



## WASTE AUDIT REPORT

SHERIDAN COLLEGE  
HMC CAMPUS

2017 SOLID NON-HAZARDOUS WASTE  
AUDIT O.REG. 102/94

PREPARED BY

**SPINNAKER RECYCLING CORP.**

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## EXECUTIVE SUMMARY

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This waste audit was conducted in April 2017 at the Hazel McCallion (HMC) Campus of Sheridan College. The HMC Campus is the smallest Sheridan College campus in terms of student population and in terms of physical size. The campus has two buildings each comprised of four floors totaling more than 300,000 square feet. One of the two buildings was open in January. There are more than 7,000 students attending this campus with more than 300 employees.

The Skills Training Centre in Oakville is set to close September 2017 at which time there will be three campuses at Sheridan:

1. Davis
2. Trafalgar
3. Hazel McCallion (HMC)

All three campuses of Sheridan College have implemented a number of diversion programs in an effort of getting to Zero Waste by 2020. Each of the campuses has a variety of single-stream recycling/reuse programs (Ex. cardboard, E-waste) as well as the three-stream Zero Waste (ZW) bins, implemented in 2014, which are the identically marked and colour-coded collection stations for organics, mixed recycling and waste to landfill that are found throughout the campuses.

In addition to single stream recycling/reuse collection programs and the ZW bin program, Sheridan College has implemented several reduction programs including:

1. Installed water bottle refilling stations to reduce PET water bottle generation,
2. Implemented a program to eliminate paper towels from all washrooms by switching to air hand dryers instead of repairing broken paper towel dispensers (most washrooms have already eliminated paper towel usage), and
3. Implemented a paper reduction program at all campus printers.

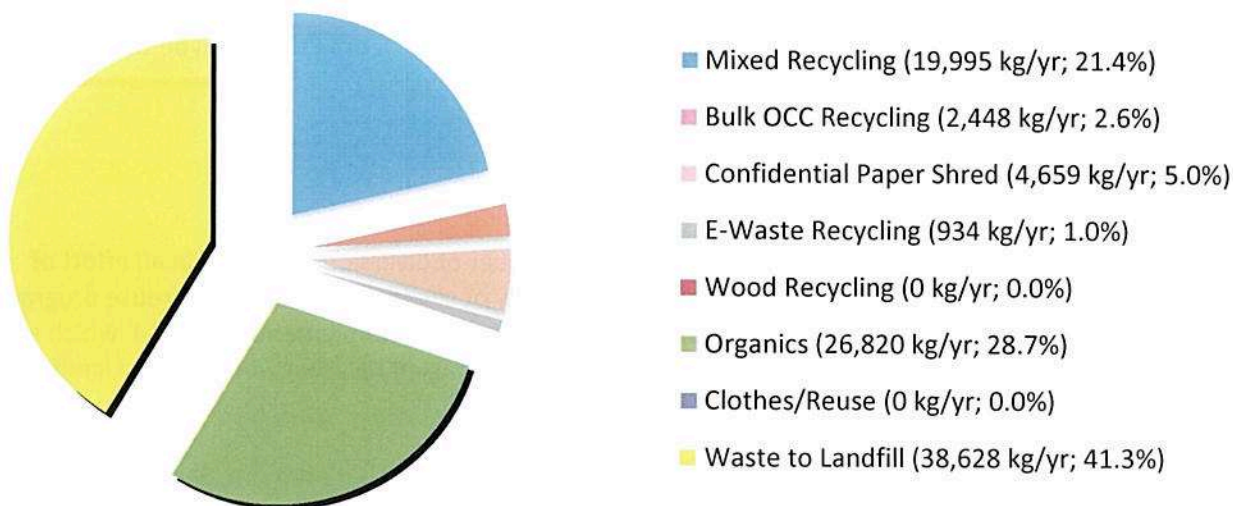
The waste reduction realized by these programs was not quantified for inclusion in this report.

The ZW bin program was rolled out over the course of 2014 at the campuses so this program has matured: students and staff have are familiar with and knowledgeable of the ZW bin collection program. Sheridan continues to encourage participation through engagement and information programs. The weight based information for the 2017 waste audit was from 2016 data provided by the service providers. Though weight based information was reported on the hygiene waste collection program for 2016, this waste stream was not included in the report as the reported weights were strikingly high, were gross estimates and have not yet been verified. Hygiene waste from washrooms is collected for diversion from landfill and to energy-from-waste. Sheridan will be undertaking a verification audit to determine weight based information of this stream for inclusion in the 2018 waste audit report. Note that this material diversion program, as energy-from-waste, will be considered disposal for the purposes of calculating waste diversion at the Campus.

