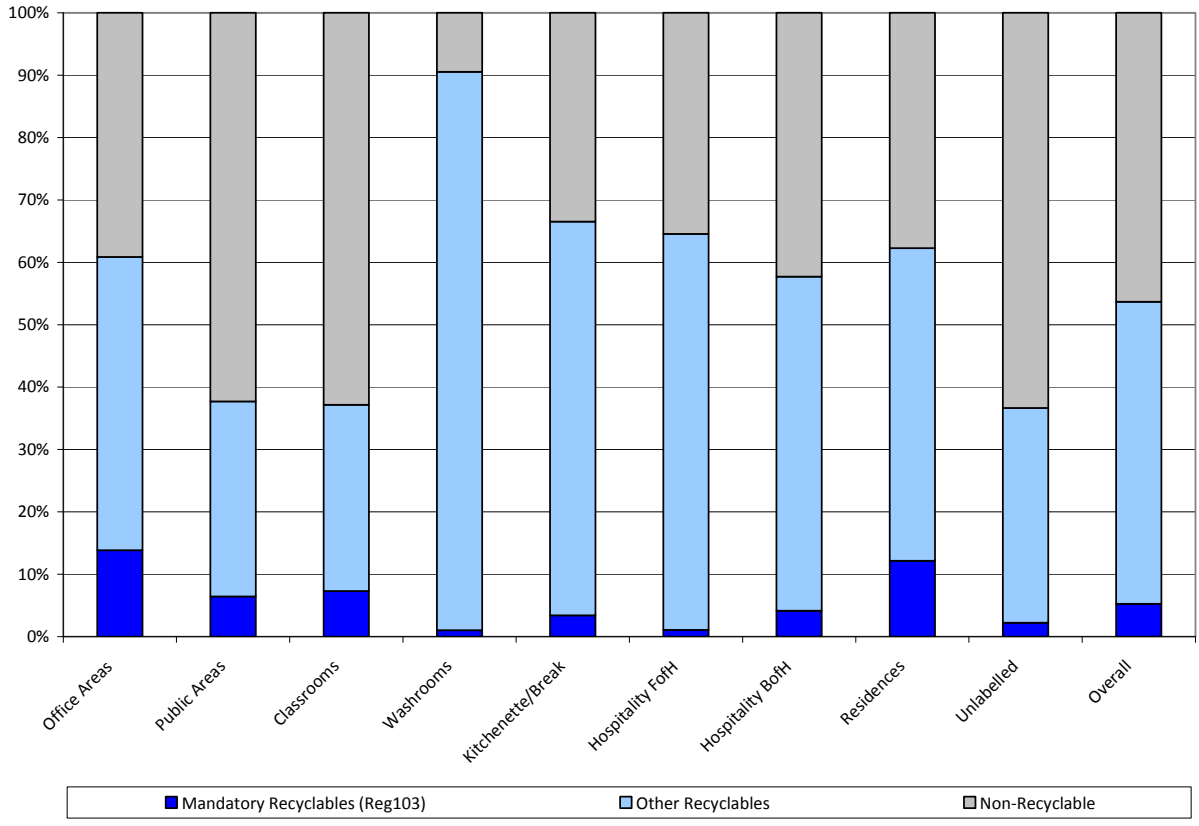
3.4 Percentage of Recyclables in Garbage

O.Reg. 103/94 requires that 'educational institutions' source separate the following materials (at a minimum):

- Aluminum food or beverage cans (including cans made primarily of aluminum);
- Cardboard (corrugated);
- Fine paper;
- Glass bottles and jars for food or beverages;
- Newsprint; and
- Steel food or beverage cans (including cans made primarily of steel).

Figure 18 summarizes the quantity of these 'mandatory recyclable' materials found in the waste audit garbage samples compared to 'other recyclable' materials (i.e. organics, paper towels, etc) and 'non-recyclable' materials.

Figure 18: Percent Recyclables in Garbage Stream



The data suggests that UofG has a low 'mandatory' recyclable content (i.e. 5.3%) in the combined garbage of the university. The main 'mandatory' recyclable materials were fine papers, glass bottles and cardboard. 'Other Recyclables' represented 48.4% of the sample and consisted mainly of organics, non-mandatory paper fibres and paper towels. Non-recyclables represented approximately 46.3% of the sample.

3.5 Mixed Recycling Quantity & Distribution

In total, 343.19 kg of mixed recyclables were collected and audited for the waste audit. The breakdown of the quantities and distribution of recyclables generated per functional area of the university are summarized in Table 5.

Table 5: Mixed Recycling Generated per Functional Area

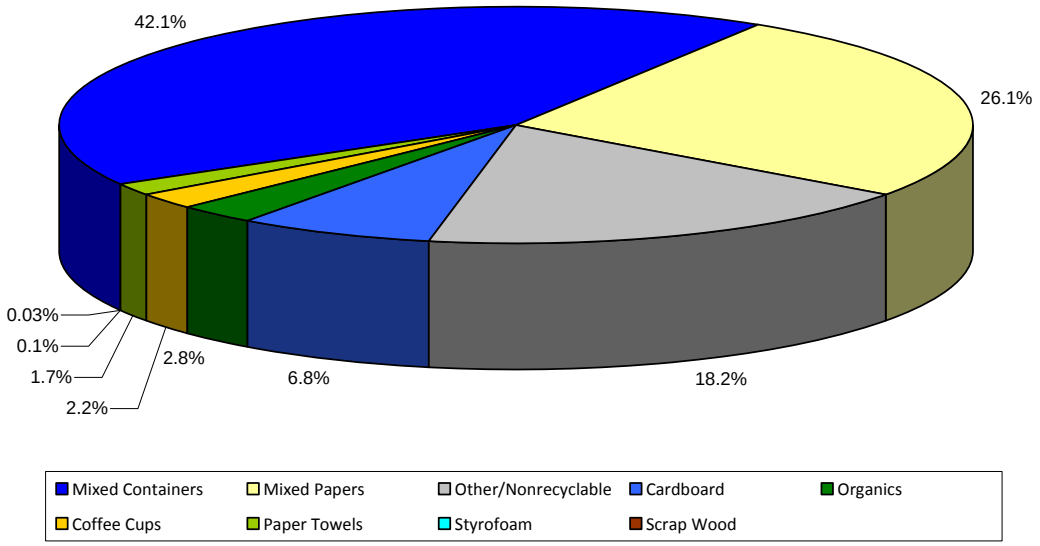
Functional Area	Garbage Sample	
	kg	%
South Residence	47.62	13.9%
University Centre	45.75	13.3%
McLaughlin Library	42.73	12.5%
Science Complex & McNaughton	35.71	10.4%
MacKinnon Hall	25.24	7.4%
Biodiversity Institute of Ontario	24.03	7.0%
East Residence	23.73	6.9%
OVC Pathobiology & Animal Health Lab	15.44	4.5%
Creelman Hall	15.17	4.4%
Lambton Hall	14.58	4.2%
Johnson Hall	14.31	4.2%
MacDonald Institute	11.10	3.2%
MacDonald Hall	6.53	1.9%
OVC Large Animal Clinic	5.49	1.6%
Maids Hall	5.24	1.5%
Reynolds & J.D MacLachlan Buildings	4.40	1.3%
Alexander Hall	4.33	1.3%
Watson Hall	1.80	0.5%
Total Waste Generated	**343.19**	**100%**

Therefore South Residence, University Centre, McLaughlin Library, Science Complex & McNaughton generated the most mixed recyclables, accounting for approximately 50% of the mixed recycling sample.

3.6 Mixed Recycling Composition

Figure 19 summarizes the overall mixed recycling composition generated at UofG. Summary tables with data from each of the waste generation functional areas, including material weights and percentages, are included in Appendix B.

Figure 19: Overall Mixed Recycling Composition



Approximately 75% of the mixed recycling stream consisted of mixed containers, mixed papers and cardboard. The mixed recycling stream was determined to have a contamination rate of approximately 25%. Contamination was due to the presence non-recyclable materials, organics, coffee cups, paper towels, Styrofoam and scrap wood.

5 Diversion Programs & Waste Systems

5.1 Waste Diversion Programs

Waste diversion programs have been implemented at UofG to reduce/reuse/recycle/compost a wide range of materials as described below.

Cardboard: Cardboard recycling is provided across campus. Cardboard boxes are flattened and placed in dedicated bins located across campus. Cardboard bins are serviced by private contractor as required.

Mixed Recycling: Mixed recycling accepts both mixed containers and mixed papers. Mixed containers include assorted plastics food and beverage containers (PET, HDPE, LDPE, PP, and PS), aluminum and metal cans, glass food and beverage containers, gable top containers and aseptic containers (i.e. tetra paks, etc). Mixed papers include a range of items such items as (but not limited to) newspapers, fine papers, envelopes, magazines, brochures, boxboard, packing paper, shipping/receiving supplies, paper bags and other clean food paper products. Mixed recycling is collected throughout campus in dedicated recycle depots, primarily concentrated in high waste generating areas. Collected materials are disposed into dedicated bins serviced by private contractor as required.

Confidential Papers: Confidential papers are collected mainly in office/administrative areas in secure consoles or totes. All shredded materials were recycled.

Scrap Metals: Recyclable scrap metals are collected by UofG staff. Scrap metal recycling service is provided by a private contractor as required.

Scrap Woods: Recyclable scrap woods are collected by UofG staff. Scrap wood recycling service is provided by a private contractor as required.

Electronics Wastes: Electronic wastes are collected across campus and stored in dedicated locations. Service was provided by private contractor as required.

Bulbs & Ballasts: Bulbs and ballasts are collected across campus and stored in dedicated totes. Service is provided by private contractor as required.

Batteries: Batteries are collected in dedicated containers across campus. Collected batteries are stored in dedicated totes. Service is provided by private contractor as required.

Oil & Grease: Oil & grease is collected from food service areas across campus, and stored in dedicated containers. Service is provided by private contractor as required.

Textbooks: In 2018, UofG collected numerous textbooks, all of which were donated, repurposed and/or recycled.

LCBO/Beer Store Returns: UofG returns glass beer, wine and spirit bottles via the LCBO/Beer Store return program.

Manure and Organics: Manure is collected in some locations on-campus for composting. Organic based food waste is collected in some locations for composting.

Table 6 summarizes the estimated annual amount of waste materials diverted from landfills due to waste diversion programs implemented at the university.

Table 6: 2018 Waste Diversion Summary

Waste Material	Diversion Program	Total Diversion	
		Metric Tonnes	Percent
Manure	Composted	1812.90	73.2%
Mixed Recycling	Recycled	315.62	12.8%
Papers (Incl. Confidential)	Recycled	123.50	5.0%
Scrap Metals	Recycled	53.26	2.2%
Cardboard	Recycled	46.92	1.9%
Organics	Composted	33.00	1.3%
Contaminated Wood/Paint	Recycled	28.14	1.1%
Oil & Grease	Recycled	18.14	0.7%
Scrap Wood	Recycled	15.42	0.6%
Electronic Wastes	Recycled	14.98	0.6%
Textbooks	Reused	8.35	0.3%
Beverage Bottles	Reused	3.85	0.2%
Batteries	Recycled	1.06	0.04%
Bulbs & Ballasts	Recycled	0.31	0.01%
Total Waste Material Diverted		**2475.45**	**100%**

Therefore, the total amount of waste material diverted from landfill in 2018 was approximately 2475 metric tonnes. Evidence of annual quantity data obtained from UofG is provided in Appendix B. Waste diversion programs implemented on campus exceed the minimum requirements of O.Reg.103/94 for educational institutions.

5.2 Waste Disposal Systems

Regular solid non-hazardous waste is collected across campus by UofG staff and placed in dedicated garbage bins located at designated waste handling areas. The City of Guelph is responsible for the collection of waste. The total quantity of solid non-hazardous waste disposed to landfill in 2018 was estimated to be approximately 2050.74 metric tonnes.

6 Performance Metrics

6.1 Waste Diversion Rate

Waste Diversion Rate is the percentage of waste materials that a facility diverts from landfill due to reduce, reuse and recycling (i.e. 3Rs) programs versus the total amount of waste generated (i.e. 3Rs plus disposed). According to the MECP, Waste Diversion Rate is calculated as follows:

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

Based on the total annual amount of waste generated and materials reduced, reused and recycled, the 2018 waste diversion rate was determined to be approximately 55%. Table 7 summarizes the quantities of wastes diverted and disposed. UofG's 2018 waste diversion rate is slightly less than the MECP provincial objective of 60% waste diversion.

Table 7: Quantities of Materials Diverted & Disposed

Material	Total Waste	
	Metric Tonnes	Percent
Disposed to Landfill	2050.74	45.3%
Materials Reused	12.20	0.3%
Materials Recycled	617.35	13.6%
Materials Composted	1845.90	40.8%
Total Waste Generated	4526.19	100%
WASTE DIVERSION RATE		**54.7%**

If 60% of all divertible materials found in the garbage stream were captured and diverted from landfill appropriately, the university's waste diversion rate would increase to approximately 68%.

6.2 Capture Rate

Capture rate is the proportion of divertible waste materials which are successfully diverted from disposal compared to the total amount of the divertible waste materials generated. According to the Recycling Council of Ontario, Capture Rate is calculated as follows:

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

Thus, capture rate assists in determining the effectiveness of recycling programs. Table 8 summarizes the capture rate for the main divertible materials at UofG.

Table 8: Capture Rate Summary

Divertible Material	Material Generated Metric Tonnes	3Rs Quantity Captured Metric Tonnes	Capture Rate Percent
Cardboard	91.13	68.28	74.9%
Mixed Recycling	536.49	215.41	40.2%
Papers (Incl. Confidential)	123.50	123.50	100.0%
Scrap Metals	54.68	53.26	97.4%
Scrap Wood	15.69	15.42	98.3%
Electronic Wastes	14.98	14.98	100.0%
Bulbs & Ballasts	0.31	0.31	100.0%
Batteries	1.06	1.06	100.0%
Contaminated Wood/Paint	28.14	28.14	100.0%
Oil & Grease	18.14	18.14	100.0%
Textbooks	8.35	8.35	100.0%
Beverage Bottles	3.85	3.85	100.0%
Manure	1812.90	1812.90	100.0%
Organics	579.19	33.00	5.7%
Overall Facility	3288.39	2396.60	72.9%

Capture rates of most materials are very high ranging from approximately 75% to 100%. Mixed recycling and organics had the only values less than 75%, being approximately 40% and 6% respectively. The overall capture rate of all recyclables on campus was determined to be 73%.

6.3 Year over Year Change in Waste Generation

Waste diversion rate and capture rate do not always demonstrate how effective a site's 3R programs are operating. This is due to the continual change of many important factors involved in waste and recyclable material generation on campus, such as number of students enrolled, floor area of buildings, etc. As student numbers change or more buildings are added to the campus, quantities of waste and recyclables change making it difficult to have a direct comparison of data between years. It is recommended that UofG start tracking 'Year over Year' changes in the amount of wastes disposed and/or materials recycled per standard unit. This allows direct comparison of data from year to year, thus assisting the university in gaining an understanding of the effectiveness of their waste diversion programs. For UofG, the most applicable standard unit is Full-time equivalent students, or FTE.

6.3.1 Year-over-Year Change in Diverted Quantities

The 'Year-over-Year Change in Diverted Quantities' is the indicator of the amount of materials diverted from disposal through reduce, reuse and/or recycle activities per FTE compared to previous data. Table 9 summarizes the results for the 2018 year. A positive year-over-year change indicates waste diversion programs are improving over time.

Table 9: Yr-over-Yr Change in Waste Diversion Quantities

Period	Total Materials Diverted (MT)	FTE	Annual Diverted Quantity (kg/FTE)	Yr-over-Yr Change in Diverted Quantity (kg)
2018	2475.45	24,191	102.33	--

6.3.2 Year-over-Year Change in Garbage Disposed

The 'Year over Year Change in Garbage Disposed' is the indicator of the amount of reduction in waste materials disposed to landfill due to waste diversion activities on campus. Table 10 summarizes the results for the 2018 year. A reduction in the year over year value will indicate the university is continually reducing wastes disposed to landfill.

Table 10: Yr-over-Yr Change in Garbage Disposed

Period	Total Materials Disposed to Landfill (MT)	FTE	Annual Disposed Quantity (kg/FTE)	Yr-over-Yr Change in Disposed Quantity (kg)
2018	2050.74	24,191	84.77	--

7 Waste Audit Summary & Waste Reduction Work Plan

Refer to Appendix C and Appendix D for the Waste Audit Summary and the Waste Reduction Work Plan respectively. The last page of each set of forms in the appendices need to be signed by an authorized person at the University. According to O.Reg. 102/94, the Waste Reduction Work Plan

(Appendix D) or a summary of the plan must be posted at the University in a place where staff/students can review it. If a summary is posted, the entire Work Plan should also be made available for review by any staff/student upon request.

8 Conclusions & Recommendations

Based on the results of the solid non-hazardous waste audit conducted for UofG, the following conclusions can be made. Recommendations presented below are intended to assist UofG in maximizing their waste diversion potential.