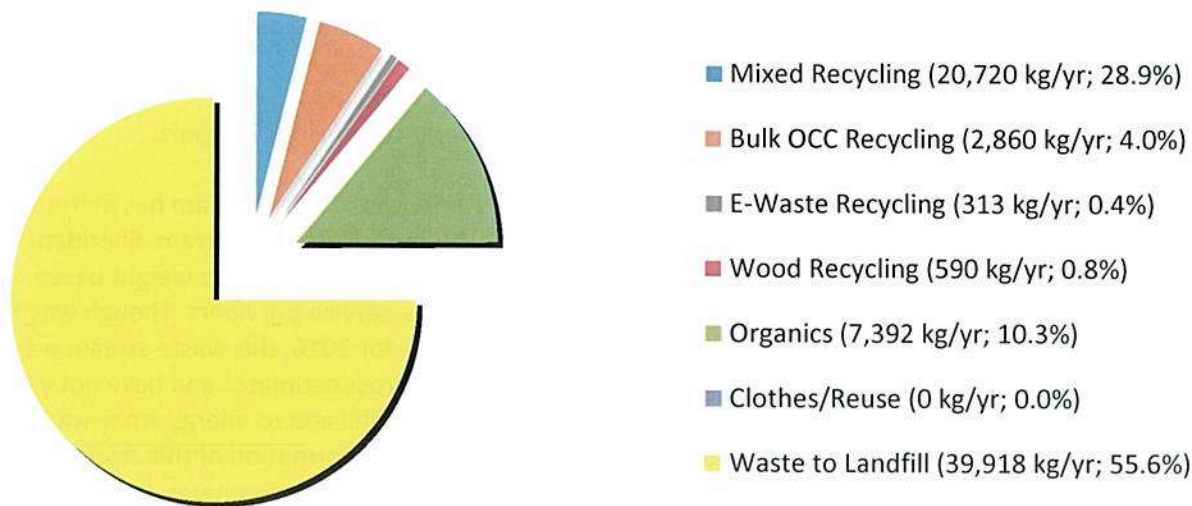
## ANNUAL DIVERSION RATES 2017

The 2017 and 2015 waste diversion rate at HMC campus is presented below. 2017 diversion rates were calculated using calendar year 2016 weight-based information provided by Sheridan management and their waste service providers. The 2016 chart is not reproduced, as it was not readily available for inclusion in this report.

### HMC Campus 2017 Waste Diversion Rate: 58.7%



### HMC Campus 2015 Waste Diversion Rate: 44.4%



HMC Campus waste diversion rate is projected to be 58.7%, a dramatic improvement since 2015 when it was only 44.40%. The increased diversion can be attributed to a significant improvement in organic waste diversion

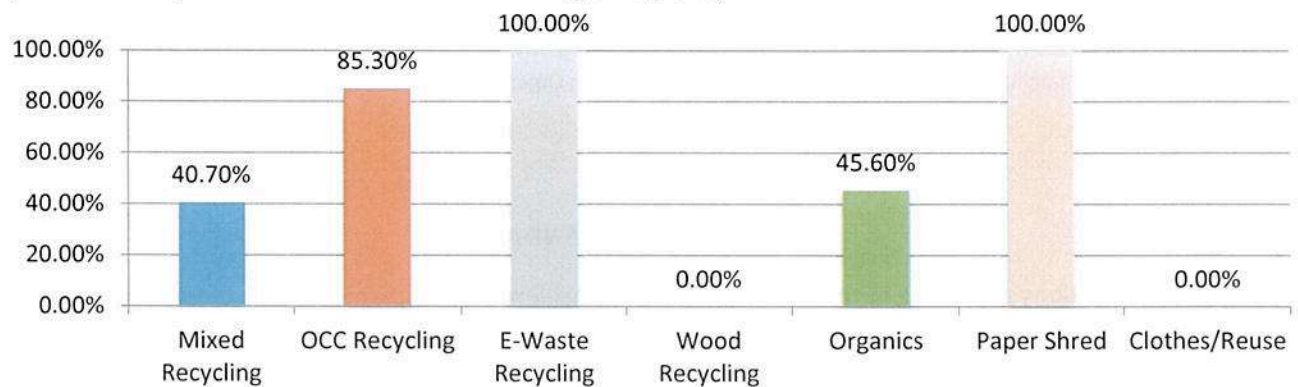


as well as, to a lesser extent, improvements in E-waste diversion and the new reporting of confidential paper shred recycling.

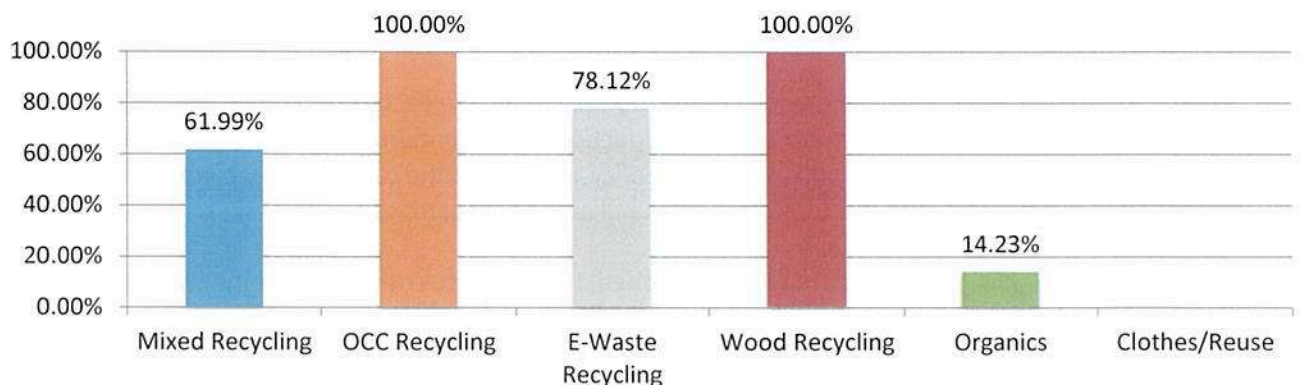
### OVERALL CAPTURE RATES BY DIVERSION PROGRAM

Capture rates for each diversion program were calculated at the HMC campus using results of the 2017 waste audit of the ZW bins, combined with 2016 weight based information on collection programs. The capture rates were consistently high for the bulk single-stream recycling programs where they exist. The capture rate for the ZW organics was considerably improved since 2015, however the ZW mixed recycling capture rate has declined.

**Capture Rates by Waste Diversion Collection Programs (2017)**

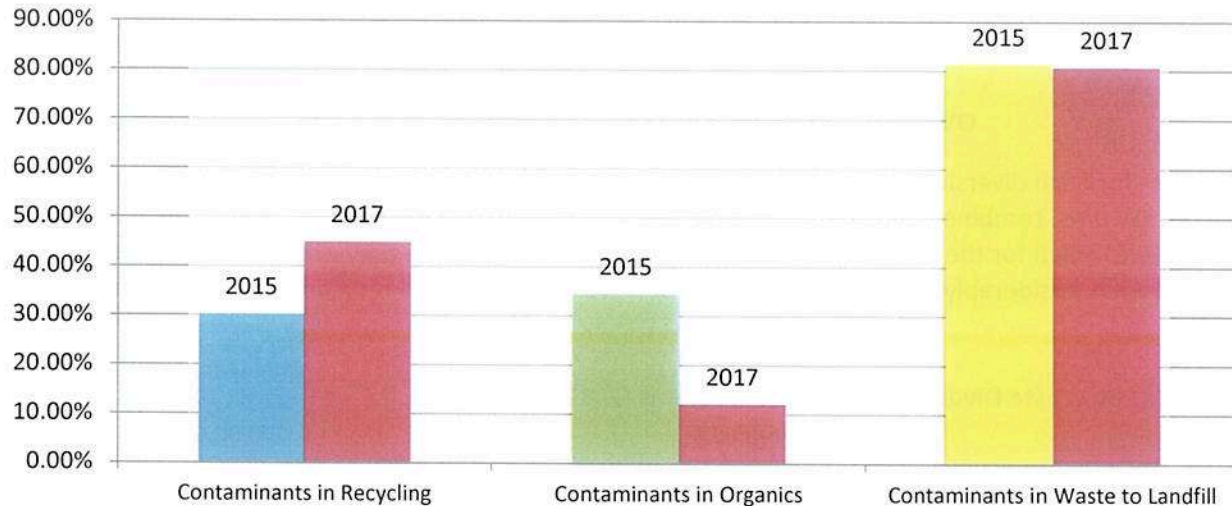


**Capture Rates by Waste Diversion Collection Programs (2015)**



### COLLECTION PROGRAM CONTAMINATION RATES 2017

2017 contamination rates for each of the three ZW bin streams were calculated for the HMC Campus. The waste to landfill is more contaminated than the contamination in the organics and mixed recycling. This supports the idea that the campus population is not fully complying with the ZW bin sorting and is defaulting in favour of using the ZW waste to landfill bins.



### GENERAL RECOMMENDATIONS

The recommendations appearing in this report are to be considered for implementation as Sheridan College feels appropriate and cost effective.

Ensure the campuses waste reduction workplans use the hierarchical components of the 3Rs. Reduction or elimination of waste should be given top priority, then reuse and lastly recycling. Similarly, choose suppliers who offer products with post-consumer recycled content. Purchasing supplies and materials with recycled content encourages and sustains growth in existing and developing recycling end-markets. The 3Rs Regulations require not only that these practices are conducted but also recorded and documented.