- In 2018, it was estimated that UofG disposed of approximately 2050.74 tonnes of solid waste in landfills. Approximately 2475.45 tonnes of waste materials were diverted through existing waste diversion programs. This represents a waste diversion rate of approximately 54.7%. The provincial objective is 60% waste diversion.
- If 60% of all divertible materials found in the garbage stream were captured and diverted from landfill appropriately, the university's waste diversion rate would increase to approximately 68%.
- UofG maintains waste diversion programs for cardboard, mixed recycling, papers (including confidential papers), scrap metals, scrap woods, electronics, bulbs, batteries, organics, oil and grease, textbook donations, beverage bottle returns, manure and contaminated wood/paint. These programs exceed the minimum requirements of O.Reg.103/94 for educational institutions.
- Based on the waste audit results, University Centre, Creelman Hall, McLaughlin Library, East Residence, Science Complex & McNaughton and Lambton Hall generated the most garbage, representing approximately 75% of the waste audit garbage sample. Functional areas within the audited buildings that generated the most garbage included hospitality areas, residences and public areas, representing approximately 76% of the sample.
- UofG has a low 'mandatory' recyclable content (i.e. 5.3%) in the combined garbage of the university. The main 'mandatory' recyclable materials were fine papers, glass bottles and cardboard. 'Other Recyclables' represented 48.4% of the sample and consisted mainly of organics, non-mandatory paper fibres and paper towels. Non-recyclables represented approximately 46.3% of the sample.
- Capture rates of most materials are very high ranging from approximately 75% to 100%. Mixed recycling and organics had the only values less than 75%, being approximately 40% and 6% respectively. The overall capture rate of all recyclables on campus was determined to be 73%.
- It is recommended that UofG start tracking 'Year over Year' changes in the amount of wastes disposed and/or materials recycled per standard unit. This allows direct comparison of data from year to year, thus assisting the university in gaining an understanding of the effectiveness of their waste diversion programs. For UofG, the most applicable standard unit is Full-time equivalent students, or FTE.
- Based on the waste audit results, it was estimated that approximately 26.6% (or 546 tonnes) of solid waste disposed to landfill consisted of organic materials (i.e. food wastes). Organics were found in relatively high amounts in garbage streams from most functional areas on campus

(except classrooms and labs). An organics compost program exists at UofG in designated areas. The results suggest that an expanded program, improved collection systems, improved signage, program promotion and/or student/staff education programs may be required to improve the capture rate of this material. Organics are currently not a mandatory recyclable material per O.Reg.103/94.

- Based on the waste audit results, it was estimated that approximately 15.7% (or 321 tonnes) of solid waste disposed to landfill consisted of mixed recycling (i.e. mixed containers and mixed papers). Mixed containers consist of aluminum cans, glass jars, plastic bottles, tetra packs, milk cartons, etc). Mixed papers consist of fine papers, newsprint, boxboard, etc. A mixed recycling program exists at UofG. The data suggests that better collection systems, improved signage, program promotion and/or student/staff education programs may be required to improve the capture rate of this material. Fine papers and newsprint, as well as glass, aluminum and steel food and beverage containers are mandatory recyclables per O.Reg.103/94.
- Mixed papers and mixed containers were found in high quantities in the garbage stream, representing a combined 15.7% of the overall garbage stream (or approximately 321 MT annually). UofG has implemented a mixed recycling program that accepts both mixed papers and mixed containers. Results suggest that improved collection systems, improved labels, program promotion and/or improved student/employee/cleaner education may be required to capture more of these materials. Fine paper and newsprint as well as aluminum, steel and glass food and beverage containers are mandatory recyclable materials per O.Reg.102/94 for educational institutions
- Based on the waste audit results, it was estimated that approximately 5.5% (or 114 tonnes) of solid waste disposed to landfill consisted of paper towels. UofG may wish to investigate the feasibility of implementing a paper towel recycling program. Often it can be combined with an existing cardboard and/or organics program depending on hauler requirements. Alternatively, UofG may wish to investigate the feasibility of replacing paper towels with automatic air dryers and/or reusable linen rolls. Paper towels are not a mandatory recyclable per O.Reg.103/94.
- In total, 343.19 kg of mixed recyclables were collected and audited for the waste audit. South Residence, University Centre, McLaughlin Library, Science Complex & McNaughton generated the most mixed recyclables, accounting for approximately 50% of the mixed recycling sample.
- Approximately 75% of the mixed recycling stream consisted of mixed containers, mixed papers and cardboard. The mixed recycling stream was determined to have a contamination rate of approximately 25%. Contamination was due to the presence non-recyclable materials, organics, coffee cups, paper towels, Styrofoam and scrap wood
- It is recommended that UofG conduct studies to verify the density of wastes disposed to landfill.
- It is recommended that a study be conducted to verify mixed recycling weights as well as to conduct an inventory of bins on-campus. It is recommended that the total number of totes picked-up per week be verified (per season to account for temporal variability).
- It is recommended that UofG conduct studies to add and improve reduction, reuse, recycling weights to improve the university's diversion rate. For example, waste reduction credits can be

calculated for the university's wood pallet, used furniture, yard waste, double-sided printing policy, refillable mug program and refillable water bottle station 3Rs programs.

- Continue to make use of multi-compartment containers (i.e. recycling depots) for waste collection and recycling as much as possible. Remove all "solitary" waste bins on campus. We recommend only having waste bins that are attached to or close to multi-compartment recycling containers.
- It is recommended that signs be continually updated on all garbage and recycling bins to assist students/staff in sorting wastes easily and correctly. Signs should be easily visible and instructive, such as those having pictograms. Signs are a very effective method of increasing participation, reducing contamination and increasing capture rate.
- Ensure UofG's Environmental Policy is clearly visible in all common areas throughout campus. Emphasize UofG's commitment to environmental stewardship in its newsletters, brochures, annual reports and contracts. Regular newsletters promoting the school's waste reduction programs, goals and concerns will increase student/staff cooperation.
- Continue to increase awareness of current recycling programs through staff and student education programs. Such programs can include brief training programs as well as placement of posters in strategic locations around campus, and posting information regarding campus goals and recycling, reuse, and reduction rates at the school. A suggestion email address may be helpful in communicating student/staff concerns and suggestions when developing or changing existing diversion programs.
- It is important that all staff and students at UofG be made aware of all available recycling programs. UofG staff should provide easy access to contact information for questions and/or help regarding the various recycling programs. The recycling programs should have as much consistency as possible across campus.
- Throughout the year, waste should be collected in clear plastic garbage bags instead of black garbage bags. This practice allows cleaning staff to monitor waste collection, as well as to ensure that separated waste streams are disposed of in the correct containers/areas. Some of our clients find it beneficial to use clear bags that have a slight blue tint for use in recycling containers.
- Support and encourage the purchase and use of "environmentally friendly", reusable or recyclable materials and packaging, and/or those that contain recycled content.
- In order to be successful, the waste diversion program must have the full support of UofG's management team.
- According to O.Reg. 102/94, the Waste Reduction Work Plan (Appendix D) or a summary of the plan must be posted at the facility in a place where it can be viewed. If a summary of the work plan is posted, the full Work Plan must be made available for review upon request by any of the university's staff or students.
- The waste audit report and waste reduction work plan must be retained on file for a minimum of five years.

- A waste audit report and waste reduction work plan must be conducted and updated annually.

Appendix A

Supporting Documentation

Partial copy of
O.Reg.102/94

Environmental Protection Act
Loi sur la protection de l'environnement

ONTARIO REGULATION 102/94

WASTE AUDITS AND WASTE REDUCTION WORK PLANS

Consolidation Period: From March 3, 1994 to the e-Laws currency date.

No amendments.

This Regulation is made in English only.

PART I
GENERAL

1. In this Regulation,

"waste" means municipal waste as defined in Regulation 347 of the Revised Regulations of Ontario, 1990;

"waste audit" means a study relating to waste;

"waste reduction work plan" means a plan to reduce, reuse and recycle waste. O. Reg. 102/94, s. 1.

2. A waste audit required under this Regulation shall address,

(a) the amount, nature and composition of the waste;

(b) the manner by which the waste gets produced, including management decisions and policies that relate to the production of waste; and

(c) the way in which the waste is managed. O. Reg. 102/94, s. 2.

3. (1) A waste reduction work plan required under this Regulation shall include, to the extent that is reasonable, plans to reduce, reuse and recycle waste and shall set out who will implement each part of the plan, when each part will be implemented and what the expected results are.

(2) In developing the work plan, regard shall be had to the following principles:

1. Reduction is the first objective.
2. If reduction is not possible, then reuse is the next objective.
3. If reduction and reuse are not possible, then recycling is the final objective. O. Reg. 102/94, s. 3.

4. A person who is required under this Regulation to prepare a report of a waste audit or a waste reduction work plan shall prepare it on a form provided by the Ministry or in the same format as such a form. O. Reg. 102/94, s. 4.

5. (1) A person who is required under this Regulation to prepare a report of a waste audit or a waste reduction work plan shall retain a copy of the report or plan for at least five years after it was prepared.

(2) A person who is required under this Regulation to prepare a report of a waste audit or a waste reduction work plan shall submit to the Director, on request, the required report or plan, within seven days of the Director requesting them. O. Reg. 102/94, s. 5.

6. (1) A person who becomes subject to an obligation under this Regulation to prepare a report of a waste audit or a waste reduction work plan shall do so within six months of becoming subject to the obligation.

(2) This section does not apply with respect to updated reports or plans.

(3) This section does not apply with respect to obligations of a builder under Part IV or a demolisher under Part V. O. Reg. 102/94, s. 6.

7. (1) A new owner or operator to whom this Regulation applies is not required to conduct a new waste audit or prepare a new waste reduction work plan if an audit or work plan was conducted or prepared by a previous owner or operator and the new owner or operator updates the audit and work plan as required under this Regulation.

(2) This section does not apply with respect to a builder under Part IV or a demolisher under Part V. O. Reg. 102/94, s. 7.

8. (1) A person who has an obligation to conduct a waste audit and prepare a report under Part II, III, VI, VII, VIII, IX, X or XI in respect of more than one retail shopping establishment, retail shopping complex, building, restaurant, hotel or motel, hospital, location or campus of an educational institution, or site of a manufacturing establishment, may conduct a single

50. The waste reduction work plan shall include measures for communicating the plan to the operator's employees who work at the hospital and, as a minimum, those measures shall require,

(a) that the plan or a summary be posted in places where most employees will see it; and

(b) if a summary is posted, that any employee who requests to look at the plan be allowed to do so. O. Reg. 102/94, s. 50.

PART X
EDUCATIONAL INSTITUTIONS

51. (1) This Part applies to the operator of an educational institution in respect of a location or campus of the institution if, at the location or campus, at any time during the calendar year, more than 350 persons are enrolled.

(2) This Part continues to apply in respect of a location or campus for the two calendar years following the last year in which more than 350 persons were enrolled at the location or campus. O. Reg. 102/94, s. 51.

52. (1) The operator shall conduct a waste audit covering the waste generated by the operation of the institution at the location or campus. The audit shall also address the extent to which materials or products used consist of recycled or reused materials or products.

(2) After conducting the waste audit, the operator shall prepare a written report of the audit.

(3) In every year following the initial waste audit, the operator shall update the audit and prepare an updated written report. O. Reg. 102/94, s. 52.

53. (1) The operator shall prepare a written waste reduction work plan, based on the waste audit, to reduce, reuse and recycle waste generated by the operation of the institution at the location or campus.

(2) In every year following the preparation of the initial waste reduction work plan, the operator shall prepare an updated written plan. O. Reg. 102/94, s. 53.

54. The operator shall implement the waste reduction work plan as updated. O. Reg. 102/94, s. 54.

55. The waste reduction work plan shall include measures for communicating the plan to the operator's employees who work at the location or campus and, as a minimum, those measures shall require,

(a) that the plan or a summary be posted in places where most employees will see it; and

(b) if a summary is posted, that any employee who requests to look at the plan be allowed to do so. O. Reg. 102/94, s. 55.

PART XI
LARGE MANUFACTURING ESTABLISHMENTS

56. (1) This Part applies to the owner or operator of a site that is a manufacturing establishment.

(2) This Part does not apply to an owner of a site in a particular calendar year if,

(a) during the two preceding calendar years there was no calendar month in which the hours worked by the persons employed at the site exceeded 16,000 hours; and

(b) the owner is able to demonstrate this fact, within seven days of a request from the Director, through evidence satisfactory to the Director.

(3) Copies of the records related to hours of employment maintained under section 11 of the *Employment Standards Act* shall be deemed to be sufficient evidence of hours worked at a site if the copies are certified by the owner or the owner's representative as to the accuracy of the records.

(4) In this Part,

"owner" includes the operator of a manufacturing establishment but does not include a landlord;

"site" means one property and includes nearby properties owned or leased by the same person where passage from one property to another involves crossing, but not travelling along, a public highway. O. Reg. 102/94, s. 56.

57. (1) The owner shall conduct a waste audit covering the waste generated by the operation of the establishment at the site. The audit shall also address the extent to which materials or products used or sold consist of recycled or reused materials or products.

(2) After conducting the waste audit, the owner shall prepare a written report of the audit.

(3) In every year following the initial waste audit, the owner shall update the audit and prepare an updated written report. O. Reg. 102/94, s. 57.

58. (1) The owner shall prepare a written waste reduction work plan, based on the waste audit, to reduce, reuse and recycle waste generated by the operation of the establishment.

(2) In every year following the preparation of the initial waste reduction work plan, the owner shall prepare an updated written plan. O. Reg. 102/94, s. 58.

Environmental Protection Act
Loi sur la protection de l'environnement

Partial copy of O.Reg.103/94

ONTARIO REGULATION 103/94

INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL SOURCE SEPARATION PROGRAMS

Consolidation Period: From March 3, 1994 to the e-Laws currency date.

No amendments.

This Regulation is made in English only.

SOURCE SEPARATION PROGRAMS

1. In this Regulation,

"Northern Ontario" means the territorial districts of Algoma, Cochrane, Kenora, Manitoulin, Nipissing, Parry Sound, Rainy River, Sudbury, Thunder Bay and Timiskaming and The Regional Municipality of Sudbury;

"source separation program" means a program to facilitate the source separation of waste for reuse or recycling. O. Reg. 103/94, s. 1.

2. (1) A source separation program required under this Regulation must include,

(a) the provision of facilities for the collection, handling and storage of source separated wastes described in subsection (2) adequate for the quantities of anticipated wastes;

(b) measures to ensure that the source separated wastes that are collected are removed;

(c) the provision of information to users and potential users of the program,

(i) describing the performance of the program,

(ii) encouraging effective source separation of waste and full use of the program;

(d) reasonable efforts to ensure that full use is made of the program and that the separated waste is reused or recycled.

(2) The source separated waste referred to in clause (1) (a) is waste that has been source separated from other kinds of waste and that consists solely of waste from one or more of the following categories:

1. The categories of waste set out in the part of the Schedule applicable to the person required to implement the source separation program.

2. The categories of waste set out in Schedule 1, 2 or 3 of Ontario Regulation 101/94 that the source separation program accepts.

(3) A source separation program required under this Regulation must provide for all the categories of waste set out in the part of the Schedule applicable to the person required to implement the program except for categories of waste that cannot be reasonably anticipated. O. Reg. 103/94, s. 2.

3. Source separation programs required by this Regulation are exempt from sections 27, 40 and 41 of the Act. O. Reg. 103/94, s. 3.

4. (1) A source separation program that is not required by this Regulation is exempt from sections 27, 40 and 41 of the Act if,

(a) the program is restricted to waste generated at a single site;

(b) the program only accepts waste that has been source separated from other kinds of waste and that consists solely of waste from one or more of the categories of waste set out in Schedule 1, 2 or 3 of Ontario Regulation 101/94;

(c) the program includes everything set out in subsection 2 (1).

(2) For the purposes of clause (1) (c), the reference to source separated waste in clause 2 (1) (a) shall be deemed to be a reference to the waste described in clause (1) (b). O. Reg. 103/94, s. 4.

RETAIL SHOPPING ESTABLISHMENTS

5. (1) This section applies to the owner of an establishment that sells goods or services at retail to persons who come to the establishment if,

(a) the establishment occupies premises with a floor area of at least 10,000 square metres; or

(b) the establishment occupies premises in a complex in respect of which section 6 applies and the owner of the establishment is solely responsible for the establishment's waste management.

(2) The owner shall implement a source separation program for the wastes generated by the establishment or shall ensure that such a program is implemented.

(3) This section applies only in respect of an establishment located within a local municipality that has a population of at least 5,000.

(4) This section takes effect with respect to an establishment in Northern Ontario on July 1, 1996. O. Reg. 103/94, s. 5.

RETAIL SHOPPING COMPLEXES

6. (1) This section applies to the owner of a complex that contains premises occupied by establishments that sell goods or services at retail to persons who come to the establishments if the total floor area of such premises is at least 10,000 square metres.

(2) The owner shall implement a source separation program for the wastes generated at the complex or shall ensure that such a program is implemented.

(3) The source separation program need not provide for the waste generated in the operation of an establishment in the complex if section 5 applies to the owner of the establishment.

(4) This section applies only in respect of a complex located in a local municipality that has a population of at least 5,000.

(5) This section takes effect with respect to a complex in Northern Ontario on July 1, 1996. O. Reg. 103/94, s. 6.

(c) a building in respect of which section 9 applies;

(d) a hotel or motel in respect of which section 12 applies;

(e) a hospital in respect of which section 13 applies;

(f) a location or campus of an educational institution in respect of which section 14 applies.

(4) This section does not apply to an owner of a restaurant in a particular calendar year if,

(a) during the two preceding calendar years there was no year in which the gross sales for all restaurants operated by the owner in Ontario equalled or exceeded $3,000,000; and

(b) the owner is able to demonstrate this fact, within seven days of a request from the Director, through evidence satisfactory to the Director.

(5) Copies of the records related to purchase and sale maintained under subsection 5 (1) of Regulation 1013 of the Revised Regulations of Ontario, 1990 shall be deemed to be sufficient evidence of the gross sales of a restaurant if the copies are certified by the owner or the owner's representative as to the accuracy of the records.

(6) This section applies only in respect of a restaurant located within a local municipality that has a population of at least 5,000.

(7) This section takes effect with respect to a restaurant in Northern Ontario on July 1, 1996. O. Reg. 103/94, s. 11.

HOTELS AND MOTELS

12. (1) The owner of a hotel or motel that has more than seventy-five units shall implement a source separation program for the wastes generated by the operation of the hotel or motel or shall ensure that such a program is implemented.

(2) This section applies only in respect of a hotel or motel located within a local municipality that has a population of at least 5,000.

(3) This section takes effect with respect to a hotel or motel in Northern Ontario on July 1, 1996. O. Reg. 103/94, s. 12.

HOSPITALS

13. (1) The operator of a public hospital classified as a class A, B or F hospital in Regulation 964 of the Revised Regulations of Ontario, 1990 shall implement a source separation program for the wastes generated by the operation of the hospital or shall ensure that such a program is implemented.

(2) This section applies only in respect of a public hospital located within a local municipality that has a population of at least 5,000.

(3) This section takes effect with respect to a public hospital in Northern Ontario on July 1, 1996. O.Reg. 103/94, s. 13.

EDUCATIONAL INSTITUTIONS

14. (1) This section applies to the operator of an educational institution in respect of a location or campus of the institution if, at the location or campus, at any time during the

calendar year, more than 350 persons are enrolled.

(2) The operator shall implement a source separation program for the waste generated by the operation of the institution at the location or campus or shall ensure that such a program is implemented.

(3) This section continues to apply in respect of a location or campus for the two calendar years following the last year in which more than 350 persons were enrolled at the location or campus.

(4) This section applies only in respect of a location or campus located within a local municipality that has a population of at least 5,000.

(5) This section takes effect with respect to a location or campus in Northern Ontario on July 1, 1996. O. Reg. 103/94, s. 14.

LARGE MANUFACTURING ESTABLISHMENTS

15. (1) This section applies to the owner or operator of a site that is a manufacturing establishment.

(2) The owner shall implement a source separation program for the waste generated by the operation of the establishment at the site or shall ensure that such a program is implemented.

(3) This section does not apply to an owner of a site in a particular calendar year if,

(a) during the two preceding calendar years there was no calendar month in which the hours worked by the persons employed at the site exceeded 16,000 hours; and

(b) the owner is able to demonstrate this fact, within seven days of a request from the Director, through evidence satisfactory to the Director.

(4) Copies of the records related to hours of employment maintained under section 11 of the *Employment Standards Act* shall be deemed to be sufficient evidence of hours worked at a site if the copies are certified by the owner or the owner's representative as to the accuracy of the records.

(5) In this section,

"owner" includes the operator of a manufacturing establishment but does not include a landlord;

"site" means one property and includes nearby properties owned or leased by the same person where passage from one property to another involves crossing, but not travelling along, a public highway. O. Reg. 103/94, s. 15.

TRANSITION

16. Except as otherwise provided, a person who, upon the coming into force of this Regulation, or at any time within twelve months after the coming into force of this Regulation, becomes subject to an obligation with respect to the implementation of a source separation program shall fulfil the obligation within twelve months after the coming into force of this Regulation. O.Reg. 103/94, s. 16.

SCHEDULE
WASTES TO BE PROVIDED FOR IN SOURCE SEPARATION PROGRAMS

2. Cardboard (corrugated).
3. Fine paper.
4. Glass bottles and jars for food or beverages.
5. Newsprint.
6. Polyethylene terephthalate bottles for food or beverages (including bottles made primarily of polyethylene terephthalate).
7. Steel food or beverage cans (including cans made primarily of steel).

PART IX
HOSPITALS

(referred to in section 13)

1. Aluminum food or beverage cans (including cans made primarily of aluminum).
2. Cardboard (corrugated).
3. Fine paper.
4. Glass bottles and jars for food or beverages.
5. Newsprint.
6. Steel food or beverage cans (including cans made primarily of steel).

PART X
EDUCATIONAL INSTITUTIONS

(referred to in section 14)

1. Aluminum food or beverage cans (including cans made primarily of aluminum).
2. Cardboard (corrugated).
3. Fine paper.
4. Glass bottles and jars for food or beverages.
5. Newsprint.
6. Steel food or beverage cans (including cans made primarily of steel).

PART XI
LARGE MANUFACTURING ESTABLISHMENTS

(referred to in section 15)

1. Aluminum.
2. Cardboard (corrugated).
3. Fine paper.
4. Glass.
5. Newsprint.

CANADIAN SCALE COMPANY LIMITED

CALIBRATION CERTIFICATE

DATE: May 11 2018 **SR No.:** 47338

CUSTOMER:
Waste Reduction Group
801 King St W Unit PH #20
Toronto ON M5V 3C9

REMARKS

This is to certify that the following scale has been tested and calibrated 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.

Anyload EWH-150
Capacity 150 kg
S/N -20161108049

Technician's Signature

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

Waste Reduction Group Inc.
214 Merton St #101
Toronto, ON M4S 1A6
(416) 823-4554

University of Guelph Waste Audit

18-26th March 2019

Overview

The University of Guelph audit took place over 11 days. The university contains residences, educational buildings, offices, cafeterias, sports complexes, labs and animal hospitals. The residences had samples collected over the weekends (48hr samples) and all other buildings had samples collected over a 24hr period. Recycling is collected co-mingled with some buildings having bins/compactors for cardboard. Organics are collected in-house from some cafeterias only (no front of house organics in place) and only raw materials are collected. The animal hospitals have some separate bins for biohazardous waste, and other bins for maure which is also composted in-house. Some buildings have soil-only bins. The university has put a ban in place on straws and is looking to further restrict single-use plastics. The university is looking to design new signage in partnership with the City of Guelph in order to better reflect the recycling program.

Monday, March 18th, 2019

Maids Hall

- Waste from washrooms is almost exclusively paper towels

- There was food waste present in the garbage and recycling

- Single-use plastic lids, straws, and cutlery were found in the garbage and recycling

- Recyclable containers were found in the garbage

- Single-use coffee cups were present in the garbage and recycling

Johnson Hall

- The open bin provides opportunities for illegal dumping

- The building's waste stream has paper towels, paper plates, gable top containers, coffee cups, plastics, and food waste

Watson Hall

- There was cardboard, plastics, coffee cups, organics, and aluminum cans present in the garbage

Lambton Hall

- Cardboard, plastics, glass, aluminum cans, polycoat containers, coffee cups, and food waste were found in the garbage

Tuesday, March 19th, 2019

Mackinnon Hall

- Single-use coffee cups, lids, straws and utensils, and recyclable plastics and fibres were found in the garbage


- There are unlabelled bins on the exterior of the building

- Some interior bins are poorly labelled

- The bins with slightly better labelling just have paper labels taped above the bins

McLaughlin Library

- The recycling bins in the library have minimal labelling and a small hole for depositing materials

- Lots of paper, cardboard, plastics, coffee cups, food waste, paper towels, and single use plastics were found in the garbage

Wednesday, March 20th, 2019

Alexander Hall

- The washrooms have a single bin that is mostly filled with paper towels

- There are long hallways with no bins to dispose of waste and recycling

- There are lone waste and recycling bins which differ in appearance and labelling

- The exterior bins only have one option to dispose of all materials and there are no labels on these bins

- The bins have some black bags and a wooden pallet was also found inside

- There were lab plastics and glass in the garbage and recycling

- There were many recyclables such as plastics and fibres, as well as single-use plastics in the garbage


Science Complex and MacNaughton Building

- There are lone bins that are poorly labelled or not labelled at all

- There is an abundance of single-use plastics in the recycling and garbage


- There are many polycoat coffee cups in the garbage and recycling

- The waste bin has black bags with medical, biological, and other science related waste

Thursday, March 21st, 2019

OVC Large Animal Clinic

- There are bins designated for biohazardous waste

- There are manure bins which are taken to a facility on site to be composted

- There is a lot of soft plastic used to wrap products and contain the softwood shavings for the animal bedding

- There is an extensive use of medical cloths and clothing, some of which are bloodied, which are discarded in the waste

- The washroom waste consists of almost exclusively paper towels

- Single-use plastics, coffee cups, recyclable plastics, and fibres were also found in significant quantities in the garbage

OVC Pathobiology and Animal Health Lab

- There is a bin for biohazardous waste

- The waste in the normal garbage bin was just as contaminated as the biohazardous bin and even contained hazardous bags

- The recycling bin contained mostly cardboard

- The and exterior bins are unlabeled

- The washrooms have single unlabeled bins which mostly accumulate paper towels

Biodiversity Institute of Ontario

- The lab recycling is mostly #5 pipette tip holders

- There is a lot of cardboard in the recycling bin

- The interior and exterior bins are unlabelled


- The washroom has a hand dryer and bin for paper towels which uses a blue bag

- The garbage contained many pipette tips and other lab residue

Friday, March 22nd, 2019

MacDonald Hall

- The waste had mixed recyclables despite the improved labelling at this location

- Some bins in the building were labelled and others were lone and not labelled

- The waste stream in the washrooms was mostly paper towels

MacDonald Institute

- The set up in the washrooms encourages paper towel use

Reynolds Building and J.D MacLachlan Building

- The Reynolds building has some of the best signage on campus

- There are still unlabelled and poorly labelled bins in the same building

- The washrooms produce many paper towels in the waste stream

- There are many coffee cups, recyclables, and single-use plastics in the waste stream of the two buildings

Monday, March 25th, 2019

South Residences

- The recycling bin accumulates large volumes of cardboard

- The residence garbage had recyclable plastics, single use plastics, food waste, coffee cups, paper towels, and other recyclable fibres

- The signage inside the residence is sufficient and should result in students properly source separating

- The residence main entrances have lone, unlabelled bins

East Residences

- The residence main entrances have lone, unlabelled bins

- There are many lone bins and bins which are poorly labelled or not labelled at all

- Entire bags of recyclables were found in clear garbage bags

- Bags of clothes were also discarded in the garbage

- Amongst the waste was food waste and recyclable plastics and fibres

Tuesday, March 26th, 2019

University Center

- The receptacles in the building are inconsistent in appearance and have poor or no labelling

- Entire waste bags are filled with compostable coffee grinds

- Wooden pallets are being discarded in the waste bins and not a wood bin

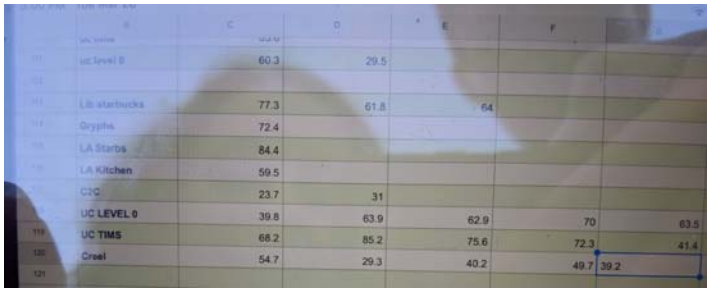

Creelman Hall

- The receptacle has little detail in labelling but does have the opportunity to return used cutlery

- The recycling bin contains mostly only cardboard

- The waste bin was filled with food waste, containers filled with broken dishes, and a chair

- The team collects organics in house and weighs them



	60.3	29.5			
Lib starbucks	77.3	61.8	64		
Gryphs	72.4				
LA Starbs	84.4				
LA Kitchen	59.5				
C2C	23.7	31			
UC LEVEL 0	39.8	63.9	62.9	70	63.5
UC TIMS	68.2	85.2	75.6	72.3	41.4
Creel	54.7	29.3	40.2	49.7	39.2

- There was an abundance of food waste in the waste stream

- There were many gable top containers in the garbage

- There are single use film plastics and packaging

Recommendations

- Fit washrooms with energy efficient hand dryers to reduce the amount of paper towels used and improve environmental impacts.
- Set up organics recycling for student residences and washrooms to improve diversion rates as food waste is heavy and paper towels can also be diverted from landfill
- Encourage students to use reusable containers, coffee mugs, and water bottles to reduce the amount of single-use coffee cups water bottles, and food containers wasted and used.

- Provide students with reusable mugs, bottles, and utensils to reduce the amount of single-use coffee cups, plastic cutlery and lids wasted.
- Replace existing open bins in accessible, high-traffic areas with a bin that has a cover to prevent illegal dumping into university bins
- Improve signage and education for students in residence so they get in the habit of recycling properly
- Exchange single, unlabelled bins, indoors and outdoors, for depots with multiple compartments and clear, detailed, easy to understand labelling so every location gives all appropriate recycling options and contamination is reduced
- Consider placing new depots in long hallways and open areas (where fire codes permit) where bins are currently absent so individuals do not have to go far to properly dispose of their waste and recyclables
- Communicate to staff that broken wooden pallets should be going into a wood bin and not the waste bins
- Put as much clean, acceptable lab plastic as possible in the recycling
- Consider a glass recycling program for laboratory glass (amber and clear)
- Place a separate bin in the loading area of the science complex to avoid biohazardous waste from being placed with the normal waste
- Encourage all purchases at the university be made with the environment in mind and choose vendors who use recyclable packaging instead of single-use plastic wrap and film plastics
- Consider programs for reusable, washable medical clothing instead of disposable clothes
- Ensure staff know which bags go in the biohazardous bin and which go in normal garbage to avoid contamination and health risks
- Consider cardboard compactors where large volumes of cardboard are produced as they can improve and offset costs
- Set up clothing donation bins in residences so good textiles are not wasted
- Use more reusable cutlery and dishes in the cafeterias to avoid single-use plastic cutlery, take out containers, and bags from being distributed in large volumes
- Consider setting up front of house organics in cafeterias and other locations where large volumes of food are produced
- Update signage to reflect that items such as gable top containers are to be recycled and not discarded in the garbage
- Have food vendors assess the volumes of cooked items they are producing to reduce food waste as well as perishable items they purchase to avoid food from spoiling and being wasted

Appendix B

Waste Audit Data

Waste Audit Report

University of Guelph

Waste Reduction Group Project P0991

Table B1: Garbage Sample Summary - By Building

Sample #	Location	Waste Audit Date	Garbage	Recycling	Total Sample		Adjusted Garbage[1]	Adjusted Recycling[1]	Adjusted Sample[1]	
			kg	kg	kg	%	kg	kg	kg	%
1	Maids Hall	18-Mar-19	55.83	10.48	66.31	3.7%	27.92	5.24	33.16	2.3%
2	Johnson Hall	18-Mar-19	6.28	28.61	34.89	2.0%	3.14	14.31	17.45	1.2%
3	Watson Hall	18-Mar-19	13.53	3.59	17.12	1.0%	6.77	1.80	8.56	0.6%
4	Lambton Hall	18-Mar-19	111.37	29.16	140.53	7.9%	55.69	14.58	70.27	4.9%
5	MacKinnon Hall	19-Mar-19	51.05	25.24	76.29	4.3%	51.05	25.24	76.29	5.4%
6	McLaughlin Library	19-Mar-19	114.41	42.73	157.14	8.8%	114.41	42.73	157.14	11.0%
7	Alexander Hall	20-Mar-19	37.89	4.33	42.22	2.4%	37.89	4.33	42.22	3.0%
8	Science Complex & McNaughton	20-Mar-19	59.90	35.71	95.61	5.4%	59.90	35.71	95.61	6.7%
9	OVC Large Animal Clinic	21-Mar-19	46.62	5.49	52.11	2.9%	46.62	5.49	52.11	3.7%
10	OVC Pathobio & Animal Health Lab	21-Mar-19	--	15.44	15.44	0.9%	--	15.44	15.44	1.1%
11	Biodiversity Institute of Ontario	21-Mar-19	28.62	24.03	52.65	3.0%	28.62	24.03	52.65	3.7%
12	MacDonald Hall	22-Mar-19	15.89	6.53	22.42	1.3%	15.89	6.53	22.42	1.6%
13	MacDonald Institute	22-Mar-19	--	11.10	11.10	0.6%	--	11.10	11.10	0.8%
14	Reynolds & J.D MacLachlan Bldgs	22-Mar-19	11.16	4.40	15.56	0.9%	11.16	4.40	15.56	1.1%
15	South Residence	25-Mar-19	84.65	95.23	179.88	10.1%	42.33	47.62	89.94	6.3%
16	East Residence	25-Mar-19	215.71	47.46	263.17	14.8%	107.86	23.73	131.59	9.2%
17	University Centre	26-Mar-19	355.46	45.75	401.21	22.6%	355.46	45.75	401.21	28.2%
18	Creelman Hall	26-Mar-19	116.84	15.17	132.01	7.4%	116.84	15.17	132.01	9.3%
Total			1325.21	450.45	1775.66	100.0%	1081.53	343.19	1424.71	100.0%

Note 1: Samples from Residences collected over 48 hr period. All other samples collected over 24-hr period. All samples adjusted to 24-hr.