Review purchasing, packaging and environmental policies to ensure each reflects and emphasizes consistent hierarchical Reduce, Reuse, Recycle strategies. Reduction or elimination of waste should be given top priority, then reuse and lastly recycling. A consistent 3Rs policy will benefit the campuses by communicating its environmental stewardship to its employees, its suppliers and its patrons.

Given that the recycling programs are well established, the campuses need to examine ways of reducing waste. Many facilities fail to achieve waste reduction targets because they use the 3Rs in the reverse order. Unfortunately, many companies use this approach based on the misinformed belief that recycling is the easiest, most cost-effective and the least time consuming form of waste diversion. Consider some of the following costs associated with recycling that would not be incurred if the materials were not generated in the first place:

1. Recycling requires additional material handling
2. Cost of containers / floor space / storage areas
3. Education and training of employees
4. Promotion of the programs to maintain cooperation
5. Removal service costs



6. Contamination issues/disposal fees
7. Sourcing available end-markets for materials

In the auditor's experience, companies that make substantial gains in waste reduction are those that periodically improve their recycling programs while continuously examining ways to eliminate materials that contribute to their daily and annual waste output.

Employees should evaluate, improve and expand waste reduction efforts in their own areas. Active employee involvement will generate cooperation and enthusiasm.

Ontario Regulation 102/94 requires that the audit findings be posted in accessible areas to inform employees of the sources of waste generation and the company's commitment to waste reduction. Further, posting waste audit findings and educating employees in waste diversion programs and including them in the successes, will generate continued compliance with and commitment to the waste diversion programs.

### **SPECIFIC RECOMMENDATIONS –THE WASTE REDUCTION WORKPLANS**

#### **Campus Wide Focus:**

Sheridan HMC campus has an excellent combination of diversion programs that address the divertible materials generated at the campus. Consequently, future waste diversion improvements will likely come from enhancing compliance with the three stream ZW bins across campus. Sheridan should undertake an assessment to identify barriers to sorting and develop area-specific action plans to increase participation.

#### **Specific Recommendations:**

1. **Enhancing Mixed Recycling Capture Rate Throughout the Campus:** Encouraging the proper disposal in mixed recycling of: mixed fine paper, PET bottles, boxboard/cores, polystyrene, aluminum food/beverage containers, polypropylene, kraft paper, cardboard and HDPE through education/signage. Expected improvement in capture rate of 20%. Anticipated reduction in waste to landfill of 2,136 kg per year (20% of misdirected mixed recycling across the campus).
2. **Capturing Compostible (Anaerobically Digested) Coffee Cups in Organics:** 8,929 kg per year of compostible coffee cups are being disposed in mixed recycling, organics and waste to landfill at the HMC Campus. 2,221 kg are being disposed improperly in mixed recycling and 3,111 kg are being improperly disposed in mixed waste to landfill. Launch a campaign to capture compostible coffee cups in organics. Expected improvement in capture rate of 50%. Anticipated reduction in waste to landfill of 2,666 kg per year.
3. **Emptying Beverage Containers:** Continue to encourage the emptying of beverage containers prior to placement in mixed recycling through a combination of education/signage and placement of emptying stations where practicable. Consider launching a campaign to address this growing issue. Anticipated reduction in disposal of liquids in any stream: 40%. Anticipated reduction in waste to landfill of 1,040 kg per year as well as a significant reduction in contamination in the mixed recycling and organic streams.
4. **Improve Sorting of ZW Materials with Particular Focus in i) A Wing Cafeteria Front of House, ii) A Wing Ground Floor Hallway and iii) B Wing Ground Floor Atrium:** In these three areas the

contaminants in the waste stream are over 90%. Approximately 70% of the contaminants by weight are organic materials. Encouraging the emptying of food waste and napkins in the organics bin, then the disposal of the food packaging in the appropriate ZW recycling or ZW waste to landfill bin through education is required. A behavioural study may be instructional in determining structural and social/cultural barriers to participation and developing concrete area-specific action plans for implementation. Continue to engage students: identify and promote positive and motivating instructional messaging regarding environmental and cost savings associated with "good sorting behaviour". Based on a 24 hour sample these areas generate 7,572 kg of waste to landfill per year. Expected improvement of 10% reduction in waste to landfill in these three areas. Anticipated reduction in waste to landfill of 757 kg per year (10% of waste to landfill from these three areas).

5. **Capturing & Reporting Material Weights for All Diversion Programs at the Campus:** Sheridan has made significant progress in reporting material diversion streams since 2015 however there may be other diversion programs in place at the HMC Campus but the weight-based data is not currently captured accurately for reporting purposes. For example, HMC does capture feminine hygiene waste for energy-from-waste (not considered diversion, but represents diversion from landfill) though the weight-based reporting accuracy is under question and review. Sheridan should continue to conduct an inventory of all diversion programs, with particular focus on reduction and reuse programs, and should ensure there are procedures in place to collect, monitor and report on these programs.