Table B2: Garbage Sample Summary - By Functional Area

Waste Generating Area		Office Areas		Public Areas		Classrooms		Washrooms		Labs		Kitchenette/Break		Hospitality FofH		Hospitality BofH		Residences		Unlabelled		Total	
Sample Size		26.51		168.24		66.79		31.65		27.83		19.96		239.36		232.94		181.76		86.51		1081.53	
Percent of Sample Size		2.5%		15.6%		6.2%		2.9%		2.6%		1.8%		22.1%		21.5%		16.8%		8.0%		100.0%	
		kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%
Mixed Containers	PET (#1)	0.55	2.1%	5.16	3.1%	2.78	4.2%	0.28	0.9%	0.02	0.1%	0.50	2.5%	1.65	0.7%	2.26	1.0%	18.23	10.0%	0.79	0.9%	32.20	3.0%
	HDPE (#2)	0.76	2.9%	0.94	0.6%	0.05	0.1%	0.10	0.3%	0.00	0.0%	0.20	1.0%	0.00	0.0%	0.60	0.3%	1.75	1.0%	0.58	0.7%	4.97	0.5%
	PP (#5)	0.27	1.0%	2.91	1.7%	1.66	2.5%	0.53	1.7%	0.00	0.0%	0.44	2.2%	0.72	0.3%	0.23	0.1%	3.95	2.2%	0.43	0.5%	11.14	1.0%
	PS (#6)	0.00	0.0%	0.05	0.0%	0.13	0.2%	0.03	0.1%	0.00	0.0%	0.26	1.3%	1.72	0.7%	0.18	0.1%	1.12	0.6%	0.00	0.0%	3.50	0.3%
	Glass	0.00	0.0%	3.17	1.9%	1.62	2.4%	0.22	0.7%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	7.38	4.1%	0.00	0.0%	12.38	1.1%
	Aluminum	0.00	0.0%	0.52	0.3%	0.06	0.1%	0.06	0.2%	0.00	0.0%	0.04	0.2%	0.24	0.1%	0.00	0.0%	2.61	1.4%	0.16	0.2%	3.69	0.3%
	Steel	0.00	0.0%	0.06	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.01	0.1%	0.00	0.0%	0.00	0.0%	0.14	0.1%	0.00	0.0%	0.21	0.0%
	Gable Top	0.00	0.0%	0.19	0.1%	0.14	0.2%	0.02	0.1%	0.00	0.0%	0.15	0.7%	0.98	0.4%	4.68	2.0%	1.82	1.0%	0.53	0.6%	8.50	0.8%
	Aseptic	0.02	0.1%	0.26	0.2%	0.04	0.1%	0.00	0.0%	0.00	0.0%	0.10	0.5%	0.00	0.0%	1.06	0.5%	1.99	1.1%	0.05	0.1%	3.52	0.3%
Mixed Papers	Fine Paper	2.87	10.8%	1.85	1.1%	2.58	3.9%	0.05	0.2%	0.19	0.7%	0.41	2.1%	2.35	1.0%	9.31	4.0%	7.58	4.2%	0.66	0.8%	27.85	2.6%
	Newspaper	0.33	1.3%	0.02	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.37	0.2%	0.00	0.0%	0.00	0.0%	0.72	0.1%
	Boxboard	0.54	2.0%	8.58	5.1%	1.55	2.3%	0.51	1.6%	0.14	0.5%	1.01	5.1%	34.48	14.4%	0.88	0.4%	10.85	6.0%	1.95	2.3%	60.50	5.6%
	Other Fibres	0.00	0.0%	0.00	0.0%	0.16	0.2%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.16	0.0%
Cardboard		0.47	1.8%	5.22	3.1%	0.62	0.9%	0.00	0.0%	0.00	0.0%	0.22	1.1%	0.00	0.0%	0.00	0.0%	4.41	2.4%	1.12	1.3%	12.05	1.1%
Paper Towels		3.07	**11.6%**	1.30	0.8%	0.85	1.3%	22.37	**70.7%**	0.05	0.2%	2.66	**13.3%**	5.76	2.4%	6.87	3.0%	5.94	3.3%	11.04	**12.8%**	59.90	**5.5%**
Coffee Cups		1.86	**7.0%**	13.91	**8.3%**	9.17	**13.7%**	1.05	3.3%	0.07	0.3%	1.36	**6.8%**	9.53	4.0%	0.88	0.4%	2.68	1.5%	8.29	**9.6%**	48.79	4.5%
Organics		5.40	**20.4%**	18.50	**11.0%**	3.29	4.9%	3.41	**10.8%**	0.00	0.0%	5.94	**29.8%**	96.40	**40.3%**	107.13	**46.0%**	41.85	**23.0%**	6.12	**7.1%**	288.05	**26.6%**
LDPE Plastic Films		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.22	0.1%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.22	0.0%
Styrofoam		0.00	0.0%	0.10	0.1%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.47	0.2%	0.00	0.0%	0.79	0.4%	0.00	0.0%	1.37	0.1%
Plastic Strapping		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Scrap Metal		0.00	0.0%	0.65	0.4%	0.00	0.0%	0.04	0.1%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.06	0.0%	0.00	0.0%	0.75	0.1%
Scrap Wood		0.00	0.0%	0.00	0.0%	0.14	0.2%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.14	0.0%
Electronic Waste		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Bulbs		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Batteries		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Printer Toners		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Other/Nonrecyclable		10.38	**39.1%**	104.82	**62.3%**	41.96	**62.8%**	2.99	**9.4%**	27.36	**98.3%**	6.68	**33.5%**	84.83	**35.4%**	98.51	**42.3%**	68.60	**37.7%**	54.79	**63.3%**	500.92	**46.3%**
QAQC Check		26.51	100.0%	168.24	100.0%	66.79	100.0%	31.65	100.0%	27.83	100.0%	19.96	100.0%	239.36	100.0%	232.94	100.0%	181.76	100.0%	86.51	100.0%	1081.53	100.0%
Mixed Containers		1.60	**6.0%**	13.26	**7.9%**	6.47	**9.7%**	1.23	3.9%	0.02	0.1%	1.69	**8.4%**	5.31	2.2%	9.01	3.9%	38.99	**21.4%**	2.54	2.9%	80.11	**7.4%**
Mixed Papers		3.74	**14.1%**	10.46	**6.2%**	4.29	**6.4%**	0.56	1.8%	0.33	1.2%	1.42	**7.1%**	36.84	**15.4%**	10.55	4.5%	18.43	**10.1%**	2.61	3.0%	89.22	**8.2%**
Mandatory Recyclables (Reg103)		3.7	13.8%	10.8	6.4%	4.9	7.3%	0.3	1.0%	0.2	0.7%	0.7	3.4%	2.6	1.1%	9.7	4.2%	22.1	12.2%	1.9	2.2%	56.9	5.3%
Other Recyclables		12.46	47.0%	52.57	31.2%	19.95	29.9%	28.33	89.5%	0.28	1.0%	12.60	63.1%	151.94	63.5%	124.76	53.6%	91.04	50.1%	29.78	34.4%	523.71	48.4%
Non-Recyclable		10.4	39.1%	104.8	62.3%	42.0	62.8%	3.0	9.4%	27.4	98.3%	6.7	33.5%	84.8	35.4%	98.5	42.3%	68.6	37.7%	54.8	63.3%	500.9	46.3%
QAQC Check		TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%	TRUE	100.0%

Note: Highlighted cells are those >5% as summarized in Table 4 of report.

Table B3: Recycling Sample Summary - By Functional Area

Waste Generating Area		Office Areas		Public Areas (Incl		Classrooms		Labs		Kitchenette/Break		Hospitality FofH		Hospitality BofH		Residences		Unlabelled		Total	
Sample Size		44.38		47.78		11.44		31.22		8.19		18.11		42.81		98.31		40.95		343.19	
Percent of Sample Size		4.1%		4.4%		1.1%		2.9%		0.8%		1.7%		4.0%		9.1%		3.8%		31.7%	
		kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%	kg	%
Mixed Containers	PET (#1)	1.18	4.5%	5.90	3.5%	1.71	2.6%	0.47	1.7%	1.07	5.3%	7.86	3.3%	4.20	1.8%	19.99	11.0%	3.58	4.1%	45.95	4.2%
	HDPE (#2)	0.30	1.1%	0.11	0.1%	0.05	0.1%	0.41	1.5%	0.15	0.7%	0.17	0.1%	11.46	4.9%	0.14	0.1%	0.65	0.8%	13.45	1.2%
	PP (#5)	0.24	0.9%	6.27	3.7%	0.45	0.7%	19.45	69.9%	0.34	1.7%	0.50	0.2%	4.58	2.0%	1.47	0.8%	2.83	3.3%	36.13	3.3%
	PS (#6)	0.01	0.0%	0.74	0.4%	0.07	0.1%	0.17	0.6%	0.85	4.3%	0.17	0.1%	0.00	0.0%	0.20	0.1%	1.13	1.3%	3.34	0.3%
	Glass	0.33	1.2%	1.60	1.0%	1.75	2.6%	0.31	1.1%	0.00	0.0%	1.90	0.8%	2.48	1.1%	12.38	6.8%	1.26	1.5%	22.01	2.0%
	Aluminum	0.76	2.9%	1.14	0.7%	0.16	0.2%	0.00	0.0%	0.38	1.9%	0.69	0.3%	0.05	0.0%	2.42	1.3%	0.51	0.6%	6.12	0.6%
	Steel	0.00	0.0%	0.07	0.0%	0.03	0.0%	0.00	0.0%	0.27	1.4%	0.00	0.0%	8.85	3.8%	0.34	0.2%	0.37	0.4%	9.93	0.9%
	Gable Top	0.14	0.5%	0.10	0.1%	0.05	0.1%	0.00	0.0%	0.06	0.3%	0.00	0.0%	2.72	1.2%	1.53	0.8%	0.22	0.2%	4.80	0.4%
	Aseptic	0.06	0.2%	0.31	0.2%	0.49	0.7%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.76	1.0%	0.27	0.3%	2.88	0.3%
Mixed Papers	Fine Paper	30.53	115.2%	5.17	3.1%	1.47	2.2%	2.05	7.4%	0.86	4.3%	0.44	0.2%	0.08	0.0%	5.36	3.0%	7.97	9.2%	53.92	5.0%
	Newspaper	0.29	1.1%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.20	1.0%	0.31	0.1%	0.00	0.0%	0.00	0.0%	0.28	0.3%	1.08	0.1%
	Boxboard	5.19	19.6%	1.87	1.1%	1.21	1.8%	3.50	12.6%	1.10	5.5%	0.80	0.3%	1.26	0.5%	11.47	6.3%	3.77	4.4%	30.16	2.8%
	Other Fibres	0.90	3.4%	0.00	0.0%	0.00	0.0%	0.21	0.8%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	3.35	3.9%	4.46	0.4%
Cardboard		1.06	4.0%	0.67	0.4%	0.90	1.3%	3.66	**13.2%**	0.19	0.9%	0.00	0.0%	0.44	0.2%	10.66	**5.9%**	5.65	**6.5%**	23.22	2.1%
Paper Towels		0.25	0.9%	0.15	0.1%	0.06	0.1%	0.00	0.0%	0.15	0.8%	1.88	0.8%	0.00	0.0%	2.52	1.4%	0.74	0.9%	5.75	0.5%
Coffee Cups		0.22	0.8%	2.62	1.6%	0.73	1.1%	0.00	0.0%	0.19	1.0%	1.15	0.5%	0.00	0.0%	1.49	0.8%	1.24	1.4%	7.63	0.7%
Organics		0.20	0.8%	0.00	0.0%	0.23	0.3%	0.00	0.0%	0.27	1.3%	0.50	0.2%	1.93	0.8%	6.22	3.4%	0.19	0.2%	9.53	0.9%
LDPE Plastic Films		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Styrofoam		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.12	0.1%	0.17	0.2%	0.29	0.0%
Plastic Strapping		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Scrap Metal		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Scrap Wood		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.11	0.1%	0.00	0.0%	0.11	0.0%
Electronic Waste		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Bulbs		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Batteries		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Printer Toners		0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Other/Nonrecyclable		2.73	**10.3%**	21.06	**12.5%**	2.08	3.1%	0.99	3.6%	2.14	**10.7%**	1.74	0.7%	4.76	2.0%	20.12	**11.1%**	6.81	**7.9%**	62.43	**5.8%**
QAQC Check		44.38	167.4%	47.78	28.4%	11.44	17.1%	31.22	112.2%	8.19	41.0%	18.11	7.6%	42.81	18.4%	98.31	54.1%	40.95	47.3%	343.19	31.7%
Mixed Containers		3.02	**6.8%**	16.25	**34.0%**	4.76	**41.6%**	20.81	**66.7%**	3.11	**37.9%**	11.29	**62.3%**	34.34	**80.2%**	40.23	**40.9%**	10.80	**26.4%**	144.60	**42.1%**
Mixed Papers		36.90	**83.1%**	7.03	**14.7%**	2.68	**23.4%**	5.76	**18.4%**	2.16	**26.3%**	1.55	**8.6%**	1.35	3.1%	16.84	**17.1%**	15.37	**37.5%**	89.63	**26.1%**

Table B4: Overall Garbage Composition (Ranked)

Composition	%	Annual		Divert?	Est.
		2050.74	MT	Y/N	Amount[1]
Other/Nonrecyclable	46.3%	949.83	MT	No	
Organics	26.6%	546.19	MT	Yes	327.71
Mixed Papers	8.2%	169.18	MT	Yes	101.51
Mixed Containers	7.4%	151.90	MT	Yes	91.14
Paper Towels	5.5%	113.59	MT	Yes	68.15
Coffee Cups	4.5%	92.51	MT	No	
Cardboard	1.1%	22.85	MT	Yes	13.71
Styrofoam	0.1%	2.59	MT	No	
Scrap Metal	0.1%	1.42	MT	Yes	0.85
LDPE Plastic Films	0.02%	0.42	MT	Yes	0.25
Scrap Wood	0.01%	0.27	MT	Yes	0.16
QAQC Check	100.0%	2050.74	MT		603.48

[1] *Assumed 60% capture rate of materials in garbage stream.*

Table B5: Overall Recycle Composition (Ranked)

Composition	%	Annual		Contam?	Contam.
		315.62	MT	Y/N	Amount
Mixed Containers	42.1%	132.98	MT	No	
Mixed Papers	26.1%	82.43	MT	No	
Other/Nonrecyclable	18.2%	57.41	MT	Yes	57.41
Cardboard	6.8%	21.36	MT	No	
Organics	2.8%	8.76	MT	Yes	8.76
Coffee Cups	2.2%	7.02	MT	Yes	7.02
Paper Towels	1.7%	5.29	MT	Yes	5.29
Styrofoam	0.1%	0.27	MT	Yes	0.27
Scrap Wood	0.03%	0.10	MT	Yes	0.10
QAQC Check	100.0%	315.62	MT		78.85
				Contamination Rate	25.0%

Table B6: Mixed Container Summary

Material	Garbage Sample	Garbage Sample	Disposed MT	Recycle Sample	Recycle Sample	Recycled MT
	kg	%	151.90	kg	%	132.98
PET (#1)	32.20	40.2%	61.07	45.95	31.8%	42.26
HDPE (#2)	4.97	6.2%	9.43	13.45	9.3%	12.37
PP (#5)	11.14	13.9%	21.12	36.13	25.0%	33.22
PS (#6)	3.50	4.4%	6.64	3.34	2.3%	3.07
Glass	12.38	15.5%	23.47	22.01	15.2%	20.24
Aluminum	3.69	4.6%	6.99	6.12	4.2%	5.63
Steel	0.21	0.3%	0.40	9.93	6.9%	9.13
Gable Top	8.50	10.6%	16.11	4.80	3.3%	4.42
Aseptic	3.52	4.4%	6.67	2.88	2.0%	2.65
Total	80.11	100.0%	151.90	144.60	100.0%	132.98

Table B7: Mixed Paper Summary

Material	Garbage Sample	Garbage Sample	Disposed MT	Recycle Sample	Recycle Sample	Recycled MT
	kg	%	169.18	kg	%	82.43
Fine	27.85	31.2%	52.80	53.92	60.2%	49.59
Newsprint	0.72	0.8%	1.37	1.08	1.2%	0.99
Boxboard	60.50	67.8%	114.71	30.16	33.7%	27.74
Other	0.16	0.2%	0.30	4.46	5.0%	4.10
Total	89.22	100.0%	169.18	89.63	100.0%	82.43

Waste Audit Report

University of Guelph

Waste Reduction Group Project P0991

Table B8: Annual Waste Management & Diversion Summary

Material Stream	3Rs or Disposed	2018 Total[1]		
		kg	MT	%
Waste/Garbage - to Landfill	Disposed		2050.74	100.0%
Sub-Total			***2050.74***	45.3%
Cardboard	Recycled		46.92	1.9%
Mixed Recycling	Recycled		315.62	12.8%
Papers (Incl. Confidential)	Recycled		123.50	5.0%
Scrap Metals	Recycled		53.26	2.2%
Scrap Wood	Recycled		15.42	0.6%
Electronic Wastes	Recycled		14.98	0.6%
Bulbs & Ballasts	Recycled		0.31	0.01%
Batteries	Recycled		1.06	0.04%
Contaminated Wood/Paint	Recycled		28.14	1.1%
Oil & Grease	Recycled		18.14	0.7%
Textbooks	Reused		8.35	0.3%
Beverage Bottles	Reused		3.85	0.2%
Manure	Composted		1812.90	73.2%
Organics	Composted		33.00	1.3%
Sub-Total			***2475.45***	***54.7%***
Total Generated			4526.19	100.0%
Total Recycled			617.35	13.6%
Total Reused			12.20	0.3%
Total Composted			1845.90	40.8%
Total Disposed			2050.74	45.3%
Achieved Waste Diversion Rate				***54.7%***
Additioanl Recyclable Materials in Wastes Disposed to Landfill (MT)				*603.5*
Potential Waste Diversion Rate				***68.0%***

Note 1: Annual data provided by University of Guelph.

waste reduction
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Location: Maids Hall, University of Guelph