**Anticipated Result:**

With the implementation of the above noted waste reduction plans, it is estimated that the waste diversion rate at the HMC Campus will increase from 58.7% to 65.7% and the HMC Campus will divert an additional 6,599 kg per year of waste from landfill in 2018.



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## 1.0 INTRODUCTION

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### 1.1 PURPOSE

The solid waste audit performed by *Spinnaker Recycling Corp.* ("Spinnaker") at the Hazel McCallion (HMC) campus of Sheridan College was designed to:

CALCULATE CURRENT DIVERSION RATES FOR RECYCLED, ORGANIC AND REUSED MATERIALS TO DETERMINE THE EFFECTIVENESS OF DIVERSION PROGRAMS AT EACH OF THE CAMPUSES

IDENTIFY OPPORTUNITIES FOR IMPROVEMENT AND EXPANSION TO DIVERSION PROGRAMS

DEVELOP A WASTE REDUCTION WORKPLAN THAT IDENTIFIES POLICIES, PRACTICES, TARGETS AND GOALS FOR NEW AND DEVELOPING WASTE REDUCTION PROGRAMS

COMPLETE AND DOCUMENT THE AUDIT AS PER ONTARIO REGULATION 102/94 UNDER THE ENVIRONMENTAL PROTECTION ACT

This waste audit has been conducted and documented to be compliant with Ontario Regulation 102/94.

At the time of the 2017 audit, the HMC had implemented the following collection programs:

1. Mixed Recycling (includes glass, metal, paper, plastic)
2. Organics
3. Waste to Landfill
4. Bulk Old Corrugated Cardboard (OCC) Recycling
5. Paper Shred (Confidential) Recycling
6. E-Waste Recycling

Sheridan College recycling programs meet and exceed Ontario Regulation 102/94 requirements for designated facilities as the recycling programs include the capture of the following recyclable materials:

- Aluminum food or beverage cans
- Cardboard
- Fine Paper
- Glass Bottles, Jars & Food/Beverage
- Newsprint
- Steel Food & Beverage Cans
- Polyethylene Terephthalate (PET)

### 1.2 METHODOLOGY

The waste audit results presented in this report were obtained from observations and information collected during an on-site waste audit conducted April 2017 at the HMC Campus.

Two data sets were employed to generate the annual waste generation rates of specific waste materials at the HMC Campus. First, the 2016 annual weight information for the individual collection streams was obtained from the service providers and the second data set was generated during the sorting and weighing of a 24 hour accumulation of material in ZW bins during the April 2017 on-site waste audit at the HMC Campus.

The 2014 single-material stream weights provided by the service provider were not audited and were assumed to be 100% single-stream without any contamination by other materials. Sheridan has implemented several of these single-material stream diversion programs including:

1. Bulk Old Corrugated Cardboard (OCC) Recycling
2. Confidential Paper Shred Recycling
3. E-Waste Recycling

The second source of data was generated through the one day on-site audit of the ZW bin streams at HMC. All Sheridan College campuses have implemented a Zero Waste (ZW) program with a longterm goal of eliminating all landfill waste by 2020. The ZW program includes three regular collection streams in ZW bins:

1. Organics
2. Mixed Recycling (glass, metal, paper, plastic)
3. Waste to Landfill

These material streams are “mixed” composition so they were sorted and weighed to determine the relative proportions by weight of specific wastes in the individual ZW bin program streams. These relative proportions were applied to the 2016 annual weight information by ZW stream provided by the service providers. In this way, it is possible to determine contamination levels and identify specific materials that are being improperly disposed in these “mixed” waste streams.



One project manager and three waste analysts sorted, quantified and recorded the waste generated over a 24-hour sample accumulation period. In order to identify opportunities to improve waste diversion at specific functional areas within the campus, the HMC campus was divided into 7 areas for the purpose of the waste audit covering the entire campus. The areas audited are presented below:

Wing	Area
A Wing	Ground Floor Hallway
	Cafeteria - Front of House
	Cafeteria - Back of House
	Second Floor Office Area
B Wing	Ground Floor Atrium
	3rd-5th Floor Hallways
	Office Areas

ZW bin material streams were collected by the cleaning personnel and labeled as to the area from where it was generated. The ZW organics, mixed recycling and waste to landfill bags were collected on-site and delivered to



a designated area for sorting and weighing. All bags were sorted by generation area and ZW bin type (organics, recycling, waste to landfill), opened, and further sorted into labeled collection bins by specific waste category (see the Appendix for the specific waste category list employed). A Digital Receiving Scale was used for all measurements to the nearest one thousandth decimal. At the conclusion of the waste audit all organic and recyclable material removed from the waste were discarded in appropriate containers for landfill diversion.

At the HMC Campus, Spinnaker sorted, weighed and evaluated over 75 kilograms of organics, 76 kilograms of mixed recycling, and 59 kilograms of waste to landfill.

Specific waste categories were established before the audit based on *Ontario Ministry of Environment & Climate Change* guidelines and industry best practices. Additional categories were added to the list based on the waste composition observed during the audit. Though this facility is not designated by regulation, this audit surpasses the requirements outlined in the *Ontario Ministry of Environment & Climate Change's Guide to Waste Audits and Waste Reduction Work Plans* and includes completed Ministry required audit report forms in the Appendix.

The annual diversion rate was calculated by adding total recycled with total reused and dividing by the amount of total waste generated.  $Annual\ Diversion\ Rate = (Total\ Recycled + Total\ Reused) / (Total\ Recycled + Total\ Reused + Total\ Landfilled)$ .

### 1.3 OBSERVATIONS

Hazel McCallion (HMC) Campus is a college campus managed by Sheridan College in Mississauga, Ontario. The HMC Campus is the smallest Sheridan College campus in terms of student population and in terms of physical size. The campus has two buildings each comprised of four floors totaling more than 300,000 square feet. One of the two buildings was open in January. There are more than 7,000 students attending this campus with more than 300 employees.

HMC Campus of Sheridan College is committed to its Zero Waste Program: guiding the institution to becoming a zero waste campus by 2020. As part of the Zero Waste (ZW) program, Zero Waste (ZW) stations have been introduced to increase waste diversion. These new ZW stations have replaced the old waste bins in the public and office areas in all of the four campuses. Three waste streams are provided: Organics, Mixed Recycling, and Waste to Landfill. All ZW stations have the same order, colour coding, labeling and signage.

ZW bins were rolled out in August 2014 at the HMC campus, so participation and compliance with the ZW bin program is now mature: staff and students are now all familiar with the three stream disposal system.

Cleaning of this facility is completed by a team of cleaners who use a cart system for the collection of the ZW bin material from the office staff and students. The different ZW streams are collected daily on an as needs basis. The campus operates 7 days a week with offices open generally 5 days a week during normal business hours while other buildings such as the library are open on weekends with shortened hours. At the time of the audit regular classes were ongoing as the audit was conducted before the conclusion of the spring session. There





were no unusual activities taking place in the building that may have altered the waste audit results.

Some additional comments made by the auditors at the waste audit include:

1. Signage visibility: larger capacity containers where the bags interfere with signage visibility



2. Signage visibility: battery and teracycle programs not visually in play



3. Poor sorting behaviour: bags in bags



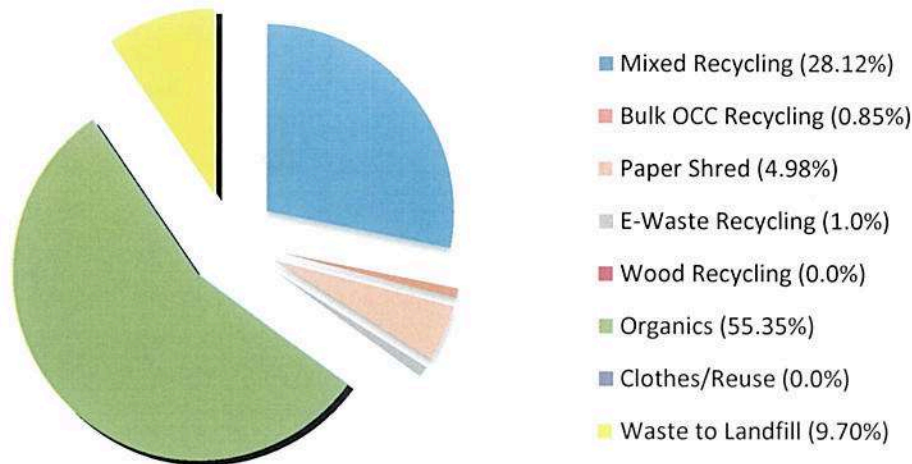
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## 2.0 RESULTS

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Analysis of all the specific waste weights generated and their acceptability in the various diversion programs at the HMC Campus in 2017 revealed that the campus could potentially achieve a waste diversion rate of 90.3% through the existing ZW and other diversion program. Figure 1 below shows the weight of specific wastes being disposed at the campus in 2017 grouped by existing diversion, reuse and waste to landfill programs. This figure represents the HMC campus potential for waste diversion through the existing programs and assumes 100% capture rates for all existing diversion programs.