Date: Monday, March 18th, 2019

Area Description	Waste - Unlabelled	Waste - Kitchenette / Break Room	Waste - Washroom	Garbage		Recycling	
Total Weight	53.21	2.25	0.37	55.83		10.48	
Sample Size	kg	kg	kg	kg	%	kg	%
Composition of Waste							
PET #1	1.58	0.00	0.00	1.58	2.8%	1.12	10.7%
HDPE Plastic Containers #2	0.62	0.08	0.00	0.70	1.3%	0.00	0.0%
PP #5	0.00	0.00	0.00	0.00	0.0%	0.02	0.2%
Polystyrene #6	0.00	0.00	0.00	0.00	0.0%	0.03	0.3%
Glass	0.00	0.00	0.00	0.00	0.0%	0.93	8.9%
Al Cans	0.00	0.00	0.00	0.00	0.0%	0.12	1.1%
Steel Cans	0.00	0.02	0.00	0.02	0.0%	0.03	0.3%
Gable Top Containers	0.86	0.03	0.00	0.89	1.6%	0.21	2.0%
Asceptic Containers	0.10	0.08	0.00	0.18	0.3%	0.17	1.6%
Fine Paper	0.57	0.04	0.00	0.61	1.1%	5.88	56.1%
Newsprint	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Boxboard	2.34	0.04	0.00	2.38	4.3%	1.03	9.8%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Corrugated Cardboard	1.05	0.00	0.00	1.05	1.9%	0.52	5.0%
Paper Towels	7.99	0.63	0.37	8.99	16.1%	0.00	0.0%
Coffee Cups	3.83	0.01	0.00	3.84	6.9%	0.07	0.7%
Organic Food Waste	11.10	0.16	0.00	11.26	20.2%	0.12	1.1%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Non Recyclable	23.16	1.16	0.00	24.32	43.6%	0.23	2.2%
Plastic Lids	44	1				4	
Plastic Straws	1					1	
Plastic Cutlery	8	2				5	
Other							

Notes: all weights in kg, single use plastics by count, not weight

waste reduction
Working together to reduce waste

Location: Johnson Hall, University of Guelph

Date: Monday, March 18th, 2019

Area Description	Waste - Public Areas	Waste - Office / Admin	Waste - Kitchenette / Break Room	Waste - Washroom	Garbage		Recycling - Public Areas	Recycling - Office / Admin	Recycling - Kitchenette / Break Room	Recycling - Residences	Recycling	
Total Weight	0.41	0.51	4.82	0.54	6.28		1.51	0.74	3.58	22.78	28.61	
Sample Size	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	kg	%
Composition of Waste												
PET #1	0.00	0.00	0.03	0.00	0.03	0.5%	0.52	0.06	0.65	2.61	3.84	13.4%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.29	0.00	0.29	1.0%
PP #5	0.00	0.00	0.00	0.04	0.04	0.6%	0.00	0.00	0.07	0.33	0.40	1.4%
Polystyrene #6	0.02	0.00	0.45	0.00	0.47	7.5%	0.40	0.02	0.00	0.00	0.42	1.5%
Glass	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	6.46	6.46	22.6%
Al Cans	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.08	0.24	0.32	1.1%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.00	0.10	0.00	0.10	1.6%	0.07	0.00	0.00	0.00	0.07	0.2%
Asceptic Containers	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Fine Paper	0.00	0.00	0.00	0.00	0.00	0.0%	0.07	0.55	0.21	0.74	1.57	5.5%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.21	0.00	0.16	0.00	0.37	5.9%	0.12	0.11	0.92	1.04	2.19	7.6%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.00	0.00	0.0%	0.12	0.00	0.37	0.36	0.85	3.0%
Paper Towels	0.05	0.15	0.38	0.35	0.93	14.8%	0.00	0.00	0.00	0.00	0.00	0.0%
Coffee Cups	0.08	0.00	0.10	0.00	0.18	2.9%	0.00	0.00	0.02	0.27	0.29	1.0%
Organic Food Waste	0.00	0.26	2.28	0.00	2.54	40.4%	0.00	0.00	0.37	4.80	5.17	18.1%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	0.05	0.10	1.32	0.15	1.62	25.8%	0.21	0.00	0.60	5.95	6.76	23.6%
Plastic Lids	2	3								8		
Plastic Straws	1									2		
Plastic Cutlery	2	1	2				1		1	1		
Other												

Notes: all weights in kg, single use plastics by count, not weight

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Location: Watson Hall, University of Guelph

Date: Monday, March 18th, 2019

Area Description	Waste - Residence		Recycling - Residence	
Total Weight	13.53		3.59	
Sample Size	kg	%		%
Composition of Waste				
PET #1	0.65	4.8%	0.26	7.2%
HDPE Plastic Containers #2	0.00	0.0%	0.08	2.2%
PP #5	0.32	2.4%	0.06	1.7%
Polystyrene #6	0.00	0.0%	0.00	0.0%
Glass	0.00	0.0%	0.00	0.0%
Al Cans	0.08	0.6%	0.18	5.0%
Steel Cans	0.00	0.0%	0.10	2.8%
Gable Top Containers	0.05	0.4%	0.07	1.9%
Asceptic Containers	0.00	0.0%	0.00	0.0%
Fine Paper	0.00	0.0%	0.42	11.7%
Newsprint	0.00	0.0%	0.00	0.0%
Boxboard	0.98	7.2%	0.37	10.3%
Other Paper Fibres	0.00	0.0%	0.00	0.0%
Corrugated Cardboard	0.00	0.0%	1.23	34.3%
Paper Towels	0.00	0.0%	0.15	4.2%
Coffee Cups	0.20	1.5%	0.00	0.0%
Organic Food Waste	0.29	2.1%	0.00	0.0%
LDPE Plastic Films #4	0.00	0.0%	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.0%	0.00	0.0%
Plastic Strapping	0.00	0.0%	0.00	0.0%
Metal	0.00	0.0%	0.00	0.0%
Wood	0.00	0.0%	0.22	6.1%
E- Waste	0.00	0.0%	0.00	0.0%
Bulbs	0.00	0.0%	0.00	0.0%
Batteries	0.00	0.0%	0.00	0.0%
Printer Toners	0.00	0.0%	0.00	0.0%
Non Recyclable	10.96	81.0%	0.45	12.5%
Plastic Lids	10		3	
Plastic Straws	1			
Plastic Cutlery	8		2	
Other				

Notes: all weights in kg, single use plastics by count, not weight

waste reduction
Working together to reduce waste

Location: Lambton Hall, University of Guelph

Date: Monday, March 18th, 2019

Area Description	Garbage - Residence		Recycling - Residence	
Total Weight	111.37		29.16	
Sample Size	kg	%	kg	%
Composition of Waste				
PET #1	13.92	12.5%	6.34	21.7%
HDPE Plastic Containers #2	0.00	0.0%	0.00	0.0%
PP #5	1.44	1.3%	1.31	4.5%
Polystyrene #6	0.00	0.0%	0.00	0.0%
Glass	5.83	5.2%	8.77	30.1%
Al Cans	2.88	2.6%	0.51	1.8%
Steel Cans	0.00	0.0%	0.00	0.0%
Gable Top Containers	2.27	2.0%	0.96	3.3%
Asceptic Containers	1.13	1.0%	0.00	0.0%
Fine Paper	0.00	0.0%	0.38	1.3%
Newsprint	0.00	0.0%	0.00	0.0%
Boxboard	9.68	8.7%	3.33	11.4%
Other Paper Fibres	0.00	0.0%	0.00	0.0%
Corrugated Cardboard	8.10	7.3%	2.66	9.1%
Paper Towels	0.00	0.0%	0.00	0.0%
Coffee Cups	1.29	1.2%	0.58	2.0%
Organic Food Waste	15.74	14.1%	0.35	1.2%
LDPE Plastic Films #4	0.00	0.0%	0.00	0.0%
Polystyrene #6 Expanded Foam	0.68	0.6%	0.00	0.0%
Plastic Strapping	0.00	0.0%	0.00	0.0%
Metal	0.00	0.0%	0.00	0.0%
Wood	0.00	0.0%	0.00	0.0%
E- Waste	0.00	0.0%	0.00	0.0%
Bulbs	0.00	0.0%	0.00	0.0%
Batteries	0.00	0.0%	0.00	0.0%
Printer Toners	0.00	0.0%	0.00	0.0%
Non Recyclable	48.42	43.5%	3.97	13.6%
Plastic Lids	10		8	
Plastic Straws	3		2	
Plastic Cutlery	12		3	
Other	3.19		0.44	

Notes: all weights in kg, single use plastics by count, not weight

waste reduction
Working together to reduce waste

Location: Mackinnon Hall, University of Guelph

Date: Tuesday, March 19th, 2019

Area Description	Waste - Office / Admin	Waste - Break Room / Kitchenette	Waste - Classroom / Lecture Hall	Waste - Public Areas	Waste - Washrooms	Garbage		Recycling - Office / Admin	Recycling - Public Areas	Recycling - Classroom / Lecture Hall	Recycling	
Total Weight	10.00	1.56	21.30	10.99	7.20	51.05		19.36	3.23	2.65	25.24	
Sample Size	kg	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	%
Composition of Waste												
PET #1	0.36	0.09	0.49	0.23	0.10	1.27	2.5%	0.16	0.25	0.53	0.94	3.7%
HDPE Plastic Containers #2	0.00	0.14	0.00	0.00	0.00	0.14	0.3%	0.00	0.00	0.02	0.02	0.1%
PP #5	0.00	0.00	0.73	0.11	0.06	0.90	1.8%	0.00	0.11	0.09	0.20	0.8%
Polystyrene #6	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Glass	0.00	0.00	1.01	0.00	0.00	1.01	2.0%	0.00	0.00	0.00	0.00	0.0%
Al Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.02	0.05	0.05	0.12	0.5%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.00	0.14	0.00	0.02	0.16	0.3%	0.04	0.00	0.05	0.09	0.4%
Asceptic Containers	0.00	0.00	0.00	0.07	0.00	0.07	0.1%	0.02	0.03	0.00	0.05	0.2%
Fine Paper	1.10	0.19	0.00	0.38	0.00	1.67	3.3%	17.98	1.63	0.68	20.29	80.4%
Newsprint	0.33	0.00	0.00	0.00	0.00	0.33	0.6%	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.08	0.17	0.31	1.19	0.10	1.85	3.6%	0.42	0.12	0.26	0.80	3.2%
Other Paper Fibres	0.00	0.00	0.00	0.00		0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.61	0.69	1.30	5.2%
Paper Towels	1.07	0.32	0.00	0.00	3.43	4.82	9.4%	0.09	0.00	0.00	0.09	0.4%
Coffee Cups	0.64	0.09	4.51	2.54	0.31	8.09	15.9%	0.08	0.09	0.08	0.25	1.0%
Organic Food Waste	2.65	0.44	0.00	0.81	2.96	6.87	13.4%	0.20	0.00	0.11	0.31	1.2%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	3.78	0.12	14.12	5.65	0.22	23.88	46.8%	0.35	0.34	0.09	0.78	3.1%
Plastic Lids	16	5	65	55	15			3	11	14		
Plastic Straws		1	5	6	4				1	5		
Plastic Cutlery	6	1	3	5	3			2	2			
Other												

Notes: all weights in kg, single use plastics by count, not weight

waste reduction
Working together to reduce waste

Location: McLaughlin Library, University of Guelph

Date: Tuesday, March 19th, 2019

Area Description	Waste - Office / Admin	Waste - Break Room / Kitchenette	Waste - Classroom / Lecture Hall	Waste - Public Areas	Waste - Washrooms	Garbage		Recycling - Office / Admin	Recycling - Public Areas	Recycling - Kitchenette / Break Room	Recycling - Classroom / Lecture Hall	Recycling	
Total Weight	5.51	3.90	0.64	97.42	6.94	114.41		9.23	33.10	0.22	0.18	42.73	
Sample Size	kg	kg	kg	kg	kg	kg	%					kg	%
Composition of Waste													
PET #1	0.15	0.10	0.00	3.28	0.04	3.57	3.1%	0.00	2.61	0.03	0.00	2.64	6.2%
HDPE Plastic Containers #2	0.00	0.02	0.00	0.00	0.00	0.02	0.0%	0.00	0.09	0.00	0.00	0.09	0.2%
PP #5	0.00	0.25	0.00	1.73	0.45	2.43	2.1%	0.00	5.85	0.00	0.00	5.85	13.7%
Polystyrene #6	0.00	0.00	0.00	0.00	0.03	0.03	0.0%	0.00	0.28	0.00	0.00	0.28	0.7%
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	1.37	0.00	0.00	1.37	3.2%
Al Cans	0.00	0.00	0.00	0.23	0.02	0.25	0.2%	0.03	0.84	0.03	0.00	0.90	2.1%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Asceptic Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.22	0.00	0.00	0.22	0.5%
Fine Paper	1.67	0.00	0.29	0.84	0.00	2.80	2.4%	6.34	1.15	0.00	0.00	7.49	17.5%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.12	0.28	0.00	5.90	0.21	6.51	5.7%	1.03	0.90	0.04	0.00	1.97	4.6%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	3.65	0.00	3.65	3.2%	0.63	0.00	0.00	0.00	0.63	1.5%
Paper Towels	0.54	0.29	0.08	0.00	3.91	4.82	4.2%	0.00	0.00	0.08	0.00	0.08	0.2%
Coffee Cups	0.41	0.57	0.06	8.94	0.53	10.51	9.2%	0.00	2.05	0.00	0.02	2.07	4.9%
Organic Food Waste	0.64	0.91	0.10	0.00	0.40	2.05	1.8%	0.00	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	1.98	1.48	0.11	72.84	1.35	77.76	68.0%	1.20	17.73	0.04	0.16	19.13	44.8%
Plastic Lids	16	28	2	70	31			1	57	1	5		
Plastic Straws		2		12	5				11				
Plastic Cutlery	5	5		7	1				7				
Other													

Notes: all weights in kg, single use plastics by count, not weight

Location: Alexander Hall, University of Guelph

Date: Wednesday, March 20th, 2019

Area Description	Waste - Science Labs	Waste - Break Room / Kitchenette	Waste - Classroom / Lecture Hall	Waste - Public Areas	Waste - Washrooms	Garbage		Recycling - Science Labs	Recycling - Kitchenette / Break Room	Recycling - Classroom / Lecture Hall	Recycling	
Total Weight	5.8	3.38	22.09	2.51	4.11	37.89		3.13	0.17	1.03	4.33	
Sample Size	kg	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	%
Composition of Waste												
PET #1	0.02	0.21	1.47	0.00	0.00	1.70	4.5%	0.00	0.00	0.05	0.05	1.2%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
PP #5	0.00	0.00	0.68	0.06	0.00	0.74	2.0%	0.51	0.00	0.00	0.51	11.8%
Polystyrene #6	0.00	0.03	0.00	0.00	0.00	0.03	0.1%	0.02	0.00	0.04	0.06	1.4%
Glass	0.00	0.00	0.61	0.00	0.00	0.61	1.6%	0.00	0.00	0.00	0.00	0.0%
Al Cans	0.00	0.00	0.06	0.00	0.00	0.06	0.2%	0.00	0.00	0.00	0.00	0.0%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.03	0.03	0.7%
Gable Top Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Asceptic Containers	0.00	0.00	0.04	0.00	0.00	0.04	0.1%	0.00	0.00	0.00	0.00	0.0%
Fine Paper	0.00	0.12	2.02	0.32	0.00	2.46	6.5%	1.28	0.00	0.00	1.28	29.6%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.12	0.19	0.44	0.00	0.15	0.90	2.4%	0.57	0.00	0.00	0.57	13.2%
Other Paper Fibres	0.00	0.00	0.16	0.00	0.00	0.16	0.4%	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.22	0.62	0.00	0.00	0.84	2.2%	0.66	0.00	0.00	0.66	15.2%
Paper Towels	0.05	0.14	0.38	0.00	3.41	3.98	10.5%	0.00	0.00	0.06	0.06	1.4%
Coffee Cups	0.07	0.00	2.70	0.18	0.10	3.05	8.0%	0.00	0.00	0.00	0.00	0.0%
Organic Food Waste	0.00	0.00	2.36	0.23	0.00	2.59	6.8%	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.14	0.00	0.00	0.14	0.4%	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	5.54	2.47	10.41	1.72	0.45	20.59	54.3%	0.09	0.17	0.85	1.11	25.6%
Plastic Lids	4	5	131	13	5					1		
Plastic Straws			25									
Plastic Cutlery		2	10	2						1		
Other *	1.28											

Notes: all weights in kg, sin Mostly lab glass, found in the garbage stream in yellow opaque bags

Location: Science Complex & MacNaughton, University of Guelph

Date: Wednesday, March 20th, 2019

Area Description	Waste		Recycling	
Total Weight	59.9		35.71	
Sample Size	kg	%	kg	%
Composition of Waste				
PET #1	0.00	0.0%	3.02	8.5%
HDPE Plastic Containers #2	0.27	0.5%	0.65	1.8%
PP #5	0.43	0.7%	2.82	7.9%
Polystyrene #6	0.00	0.0%	1.11	3.1%
Glass	0.00	0.0%	0.79	2.2%
Al Cans	0.16	0.3%	0.45	1.3%
Steel Cans	0.00	0.0%	0.35	1.0%
Gable Top Containers	0.10	0.2%	0.11	0.3%
Asceptic Containers	0.00	0.0%	0.18	0.5%
Fine Paper	0.37	0.6%	5.03	14.1%
Newsprint	0.00	0.0%	0.28	0.8%
Boxboard	0.78	1.3%	3.25	9.1%
Other Paper Fibres	0.00	0.0%	3.35	9.4%
Corrugated Cardboard	0.59	1.0%	5.39	15.1%
Paper Towels	7.04	11.8%	0.74	2.1%
Coffee Cups	6.38	10.7%	1.20	3.4%
Organic Food Waste	0.57	1.0%	0.13	0.4%
LDPE Plastic Films #4	0.00	0.0%	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.0%	0.17	0.5%
Plastic Strapping	0.00	0.0%	0.00	0.0%
Metal	0.00	0.0%	0.00	0.0%
Wood	0.00	0.0%	0.00	0.0%
E- Waste	0.00	0.0%	0.00	0.0%
Bulbs	0.00	0.0%	0.00	0.0%
Batteries	0.00	0.0%	0.00	0.0%
Printer Toners	0.00	0.0%	0.00	0.0%
Non Recyclable	43.21	72.1%	6.69	18.7%
Plastic Lids	138		120	
Plastic Straws	20		28	
Plastic Cutlery	20		9	
Other *				