**Figure 1: HMC Campus Material Generation (2017)**



Using 2016 weight data from service providers, the HMC waste diversion rate for 2017 is projected to be 58.70%. Figure 2 below shows the 2017 weight of material being collected through the existing waste collection programs. This represents actual waste diversion in 2017 at the Campus.

**Figure 2: HMC Campus Material Diversion (2017)**

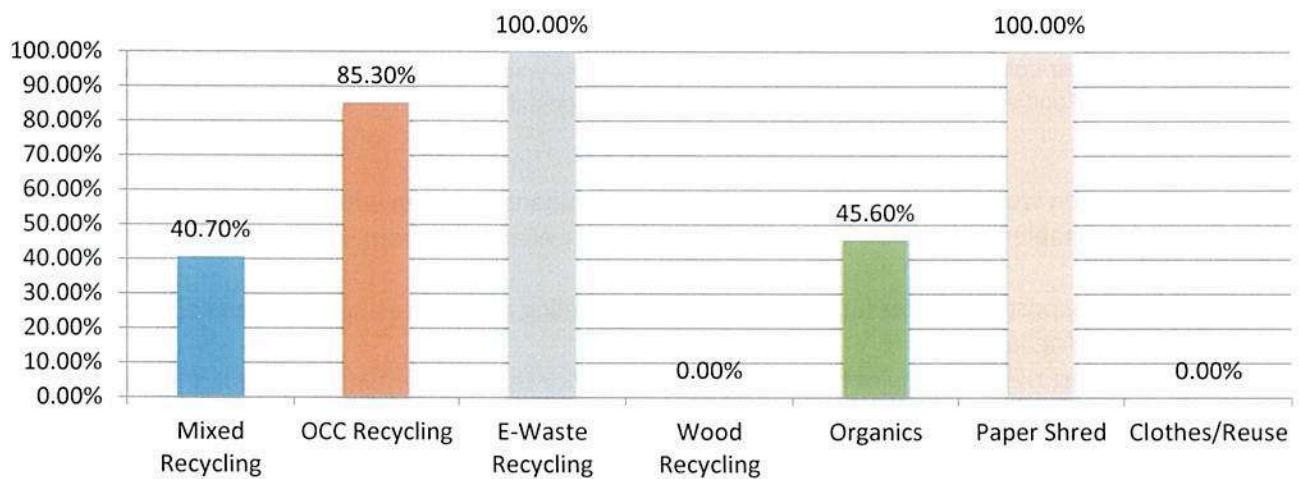




Figure 3 below shows the capture rates by the individual collection programs. HMC Campus has four diversion programs. Capture rates were calculated as follows: total weight of all divertible material correctly captured by the diversion stream exclusive of contaminants divided by the total of all divertible material generated at the campus in any stream.

The E-Waste and paper shred collection programs have 100% capture rates; while the cardboard capture rate is also very high at 85.30%. The organics capture rate is very good at 45.60%, however the mixed recycling capture rate has decreased since 2015. There is no clothing reuse program or wood recycling at this campus and because there was no clothing or wood in the waste audit, it would appear there is no need to implement either of these programs at this time.

**Figure 3: HMC Capture Rates by Collection Programs**

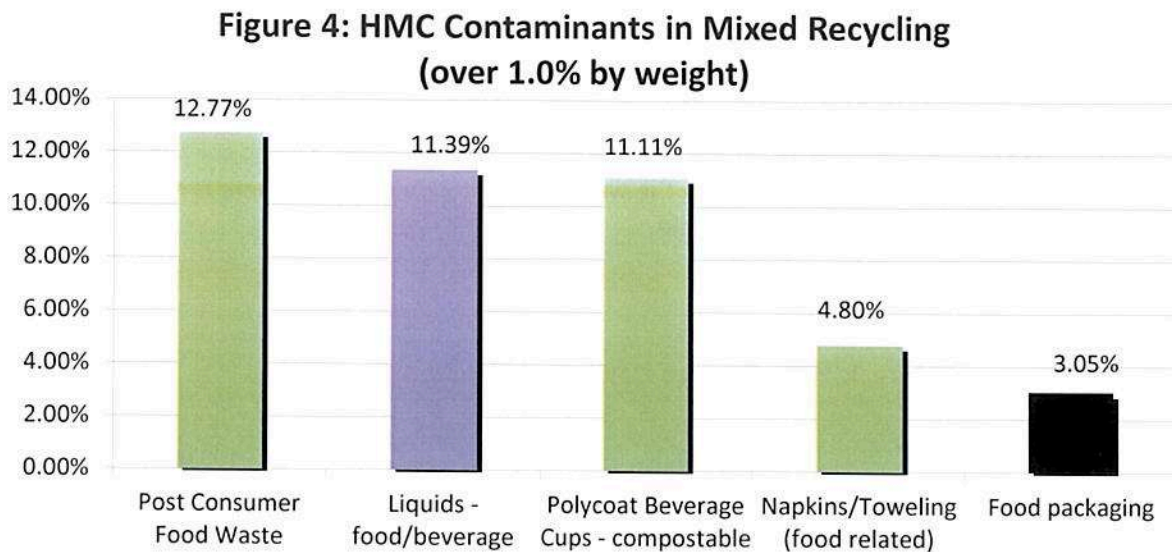


Upon analysis of the capture rates for the diversion programs it is apparent that the ZW mixed recycling bins are not being well-utilized and increasing campus wide use of both the ZW mixed recycling and the ZW organics bins will be key to improving diversion at this campus.