Notes: all weights in kg, single use plastics by count, not weight, two buildings placed in same bin and not labell

Location: OVC Large Animal Clinic, University of Guelph

Date: Thursday, March 21st, 2019

Area Description	Waste - Public Areas	Waste - Classroom / Lecture Hall	Waste - Washrooms	Waste - Office / Admin	Garbage		Recycling - Office / Admin	Recycling - Classroom / Lecture Hall	Recycling - Public Areas	Recycling	
Total Weight	17.83	14.48	4.24	10.07	46.62		4.11	0.4	0.98	5.49	
Sample Size	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	%
Composition of Waste											
PET #1	0.18	0.06	0.00	0.04	0.28	0.6%	0.37	0.00	0.11	0.48	8.7%
HDPE Plastic Containers #2	0.46	0.05	0.00	0.76	1.27	2.7%	0.18	0.03	0.00	0.21	3.8%
PP #5	0.00	0.00	0.00	0.23	0.23	0.5%	0.06	0.00	0.02	0.08	1.5%
Polystyrene #6	0.03	0.00	0.00	0.00	0.03	0.1%	0.00	0.00	0.02	0.02	0.4%
Glass	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Al Cans	0.00	0.00	0.00	0.00	0.00	0.0%	0.10	0.00	0.03	0.13	2.4%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.07	0.07	1.3%
Gable Top Containers	0.00	0.00	0.00	0.00	0.00	0.0%	0.10	0.00	0.00	0.10	1.8%
Asceptic Containers	0.18	0.00	0.00	0.02	0.20	0.4%	0.04	0.00	0.00	0.04	0.7%
Fine Paper	0.07	0.10	0.00	0.03	0.20	0.4%	1.02	0.04	0.37	1.43	26.0%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.27	0.11	0.00	0.34	0.72	1.5%	1.10	0.33	0.11	1.54	28.1%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.47	0.47	1.0%	0.43	0.00	0.00	0.43	7.8%
Paper Towels	0.52	0.16	3.60	1.33	5.61	12.0%	0.09	0.00	0.00	0.09	1.6%
Coffee Cups	0.84	0.05	0.00	0.71	1.60	3.4%	0.03	0.00	0.03	0.06	1.1%
Organic Food Waste	0.00	0.00	0.00	1.68	1.68	3.6%	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	15.28	13.95	0.64	4.46	34.33	73.6%	0.59	0.00	0.22	0.81	14.8%
Plastic Lids	23			30			5		5		
Plastic Straws	1			2			1		3		
Plastic Cutlery	2			8			2	1	4		
Other *	0.6	5.49									

Notes: all weights in kg, sin such as smocks, cloths, surgical wear, etc.

Location: OVC Pathobio & Animal Health Lab, University of Guelph

Date: Thursday, March 21st, 2019

Area Description	Recycling - AHL Labs	Recycling - Public Areas	Recycling - Office / Admin	Recycling	
Total Weight	5.96	1.91	7.57	15.44	
Sample Size				kg	%
Composition of Waste					
PET #1	0.25	0.47	0.38	1.10	7.1%
HDPE Plastic Containers #2	0.08	0.00	0.12	0.20	1.3%
PP #5	1.93	0.00	0.07	2.00	13.0%
Polystyrene #6	0.15	0.02	0.00	0.17	1.1%
Glass	0.00	0.00	0.26	0.26	1.7%
Al Cans	0.00	0.15	0.23	0.38	2.5%
Steel Cans	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.02	0.00	0.02	0.1%
Asceptic Containers	0.00	0.06	0.00	0.06	0.4%
Fine Paper	0.20	0.32	4.29	4.81	31.2%
Newsprint	0.00	0.00	0.29	0.29	1.9%
Boxboard	1.96	0.28	0.58	2.82	18.3%
Other Paper Fibres	0.00	0.00	0.90	0.90	5.8%
Corrugated Cardboard	0.90	0.00	0.00	0.90	5.8%
Paper Towels	0.00	0.08	0.07	0.15	1.0%
Coffee Cups	0.00	0.21	0.03	0.24	1.6%
Organic Food Waste	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	0.49	0.30	0.35	1.14	7.4%
Plastic Lids		12	6		
Plastic Straws		1			
Plastic Cutlery		4	5		
Other *					

Notes: all weights in kg, single use plastics by count, not weight, only recycling audited as waste was bloody and in biohazard bags (in the waste bin, not the adjacent biohazard bin)

Location: Biodiversity Institute of Ontario, University of Guelph

Date: Thursday, March 21st, 2019

Area Description	Waste - Science Labs	Waste - Washrooms	Waste - Public Areas	Waste - Classrooms / Lecture Halls	Waste - Kitchenette / Break Room	Garbage		Recycling - Kitchenette / Break Room	Recycling - Classroom / Lecture Hall	Recycling - Public Areas	Recycling - Science Labs	Recycling	
Total Weight	22.03	1.55	3.58	0.6	0.86	28.62		0.78	0.16	0.96	22.13	24.03	
Sample Size	kg	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	kg	%
Composition of Waste													
PET #1	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.02	0.02	0.00	0.22	0.26	1.1%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.33	0.33	1.4%
PP #5	0.00	0.00	0.00	0.00	0.10	0.10	0.3%	0.07	0.00	0.00	17.01	17.08	71.1%
Polystyrene #6	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.17	0.03	0.06	0.00	0.26	1.1%
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.31	0.31	1.3%
Al Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.02	0.00	0.00	0.00	0.02	0.1%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.23	0.00	0.00	0.00	0.23	1.0%
Gable Top Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Asceptic Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Fine Paper	0.19	0.00	0.00	0.00	0.00	0.19	0.7%	0.00	0.00	0.84	0.57	1.41	5.9%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.02	0.00	0.00	0.07	0.00	0.09	0.3%	0.14	0.03	0.00	0.97	1.14	4.7%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.21	0.21	0.9%
Corrugated Cardboard	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	2.10	2.10	8.7%
Paper Towels	0.00	1.47	0.00	0.00	0.00	1.47	5.1%	0.00	0.00	0.00	0.00	0.00	0.0%
Coffee Cups	0.00	0.00	0.33	0.21	0.02	0.56	2.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Organic Food Waste	0.00	0.00	0.00	0.21	0.70	0.91	3.2%	0.08	0.00	0.00	0.00	0.08	0.3%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	21.82	0.08	3.25	0.11	0.04	25.30	88.4%	0.05	0.08	0.06	0.41	0.60	2.5%
Plastic Lids	1		20	9						1			
Plastic Straws	20												
Plastic Cutlery				3									
Other *	4.34												

Notes: all weights in kg, single use plastics by count, not weight

Location: MacDonald Hall, University of Guelph

Date: Friday, March 22nd, 2019

Area Description	Waste - Washrooms	Waste - Public Areas	Waste - Classrooms / Lecture Halls	Waste - Kitchenette / Break Room	Garbage		Recycling - Kitchenette / Break Room	Recycling - Classroom / Lecture Hall	Recycling - Public Areas	Recycling	
Total Weight	4.14	5.33	1.70	4.72	15.89		4.16	0.73	1.64	6.53	
Sample Size	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	%
Composition of Waste											
PET #1	0.00	0.02	0.09	0.08	0.19	1.2%	0.44	0.08	0.13	0.65	10.0%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
PP #5	0.00	0.14	0.02	0.09	0.25	1.6%	0.00	0.00	0.28	0.28	4.3%
Polystyrene #6	0.00	0.00	0.13	0.00	0.13	0.8%	0.68	0.00	0.00	0.68	10.4%
Glass	0.22	0.00	0.00	0.00	0.22	1.4%	0.00	0.00	0.00	0.00	0.0%
Al Cans	0.00	0.00	0.00	0.04	0.04	0.3%	0.16	0.00	0.05	0.21	3.2%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.0%	0.04	0.00	0.00	0.04	0.6%
Gable Top Containers	0.00	0.00	0.00	0.00	0.00	0.0%	0.06	0.00	0.04	0.10	1.5%
Asceptic Containers	0.00	0.00	0.00	0.06	0.06	0.4%	0.00	0.00	0.00	0.00	0.0%
Fine Paper	0.05	0.03	0.00	0.08	0.16	1.0%	0.75	0.00	0.14	0.89	13.6%
Newsprint	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.05	0.17	0.21	0.22	0.65	4.1%	0.34	0.15	0.06	0.55	8.4%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Paper Towels	3.69	0.07	0.18	0.95	4.89	30.8%	0.07	0.00	0.07	0.14	2.1%
Coffee Cups	0.11	0.31	0.24	0.60	1.26	7.9%	0.18	0.17	0.14	0.49	7.5%
Organic Food Waste	0.00	3.17	0.11	1.75	5.03	31.7%	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	0.02	1.42	0.72	0.85	3.01	18.9%	1.44	0.33	0.73	2.50	38.3%
Plastic Lids	3	23	8	29			15	3	17		
Plastic Straws		47		6			3		3		
Plastic Cutlery			2	9			3	1	1		
Other *			0.04								

Notes: all weights in kg, single use plastics by count #7 Plastic cups

Location: MacDonald Institute, University of Guelph

Date: Friday, March 22nd, 2019

Area Description	Recycling - Classroom / Lecture Hall	Recycling - Public Areas	Recycling - Office / Admin	Recycling	
Total Weight	3.86	3.70	3.54	11.10	
Sample Size	kg	kg	kg	kg	%
Composition of Waste					
PET #1	0.17	1.57	0.18	1.92	17.3%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.0%
PP #5	0.12	0.00	0.11	0.23	2.1%
Polystyrene #6	0.00	0.00	0.00	0.00	0.0%
Glass	1.50	0.00	0.07	1.57	14.1%
Al Cans	0.00	0.00	0.38	0.38	3.4%
Steel Cans	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.00	0.00	0.00	0.0%
Asceptic Containers	0.49	0.00	0.00	0.49	4.4%
Fine Paper	0.67	0.36	0.60	1.63	14.7%
Newsprint	0.00	0.00	0.00	0.00	0.0%
Boxboard	0.27	0.26	2.00	2.53	22.8%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.21	0.00	0.00	0.21	1.9%
Paper Towels	0.00	0.00	0.00	0.00	0.0%
Coffee Cups	0.27	0.07	0.08	0.42	3.8%
Organic Food Waste	0.00	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	0.16	1.44	0.12	1.72	15.5%
Plastic Lids	19	6	5		
Plastic Straws	32		1		
Plastic Cutlery	1		3		
Other *					

Location: University of Guelph

Date: Friday, March 22nd, 2019

Area Description	Waste - Washrooms	Waste - Public Areas	Waste - Office / Admin	Waste - Classrooms / Lecture Halls	Waste - Kitchenette / Break Room	Garbage		Recycling - Kitchenette / Break Room	Recycling - Classroom / Lecture Hall	Recycling - Office / Admin	Recycling - Public Areas	Recycling	
Total Weight	1.37	1.14	0.67	5.98	2.00	11.16		1.07	2.43	0.20	0.70	4.40	
Sample Size	kg	kg	kg	kg	kg	kg	%	kg	kg	kg	kg	kg	%
Composition of Waste													
PET #1	0.00	0.00	0.00	0.67	0.00	0.67	6.0%	0.25	0.86	0.06	0.28	1.45	33.0%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.02	0.02	0.5%
PP #5	0.00	0.03	0.04	0.23	0.00	0.30	2.7%	0.23	0.24	0.00	0.00	0.47	10.7%
Polystyrene #6	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Glass	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.25	0.00	0.00	0.25	5.7%
Al Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.13	0.11	0.00	0.00	0.24	5.5%
Steel Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Gable Top Containers	0.00	0.00	0.00	0.00	0.08	0.08	0.7%	0.00	0.00	0.00	0.00	0.00	0.0%
Asceptic Containers	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Fine Paper	0.00	0.00	0.07	0.17	0.00	0.24	2.2%	0.00	0.08	0.02	0.30	0.40	9.1%
Newsprint	0.00	0.02	0.00	0.00	0.00	0.02	0.2%	0.20	0.00	0.00	0.00	0.20	4.5%
Boxboard	0.00	0.00	0.00	0.41	0.05	0.46	4.1%	0.12	0.17	0.00	0.04	0.33	7.5%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Paper Towels	1.37	0.20	0.05	0.05	0.45	2.12	19.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Coffee Cups	0.00	0.17	0.10	1.40	0.02	1.69	15.1%	0.00	0.19	0.00	0.00	0.19	4.3%
Organic Food Waste	0.00	0.26	0.30	0.51	0.92	1.99	17.8%	0.00	0.12	0.00	0.00	0.12	2.7%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.00	0.0%
Non Recyclable	0.00	0.46	0.11	2.54	0.48	3.59	32.2%	0.14	0.41	0.12	0.06	0.73	16.6%
Plastic Lids		7	2	76	1				26	5	1		
Plastic Straws			1	5					2				
Plastic Cutlery		3	2	12				1	1				
Other *													

Location: South Residence, University of Guelph

Date: Monday, March 25th, 2019

Area Description	Waste - Washrooms	Waste - Public Areas	Waste - Residences	Garbage		Recycling - Residences	
Total Weight	2.69	52.22	29.74	84.65		95.23	
Sample Size	kg	kg	kg	kg	%		%
Composition of Waste							
PET #1	0.27	2.56	2.06	4.89	5.8%	24.60	25.8%
HDPE Plastic Containers #2	0.19	0.36	0.22	0.77	0.9%	0.00	0.0%
PP #5	0.00	1.68	0.89	2.57	3.0%	0.79	0.8%
Polystyrene #6	0.00	0.00	0.20	0.20	0.2%	0.14	0.2%
Glass	0.00	6.33	0.89	7.23	8.5%	4.91	5.2%
Al Cans	0.08	0.55	0.05	0.67	0.8%	3.17	3.3%
Steel Cans	0.00	0.13	0.27	0.40	0.5%	0.00	0.0%
Gable Top Containers	0.00	0.38	0.00	0.38	0.4%	1.15	1.2%
Asceptic Containers	0.00	0.00	0.47	0.47	0.6%	2.53	2.7%
Fine Paper	0.00	0.34	2.46	2.79	3.3%	6.49	6.8%
Newsprint	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Boxboard	0.00	1.66	1.61	3.27	3.9%	11.25	11.8%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Corrugated Cardboard	0.00	3.02	0.15	3.17	3.7%	13.35	14.0%
Paper Towels	1.67	0.65	1.07	3.39	4.0%	4.47	4.7%
Coffee Cups	0.00	1.03	1.17	2.19	2.6%	1.80	1.9%
Organic Food Waste	0.10	25.12	12.75	37.97	44.9%	7.29	7.7%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.21	0.00	0.21	0.2%	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Metal	0.07	1.30	0.12	1.49	1.8%	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.0%	0.00	0.0%
Non Recyclable	0.31	6.92	5.36	12.59	14.9%	13.27	13.9%
Plastic Lids		20	19			18	
Plastic Straws		15	9			9	
Plastic Cutlery		7	3			4	
Other *							

Location: East Residence, University of Guelph

Date: Monday, March 25th, 2019

Area Description	Waste - Washrooms	Waste - Public Areas	Waste - Residences	Garbage		Recycling - Public Areas	Recycling - Residences	Recycling	
Total Weight	0.59	6.24	208.88	215.71		1.60	45.86	47.46	
Sample Size	kg	kg	kg	kg	%	kg	kg	kg	%
Composition of Waste									
PET #1	0.00	0.35	19.84	20.19	9.4%	0.44	6.17	6.61	13.9%
HDPE Plastic Containers #2	0.00	0.60	3.28	3.88	1.8%	0.00	0.21	0.21	0.4%
PP #5	0.00	0.00	5.25	5.25	2.4%	0.02	0.46	0.48	1.0%
Polystyrene #6	0.00	0.03	2.05	2.08	1.0%	0.33	0.25	0.58	1.2%
Glass	0.00	0.00	8.03	8.03	3.7%	0.46	4.64	5.10	10.7%
Al Cans	0.00	0.03	2.21	2.24	1.0%	0.05	0.75	0.80	1.7%
Steel Cans	0.00	0.00	0.00	0.00	0.0%	0.00	0.58	0.58	1.2%
Gable Top Containers	0.00	0.00	1.31	1.31	0.6%	0.00	0.87	0.87	1.8%
Asceptic Containers	0.00	0.02	2.38	2.40	1.1%	0.00	0.99	0.99	2.1%
Fine Paper	0.00	0.08	12.71	12.79	5.9%	0.04	2.69	2.73	5.8%
Newsprint	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Boxboard	0.00	0.25	9.43	9.68	4.5%	0.07	6.95	7.02	14.8%
Other Paper Fibres	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.11	0.57	0.68	0.3%	0.00	3.73	3.73	7.8%
Paper Towels	0.59	0.33	10.82	11.74	5.4%	0.00	0.41	0.41	0.9%
Coffee Cups	0.00	0.07	2.71	2.78	1.3%	0.05	0.33	0.38	0.8%
Organic Food Waste	0.00	2.94	54.93	57.87	26.8%	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.90	0.90	0.4%	0.00	0.25	0.25	0.5%
Plastic Strapping	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Non Recyclable	0.00	1.43	72.47	73.90	34.3%	0.14	16.60	16.74	35.3%
Plastic Lids		2	18			6	7		
Plastic Straws		1	9				3		
Plastic Cutlery		2	3				1		
Other *									

Location: University Center, University of Guelph

Date: Tuesday, March 26th, 2019

Area Description	Waste - Hospitality Back of House	Waste - Hospitality Front of House	Garbage		Recycling - Hospitality Front of House	Recycling - Hospitality Back of House	Recycling	
Total Weight	164.78	190.68	355.46		8.80	36.95	45.75	
Sample Size	kg	kg	kg	%	kg	kg	kg	%
Composition of Waste								
PET #1	2.26	1.49	3.75	1.1%	3.34	3.92	7.26	15.9%
HDPE Plastic Containers #2	0.60	0.00	0.60	0.2%	0.00	11.46	11.46	25.1%
PP #5	0.23	0.63	0.86	0.2%	0.45	4.58	5.03	11.0%
Polystyrene #6	0.18	1.72	1.91	0.5%	0.00	0.00	0.00	0.0%
Glass	0.00	0.00	0.00	0.0%	1.31	0.00	1.31	2.9%
Al Cans	0.00	0.24	0.24	0.1%	0.18	0.00	0.18	0.4%
Steel Cans	0.00	0.00	0.00	0.0%	0.00	7.20	7.20	15.7%
Gable Top Containers	3.69	0.00	3.69	1.0%	0.00	2.72	2.72	5.9%
Asceptic Containers	1.06	0.00	1.06	0.3%	0.00	0.00	0.00	0.0%
Fine Paper	9.31	2.35	11.66	3.3%	0.44	0.06	0.50	1.1%
Newsprint	0.37	0.00	0.37	0.1%	0.31	0.00	0.31	0.7%
Boxboard	0.88	34.48	35.36	9.9%	0.74	1.26	2.00	4.4%
Other Paper Fibres	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Paper Towels	4.38	3.29	7.67	2.2%	0.00	0.00	0.00	0.0%
Coffee Cups	0.88	9.40	10.28	2.9%	1.00	0.00	1.00	2.2%
Organic Food Waste	58.69	52.27	110.96	31.2%	0.50	1.93	2.43	5.3%
LDPE Plastic Films #4	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.47	0.47	0.1%	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Printer Toners	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Non Recyclable	82.27	84.33	166.60	46.9%	0.53	3.82	4.35	9.5%
Plastic Lids	7	26			31			
Plastic Straws		3			5			
Plastic Cutlery	1	64			35			
Other *								

Location: Creelman Hall, University of Guelph

Date: Tuesday, March 26th, 2019

Area Description	Waste - Hospitality Back of House	Waste - Hospitality Front of House	Garbage		Recycling - Hospitality Front of House	Recycling - Hospitality Back of House	Recycling	
Total Weight	68.16	48.68	116.84		9.31	5.86	15.17	
Sample Size	kg	kg	kg	%	kg	kg	kg	%
Composition of Waste								
PET #1	0.00	0.16	0.16	0.1%	4.52	0.28	4.80	31.6%
HDPE Plastic Containers #2	0.00	0.00	0.00	0.0%	0.17	0.00	0.17	1.1%
PP #5	0.00	0.09	0.09	0.1%	0.05	0.00	0.05	0.3%
Polystyrene #6	0.00	0.00	0.00	0.0%	0.17	0.00	0.17	1.1%
Glass	0.00	0.00	0.00	0.0%	0.59	2.48	3.07	20.2%
Al Cans	0.00	0.00	0.00	0.0%	0.51	0.05	0.56	3.7%
Steel Cans	0.00	0.00	0.00	0.0%	0.00	1.65	1.65	10.9%
Gable Top Containers	0.99	0.98	1.97	1.7%	0.00	0.00	0.00	0.0%
Asceptic Containers	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Fine Paper	0.00	0.00	0.00	0.0%	0.00	0.02	0.02	0.1%
Newsprint	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Boxboard	0.00	0.00	0.00	0.0%	0.06	0.00	0.06	0.4%
Other Paper Fibres	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Corrugated Cardboard	0.00	0.00	0.00	0.0%	0.00	0.44	0.44	2.9%
Paper Towels	2.50	2.47	4.96	4.2%	1.88	0.00	1.88	12.4%
Coffee Cups	0.00	0.13	0.13	0.1%	0.15	0.00	0.15	1.0%
Organic Food Waste	48.44	44.13	92.57	79.2%	0.00	0.00	0.00	0.0%
LDPE Plastic Films #4	0.00	0.22	0.22	0.2%	0.00	0.00	0.00	0.0%
Polystyrene #6 Expanded Foam	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Plastic Strapping	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Metal	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Wood	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
E- Waste	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Bulbs	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Batteries	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Priner Toners	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Non Recyclable	16.23	0.51	16.74	14.3%	1.21	0.94	2.15	14.2%
Plastic Lids					9			
Plastic Straws					3			
Plastic Cutlery								
Other *								

Waste Generated by the UofG (Tonnes)

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Landfill	900	1408	2200	2251	2249	2596	2712	2535	2249	2825	2896	2552	2170	2396	2511	2186	2361	2327	1954	2331	2203	2051	
Diversion Total	1966	1707	1149	1687	1646	1026	1160	1599	1778	1765	1260	2080	2214	2274	1947	1778	1665	1608	1617	1640	1653	1663	
Mixed Recyclables	734.4	618.5	413.3	494.1	419.5	20.5	201.9	355.0	468.9	####	####	####	####	####	461.1	503.2	491.8	452.1	431.1	349.9	354.6	315.6	
Cardboard	118.1													0.8	2.2					18.4	34.1	46.92	
Paper	58.2	20.5	20.5	13.0	7.6	6.6		3.0	0.7											48.3	58.5	123.50	
Electronic Waste									0.9	10.4	24.7	28.5	25.2	39.3	34.7	10.1	14.9	11.9	7.3	21.7	8.4	14.98	
Scrap Metal	5.6	3.3	3.3	7.2	4.9	5.1	1.8	1.4	0.6	0.9	24.0	33.1	41.8	36.3	44.2	26.9	19.3	23.6	24.7	28.4	38.6	53.26	
Wood		1.8									25.2	54.9	40.8	48.1	48.3	20.7	16.0	12.2	24.2	14.6	31.4	15.42	
Books			1.4			0.5							4.6	9.2	27.6	4.9	2.1					8.35	
Beverage Bottles												27.2	29.1	24.7	23.8	4.7						3.85	
Tires	1.5	2.1	0.2	0.2		0.5	0.2	0.2															
Manure	494	802	695	1169	1203	992	955	1236	1302	879	575	1300	1300	1300	1000	1000	1000	1000	1000	1000	1000	1000	
Soil (estimate)													25	90	90	90	90	90	90	90	90		
Yard Waste	13	8	14	4	11	0	1	1	3	397	129	110	109	1	105				1	30			
Compost	540	248									3	5	2	3	5	13	16				3	33	
Coffee Grounds																1	8	18	39	38	35		
Food Oil												10	10	10	9	5	6					18.14	
Rendering													200	265	94	94							
Flourescent Lamps												2.5	3.9	0.9	0.3	1.8	0.4					0.31	
Batteries												2.0	2.2	1.7	1.8	1.9	0.2					1.06	
Contaminated Wood/Paint	0.6	2.1	1.6			0.9		3.5	2.3													28.14	

0.00679673 22817

Liquor - 37 bottles - average per month - 12.3 (765 grams/bottle = 12.3*12*765 = 112,914 GRAMS or 0.11 Tonne
Wine - 766 bottles - average per month – 255 (550 grams/bottle)= 255*12*550= 1,683,000 or 1.68 TONNES
Beer - 2,547 bottles - average per month 849 (200 grams/bottle) = 849*12*200=2,037,600 or 2.04 TONNES
Liqueur - 5 bottles - average per month 1.6 (765 grams/bottle)= 14688 or 0.015 TONNES

Waste Audit Report

Guelph University
WRG Project P1874

Waste Management and Recycling Service Summary

Materials	Program Implemened Yes/No	Service Provider	Campus Contact Name	Contact Number Number	B d u	S i z	N u m	Pick-Up Freq	Annual Quantity
Waste/Garbage	Yes	City of Guelph	Jessica Taylor	(519) 822-1260 ext.2061					
Cardboard	Yes	WasteCo	Pat Dejean	(519) 836-1610					46.92
Mixed Containers (i.e. Bottles & Cans)	Yes	City of Guelph	Jessica Taylor	(519) 822-1260 ext.2061					
Mixed papers (office, news, etc)	Yes	Cascades	Brett Stiles	(647) 465-0632					14.50
Confidential papers/Shredding	Yes	ShredIt	Adam Small	(519) 521-0549					109.00
Organics	No	Campus							
Scrap Metals	Yes	Wasteco	Pat Dejean	(519) 836-1610					53.26
Scrap Woods	Yes	Wasteco	Pat Dejean	(519) 836-1610					15.42
Electronic Wastes	Yes	TechWreckers	Peter Lewis	(519) 500-5585					14.98
Fluorescent Bulbs & Ballasts	Yes	RPR Environmental	Agnes Zielinska	(905) 662-0062					0.31
Batteries	Yes	RPR Environmental	Agnes Zielinska	(905) 662-0062					1.06
Printer Toner Cartridges	Yes	Staples	Ramez Kolta	(647) 966-3905					
Paper Towels	No								
Coffee cups	No								
#2 HDPE Plastics (i.e. large pails)	No								
#4 LDPE Plastic Films	No								
#6 Polystyrene/Styrofoam	No								
Other/Mixed Plastics	No								
Wood skids/pallets (Reuse)	Yes								
Used furniture/equipment (Reuse)	Yes (Reuse)								
Other: LCBO/Beer Store Returns	Yes								3.85
Other: Oil & Grease	Yes								18.14
Other: Yard Wastes	Yes								
Other: Reduction - Water Bottle Filling Stations	Yes								
Other: Reduction - Double sided printing	Yes								
Other: Reduction - Refillable coffee mug program	Yes								
Other: Lab Glass Recycling	No								
Other: Manure Composting	Yes (Reuse)								

Appendix C

Waste Audit Summary

Ministry of the Environment Waste Form

Report of a Waste Audit

Industrial, Commercial and Institutional Establishments

As required by O. Reg. 102/94

- ***This report must be prepared 6 months after becoming subject to O. Reg. 102/94 and a copy retained on file for at least five years after it is prepared, and be made available to the ministry upon request.***
- ***For large construction and demolition projects, please refer to the forms included with "A Guide to Waste Audits and Waste Reduction Work Plans for Construction and Demolition Projects as Required Under Ontario Regulation 102/94"* (revised July 2008)**

I. GENERAL INFORMATION

Name of Owner and/or Operator of Entity(ies) and Company Name: University of Guelph		
Name of Contact Person:	**Telephone #:**	**Email address:**
Street Address(es) of Entity(ies): 50 Stone Road East		
Municipality: Guelph, Ontario, N1G 2W1		

		Type of Entity (check one)	
Retail Shopping Establishments		Hotels and Motels	
Retail Shopping Complexes		Hospitals	
Office Buildings		Educational Institutions	X
Restaurants		Large Manufacturing Establishments	

Note: O. Reg. 102/94 does not apply to multi-unit residential buildings.

II. DESCRIPTION OF ENTITY

Provide a brief overview of the entity(ties):

University of Guelph is an educational institution with approximately 19,909 FTE students which satisfies Part X of Ontario Regulation 102/94 & 103/94. O.Reg. 102/94 requires operators of educational institutions with more than 350 full- or part-time students enrolled during the calendar year to conduct an annual waste audit and implement a waste reduction work plan. O.Reg. 103/94 requires that source separation programs be implemented and maintained for fine papers, newsprint, aluminum cans, steel cans, glass beverage containers and corrugated cardboard. University of Guelph undertook this audit in order to assist them in reducing wastes generated on campus and/or disposed to landfill, while being in compliance with the required Regulations.

…/1

III. HOW WASTE IS PRODUCED AND DECISIONS AFFECTING THE PRODUCTION OF WASTE

For each category of waste that is produced at the entity(ies), explain how the waste will be produced and how management decisions and policies will affect the production of waste.	
Categories of Waste	**How Is the Waste Produced and What Management Decisions/Policies Affect Its Production?**
PET (#1) plastic food and beverage bottles	*Brought onto campus or generated on campus by staff/students.*
HDPE (#2) Containers	*Brought onto campus/generated on campus by staff/students.*
Polypropylene (#5) Containers	*Brought onto campus or generated on campus by staff/students.*
Polystyrene (#6) Containers	*Brought onto campus/generated on campus by staff/students.*
Glass food and beverage bottles/jars	*Brought onto campus or generated on campus by staff/students.*
Aluminum food and beverage cans	*Brought onto campus or generated on campus by staff/students.*
Steel food and beverage cans	*Brought onto campus or generated on campus by staff/students.*
Gable Top Containers	*Brought onto campus or generated on campus by staff/students.*
Aseptic Containers	*Brought onto campus or generated on campus by staff/students.*
Fine paper	*Brought onto campus or generated on campus by staff/students.*
Newsprint	*Brought onto campus or generated on campus by staff/students.*
Boxboard shoe boxes, cereal boxes, etc.	*Brought onto campus or generated on campus by staff/students.*
Glossy magazines, catalogues, flyers	*Brought onto campus or generated on campus by staff/students.*
Cardboard	*Brought onto campus, shipping/generated on campus by staff/students.*
Paper towels	*Generated by staff/students on campus*
Coffee cups	*Brought onto campus/generated on campus by staff/students.*
Organics / Food Waste	*Brought onto campus/generated on campus by staff/students.*
LDPE (#4) plastic film	*Brought onto campus/generated on campus by staff/students.*
Styrofoam	*Brought onto campus/generated on campus by staff/students.*
Plastics Strapping	*Brought onto campus/generated on campus by staff/students.*
Scrap Metals	*Generated by staff/students on campus*
Scrap Woods/Pallets	*Generated by staff/students on campus*
Electronic Wastes	*Generated by staff/students on campus*
Bulbs & Ballasts	*Generated by staff/students on campus*
Batteries	*Generated by staff/students on campus*
Printer Toners	*Generated by staff/students on campus*
Oil & Grease	*Generated by staff/students on campus*
Contaminated Wood/Paint	*Generated by staff/students on campus*
Textbooks	*Brought onto campus/generated on campus by staff/students.*
Beverage Bottles	*Brought onto campus/generated on campus by staff/students.*
Manure	*Generated by staff/students on campus*
Other / Non-Recyclable	*Generated by staff/students on campus*

Note: When completing this form, write "n/a" in the columns where the entity will not produce any waste for a category of waste.

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IV. MANAGEMENT OF WASTE

For each category of waste listed below, indicate which waste items will be disposed or reused/recycled and how each item will be managed at the entity(ies).		
Category	**Waste to be Disposed**	**Reused or Recycled Waste**
PET (#1) plastic food and beverage bottles	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
HDPE (#2) Containers	*Staff/students may place in garbage*	*Staff/Students may place in recycling containers.*
Polypropylene (#5) Containers	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*

Polystyrene (#6) Containers	*Staff/students may place in garbage*	*Staff/Students may place in recycling containers.*
Glass food and beverage bottles/jars	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Aluminum food and beverage cans	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Steel food and beverage cans	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Gable Top Containers	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Aseptic Containers	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Fine paper	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Newsprint	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Boxboard shoe boxes, cereal boxes, etc.	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Glossy magazines, catalogues, flyers	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Cardboard	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Paper towels	*Staff/Students place in garbage*	*No recycling program implemented.*
Coffee cups	*Staff/Students place in garbage*	*No recycling program implemented.*
Organics / Food Waste	*Staff/Students may place in garbage*	*Staff/Students may place in organics containers.*
LDPE (#4) Plastic Film	*Staff/Students place in garbage*	*No recycling program implemented.*
Styrofoam (#6)	*Staff/Students place in garbage*	*No recycling program implemented.*
Plastic Strapping	*Staff/Students place in garbage*	*No recycling program implemented.*
Scrap Metals	*Staff/students may place in garbage*	*Staff may place in recycling containers.*
Scrap Woods/Pallets	*Staff/students may place in garbage*	*Staff may place in recycling containers.*
Electronic Wastes	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Bulbs & Ballasts	*Staff/Students may place in garbage*	*Staff may place in recycling containers.*
Batteries	*Staff/Students may place in garbage*	*Staff/Students may place in recycling containers.*
Printer Toners	*Staff/Students place in garbage*	*No recycling program implemented.*
Oil & Grease	*Staff may place in garbage*	*Staff may place in recycling containers.*
Contaminated Wood/Paint	*Staff may place in garbage*	*Staff may place in recycling containers.*
Textbooks	*Staff may place in garbage*	*Staff may place in recycling containers.*
Beverage Bottles	*Staff may place in garbage*	*Staff may place in recycling containers.*
Manure	*Staff may place in garbage*	*Staff may place in recycling containers.*
Other / Non-Recyclable	*Staff/students place in garbage*	*Not applicable.*

Note: When completing this form, write "n/a" in the columns where the entity will not produce any waste for a category of waste.

V. ESTIMATED QUANTITY OF WASTE PRODUCED

Categories of Waste	Estimated Amount of Waste											
	Generated			Reduced/Reused			Recycled			Disposed		
	"A" Base Year	"B" Current Year	"C" * Change (A - B)	"A" Base Year	"B" Current Year	"C" * Change (A - B)	"A" Base Year	"B" Current Year	"C" * Change (A - B)	"A" Base Year	"B" Current Year	"C" * Change (A - B)
	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
PET (#1) plastic food and beverage bottles	103.32	103.32	0.00	0.00	0.00	0.00	42.26	42.26	0.00	61.07	61.07	0.00
HDPE (#2) Containers	21.80	21.80	0.00	0.00	0.00	0.00	12.37	12.37	0.00	9.43	9.43	0.00
Polypropylene (#5) Containers	54.34	54.34	0.00	0.00	0.00	0.00	33.22	33.22	0.00	21.12	21.12	0.00
Polystyrene (#6) Containers	9.71	9.71	0.00	0.00	0.00	0.00	3.07	3.07	0.00	6.64	6.64	0.00
Glass food and beverage bottles/jars	43.71	43.71	0.00	0.00	0.00	0.00	20.24	20.24	0.00	23.47	23.47	0.00
Aluminum food and beverage cans	12.62	12.62	0.00	0.00	0.00	0.00	5.63	5.63	0.00	6.99	6.99	0.00
Steel food and beverage cans	9.52	9.52	0.00	0.00	0.00	0.00	9.13	9.13	0.00	0.40	0.40	0.00
Gable Top/Milk Containers	20.53	20.53	0.00	0.00	0.00	0.00	4.42	4.42	0.00	16.11	16.11	0.00
Aseptic Containers	9.32	9.32	0.00	0.00	0.00	0.00	2.65	2.65	0.00	6.67	6.67	0.00
Fine paper	225.89	225.89	0.00	0.00	0.00	0.00	173.09	173.09	0.00	52.80	52.80	0.00
Newsprint	2.36	2.36	0.00	0.00	0.00	0.00	0.99	0.99	0.00	1.37	1.37	0.00
Boxboard shoe boxes, cereal boxes, etc.	142.45	142.45	0.00	0.00	0.00	0.00	27.74	27.74	0.00	114.71	114.71	0.00
Glossy magazines, catalogues, flyers	4.41	4.41	0.00	0.00	0.00	0.00	4.10	4.10	0.00	0.30	0.30	0.00
Corrugated Cardboard	91.13	91.13	0.00	0.00	0.00	0.00	68.28	68.28	0.00	22.85	22.85	0.00
Paper Towels	113.59	113.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	113.59	113.59	0.00
Coffee Cups	92.51	92.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.51	92.51	0.00
Organics	579.19	579.19	0.00	0.00	0.00	0.00	33.00	33.00	0.00	546.19	546.19	0.00
LDPE (#4) Plastic Films	0.42	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.00
Styrofoam (#6) Plastic	2.59	2.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	2.59	0.00
Plastic Strapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scrap Metal	54.68	54.68	0.00	0.00	0.00	0.00	53.26	53.26	0.00	1.42	1.42	0.00
Scrap Wood/Pallets	15.69	15.69	0.00	0.00	0.00	0.00	15.42	15.42	0.00	0.27	0.27	0.00
Electronic Wastes	14.98	14.98	0.00	0.00	0.00	0.00	14.98	14.98	0.00	0.00	0.00	0.00
Fluorescent Bulbs	0.31	0.31	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.00
Batteries	1.06	1.06	0.00	0.00	0.00	0.00	1.06	1.06	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	0.00	0.00	0.00	0.00
Oil & Grease	18.14	18.14	0.00	0.00	0.00	0.00	18.14	18.14	0.00	0.00	0.00	0.00
Contaminated Wood/Paint	28.14	28.14	0.00	0.00	0.00	0.00	28.14	28.14	0.00	0.00	0.00	0.00
Textbooks	8.35	8.35	0.00	8.35	8.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beverage Bottles	3.85	3.85	0.00	3.85	3.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	1812.90	1812.90	0.00	0.00	0.00	0.00	1812.90	1812.90	0.00	0.00	0.00	0.00
Other/Nonrecyclable	1028.68	1028.68	0.00	0.00	0.00	0.00	78.85	78.85	0.00	949.83	949.83	0.00
Total	4526.19	4526.19	0.00	12.20	12.20	0.00	2463.25	2463.25	0.00	2050.74	2050.74	0.00
Percent Change (C ÷A x 100)			0.0%			0.0%			0.0%			0.0%

Note: When completing this form, write “n/a” in the “Estimated Amount of Waste Produced” column where the entity will not produce any waste for a category of waste

* Fill out these columns each year following the initial waste audit or baseline year to determine the progress that is being made by your waste reduction program

Base year taken as 2018

VI. EXTENT TO WHICH MATERIALS OR PRODUCTS USED OR SOLD BY THE ENTITY CONSIST OF RECYCLED OR REUSED MATERIALS OR PRODUCTS

Please answer the following questions:

1. Do you have a management policy in place that promotes the purchasing and/or use of materials or products that consist of recycled and/or reused materials or products? If yes, please describe.

   No formal "green" purchasing policy is in place at University of Guelph. However, the different purchasing departments at University of Guelph do consider environmental impacts of their purchases whenever options are available and feasible.

2. Do you have plans to increase the extent to which materials or products used or sold* consist of recycled or reused materials or products? If yes, please describe.

   Not applicable.

   ***** Information regarding materials or products "sold" that consist of recycled or reused materials or products is only required from owner(s) of retail shopping establishments and the owner(s) or operator(s) of large manufacturing establishments.
   Please attach any additional page(s) as required to answer the above questions.

I hereby certify that the information provided in this Report of Waste Audit is complete and correct.		
Signature of authorized official:	**Title:**	**Date:**

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Appendix D

Waste Reduction Work Plan

Ministry of the Environment Waste Form

Report of a Waste Reduction Work Plan

Industrial, Commercial and Institutional Establishments

As required by O. Reg. 102/94

This report must be prepared 6 months after becoming subject to O. Reg. 102/94 and a copy retained on file for at least five years after it is prepared, and be made available to the ministry upon request.

I. GENERAL INFORMATION

Name of Owner and/or Operator of Entity(ies) and Company Name: University of Guelph		
Name of Contact Person:	**Telephone #:**	**Email address:**
Street Address(es) of Entity(ies): 50 Stone Road East		
Municipality: Guelph, Ontario, N1G 2W1		

Type of Entity (check one)			
Retail Shopping Establishments		Hotels and Motels	
Retail Shopping Complexes		Hospitals	
Office Buildings		Educational Institutions	X
Restaurants		Large Manufacturing Establishments	

Note: O. Reg. 102/94 does not apply to multi-unit residential buildings.

II. DESCRIPTION OF THE ENTITY

Provide a brief overview of the entity(ties):

University of Guelph is an educational institution with approximately 19,909 FTE students which satisfies Part X of Ontario Regulation 102/94 & 103/94. O.Reg. 102/94 requires operators of educational institutions with more than 350 full- or part-time students enrolled during the calendar year to conduct an annual waste audit and implement a waste reduction work plan. O.Reg. 103/94 requires that source separation programs be implemented and maintained for fine papers, newsprint, aluminum cans, steel cans, glass beverage containers and corrugated cardboard. University of Guelph undertook this audit in order to assist them in reducing wastes generated on campus and/or disposed to landfill, while being in compliance with the required Regulations.

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III. PLANS TO REDUCE, REUSE AND RECYCLE WASTE

For each category of waste described in Part V of "Report of a Waste Audit" (on which this plan is based), explain what your plans are to Reduce, Reuse and Recycle the waste, including: 1) how the waste will be source separated at the establishment, and 2) the programs to reduce, reuse and recycle all source separated waste.

Waste Category (as stated in Part V of your "Report of a Waste Audit")	**Source Separation and 3Rs Program**
Mixed Containers (PET, HDPE, LDPE, PP, PS, Aluminum, Steel, Glass, Aseptic)	*"Mixed Recycling 3Rs Program"* *Reduce: Staff/Students will be encouraged to bring reusable containers food/beverage containers for lunch and breaks. University of Guelph will encourage suppliers to reduce the amount of polystyrene used to transport supplies. University of Guelph will encourage suppliers to reduce the amount of plastic film and wrapping materials used to transport supplies.* *Reuse: Staff/Students will be encouraged to reuse plastic crates and totes wherever possible.* *Recycle: Staff/Students will be provided with recycling bins in high waste generating areas and food service areas for mixed containers/plastics. Staff/Students will be encouraged to place mixed containers/plastics in appropriate recycling bins with appropriate signage affixed to the receptacle. Receptacles will be emptied on a regular basis before they become full into large roll away bins for collection as required.*
Mixed Papers (Fine Paper, newsprint, boxboard, magazines, molded papers, kraft, catalogues, flyers, etc)	*"Mixed Recycling 3Rs Program"* *Reduce: Staff/Students will be encouraged to print on both sides of each piece of paper as well as not print when it is unnecessary. Staff/Students will be encouraged to take reading materials home with them after they are finished with them. Staff and students will be sent, via email, news sources that are available online opposed to purchasing paper copies of news.* *Reuse: Discarded paper with print only on one side will be used for note pads/scrap paper. Staff/Students will be encouraged to leave newspapers they are finished reading in common areas for others to read.* *Recycle: Staff/Students will be provided with instructions via email. Receptacles will be provided in each office, classroom and high waste generating areas. Staff/Students will be encouraged to place newsprint, fine paper, boxboard, magazines, molded papers, etc in appropriate recycling receptacles. Staff/Students will empty receptacles into centralized containers. Custodial Staff/Students will empty centralized containers into bulk container in designated area for collection as required.*
Confidential Papers	*"Confidential Paper 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff/Students will be reminded of the existing program. Receptacles will be provided in each designated office area as required. Staff/Students will be encouraged to place all confidential paper in the designated consoles. Contactor will empty consoles appropriately for shredding and recycling as required.*
Cardboard	*"Cardboard 3Rs Program"* *Reduce: Suppliers will be encouraged to make use of reusable containers for the shipment of supplies to University of Guelph.* *Reuse: Cardboard boxes will be reused for shipments when appropriate.* *Recycle: Staff/Students will be reminded of the existing program. Cleaners will be trained on where to dispose of waste correctly.*
Paper Towels	*No 3Rs Program*
Organics	*"Organics 3Rs Program"* *Reduce: Students will be encouraged to bring uneaten food items home after lunch breaks or uneaten. Non-perishable food items can be donated to a local food drive.* *Reuse: Staff/Students provided with reusable china in some food service areas.* *Recycle: Staff/Students will be continually reminded of the existing program. Kitchen staff & cleaners trained on where to dispose of waste correctly. Additional bins added to the university food service areas to capture organic materials. Signs improved relating to organics program to assist staff/students in sorting organic stream correctly. Selling of disposable food containers*

	discouraged on campus, and if sold, containers should be compostable. Updated organics handouts for staff/student education/training program. Training of food service staff regarding improvements to organics program.
Coffee Cups, LDPE (#4) films, Plastic Strapping	*No 3Rs Programs*
Styrofoam	*No 3Rs Program*
Scrap Metals	*"Scrap Metals 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff will be reminded of the existing program.*
Wood Pallets/Scrap Woods	*"Wood Pallets 3Rs Program"* *Reduce: Staff to monitor use of Pallet to eliminate/reduce broken pallets.* *Reuse: Staff will be reminded of the existing program. Staff/Students will be encouraged to use scrap wood before new wood is purchased for use at the University.* *Recycle: Staff will be reminded of scrap wood recycling program.*
Electronic Wastes	*"Electronic Wastes 3Rs Program"* *Reduce: None.* *Reuse: Staff/students will be encouraged to reuse/donate electronic wastes if possible. .* *Recycle: Staff/Students will be reminded of the existing program, continue collecting for proper recycling of waste materials.*
Bulbs & Ballasts	*"Bulbs & Ballasts 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff/Students will be reminded of the existing program.*
Batteries	*"Batteries 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff/Students will be reminded of the existing program.*
Printer Toners	*No 3Rs Program*
Oil & Grease	*"Oil & Grease 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff/Students will be reminded of the existing program.*
Contaminated Wood/Paint	*"Contaminated Wood/Paint 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff will be reminded of the existing program.*
Textbooks	*"Textbooks 3Rs Program"* *Reduce: None.* *Reuse: Staff will be reminded of the existing program.* *Recycle: Staff will be reminded of the existing program.*
Beverage Bottles	*"Beverage Bottles 3Rs Program"* *Reduce: None.* *Reuse: Staff will be reminded of the existing program.* *Recycle: Staff will be reminded of the existing program.*
Manure	*"Manure 3Rs Program"* *Reduce: None.* *Reuse: None.* *Recycle: Staff will be reminded of the existing program.*

IV. RESPONSIBILITY FOR IMPLEMENTING THE WASTE REDUCTION WORK PLAN

Identify who is responsible for implementing the Waste Reduction Work Plan at your entity(ies). If more than one person is responsible for implementation, identify each person who is responsible and indicate the part of the Waste Reduction Work Plan that each person is responsible for implementing.

Name of Person	Responsibility	Telephone #
	All 3Rs programs or will direct to appropriate person.	

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V. TIMETABLE FOR IMPLEMENTING WASTE REDUCTION WORK PLAN

Provide a timetable indicating when each Source Separation and 3Rs program of the Waste Reduction Work Plan will be implemented.

Source Separation and 3Rs Program	Schedule for Completion
Cardboard	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Mixed Recycling	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Papers (Incl. Confidential Papers)	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Organics	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Scrap Metals	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Scrap Wood/ Wood Pallets	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Electronic Waste	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Bulbs & Ballasts	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Batteries	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Oil & Grease	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Contaminated Wood/Paint	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Textbooks	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Beverage Bottles	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*
Manure	*3Rs Program currently in place. Continual improvement to signage and additional promotional campaigns to be considered.*

VI. COMMUNICATION TO STAFF, CUSTOMERS, GUESTS AND VISITORS

Explain how the Waste Reduction Work Plan will be communicated to employees, customers, tenants, guests/visitors and students:
Explain how the Waste Reduction Work Plan will be communicated to employees, customers, tenants, guests/visitors and students. Sustainability committee will review and develop a work plan to be posted on campus for staff and students. Additional promotional campaigns will also be considered to target specific audiences for specific programs. Continue to improve educational materials (hand-outs, flyers) and signage across campus as required.

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VII. ESTIMATED WASTE PRODUCED BY MATERIAL TYPE AND THE PROJECTED AMOUNT

Material Categories *(as stated in Part III)*	**Estimated Annual Waste Produced *** *(tonnes)*	**Name of Proposed 3Rs Program** *(as stated in Part III)*	**Projections to Reduce, Reuse or Recycle Waste** *(tonnes)*			**Estimated Annual Amount to be Diverted **** (%)
			Reduce	**Reuse**	**Recycle**	
PET (#1) plastic food and beverage bottles	103.32	Mixed Recycling 3Rs Program			67.16	65%
HDPE (#2) Containers	21.80	Mixed Recycling 3Rs Program			14.17	65%
Polypropylene (#5) Containers	54.34	Mixed Recycling 3Rs Program			35.32	65%
Polystyrene (#6) Containers	9.71	Mixed Recycling 3Rs Program			6.31	65%
Glass food and beverage bottles/jars	43.71	Mixed Recycling 3Rs Program			28.41	65%
Aluminum food and beverage cans	12.62	Mixed Recycling 3Rs Program			8.20	65%
Steel food and beverage cans	9.52	Mixed Recycling 3Rs Program			6.19	65%
Gable Top Containers	20.53	Mixed Recycling 3Rs Program			13.34	65%
Aseptic Containers	9.32	Mixed Recycling 3Rs Program			6.06	65%
Fine paper	225.89	Mixed Recycling 3Rs Program; Paper 3Rs Program			192.01	85%
Newsprint	2.36	Mixed Recycling 3Rs Program			1.53	65%
Boxboard shoe boxes, cereal boxes, etc.	142.45	Mixed Recycling 3Rs Program			92.59	65%
Glossy magazines, catalogues, flyers	4.41	Mixed Recycling 3Rs Program			2.86	65%
Cardboard	91.13	Cardboard 3Rs Program			82.02	90%
Paper towels	113.59	No 3Rs Program				NA
Coffee cups	92.51	No 3Rs Program				NA

Organics / Food Waste	579.19	Organics 3Rs Program			289.59	50%
LDPE (#4) Plastic Film	0.42	No 3Rs Program				NA
Styrofoam (#6)	2.59	No 3Rs Program				NA
Plastic Strapping	0.00	No 3Rs Program				NA
Scrap Metals	54.68	Scrap Metals 3Rs Program			53.26	97%
Scrap Woods/Pallets	15.69	Scrap Woods/Pallets 3Rs Program			15.42	98%
Electronic Wastes	14.98	Electronic Wastes 3Rs Program			14.98	100%
Bulbs & Ballasts	0.31	Bulbs & Ballasts 3Rs Program			0.31	100%
Batteries	1.06	Batteries 3Rs Program			1.06	100%
Printer Toners	0.00	No 3Rs Program				NA
Oil & Grease	18.14	Oil & Grease 3Rs Program			18.14	100%
Contaminated Wood/Paint	28.14	Contaminated Wood/Paint 3Rs Program			28.14	100%
Textbooks	8.35	Textbooks 3Rs Program		8.35		100%
Beverage Bottles	3.85	Beverage Bottles 3Rs Program		3.85		100%
Manure	1812.90	Manure 3Rs Program			1812.90	100%
Other / Non-Recyclable	1028.68	No 3Rs Program				NA

* *Estimated Waste Produced = Waste Diverted (3Rs) + Waste Disposed*

** *Estimated Waste Diversion Rate = Amount of Waste Diverted (3Rs) ÷ Estimated Waste Produced x 100%*

I hereby certify that the information provided in this Waste Reduction Work Plan is complete and correct.		
Signature of authorized official:	**Title:**	**Date:**