## **2.1 MIXED RECYCLING COMPOSITION**

The ZW mixed recycling contamination rate was high at 44.9% by weight and the contamination is largely due to organic material. This suggests that users are disposing of food related recyclable materials that have not been fully consumed and/or properly sorted. The most commonly disposed contaminants (i.e. non-recyclable

specific wastes) disposed in the ZW mixed recycling are presented in the Figure below. Specific wastes are colour coded: green are suitable for ZW organic bin, black are suitable for ZW waste to landfill bin and purple are reducible.



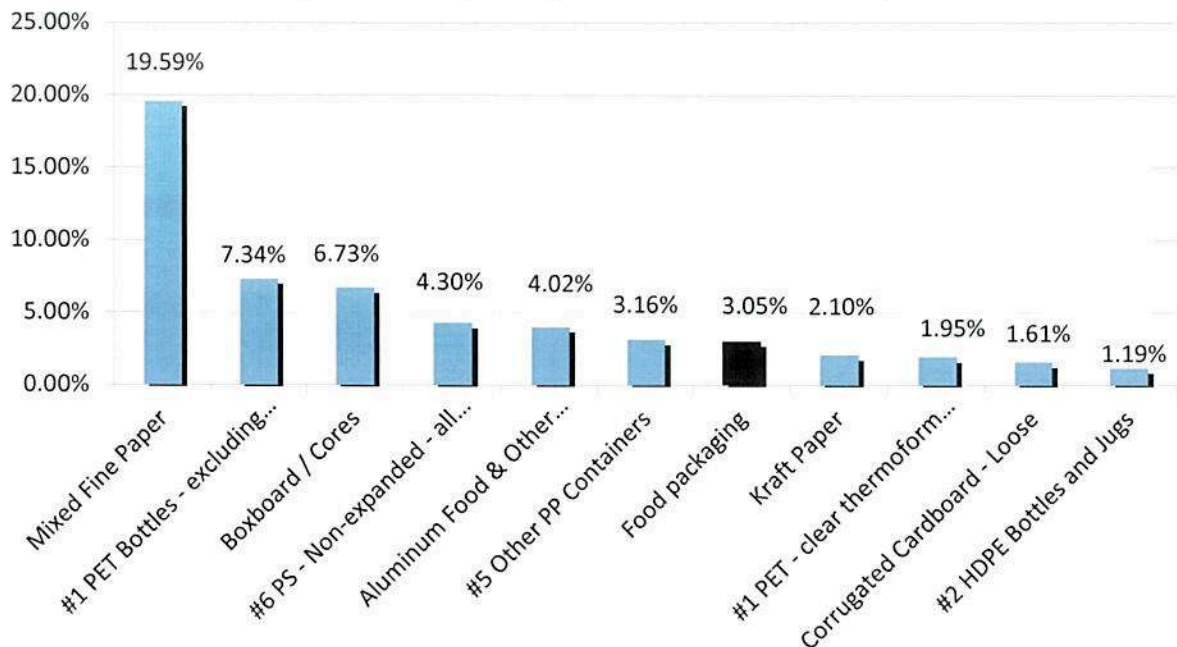
The waste reduction workplan should focus on those contaminants that can with minimal effort and cost be managed to be suitable for inclusion in ZW mixed recycling or eliminated from improper disposal. These include:

1. Minimizing post-consumer food waste, napkins/toweling and coffee cups in mixed recycling through education/signage.
2. Encouraging the emptying of beverage containers prior to placement in mixed recycling through a combination of education/signage and placement of emptying stations where practicable.

## 2.2 ORGANIC COMPOSITION

The contamination rate in the ZW organic bins was relatively low at 12.1% by weight. The most commonly disposed contaminants (i.e. non-organic specific wastes) disposed in the ZW organics bins are presented in the Figure below. Specific wastes are colour coded: blue are suitable for ZW mixed recycling bin and black are suitable for ZW waste to landfill bin.

**Figure 5: HMC Contaminants in Organics  
(over 1% by weight in material stream)**



The waste reduction workplan should focus on those contaminants that can with minimal effort and cost be managed to be suitable for inclusion in ZW organics or eliminated from improper disposal. These include:

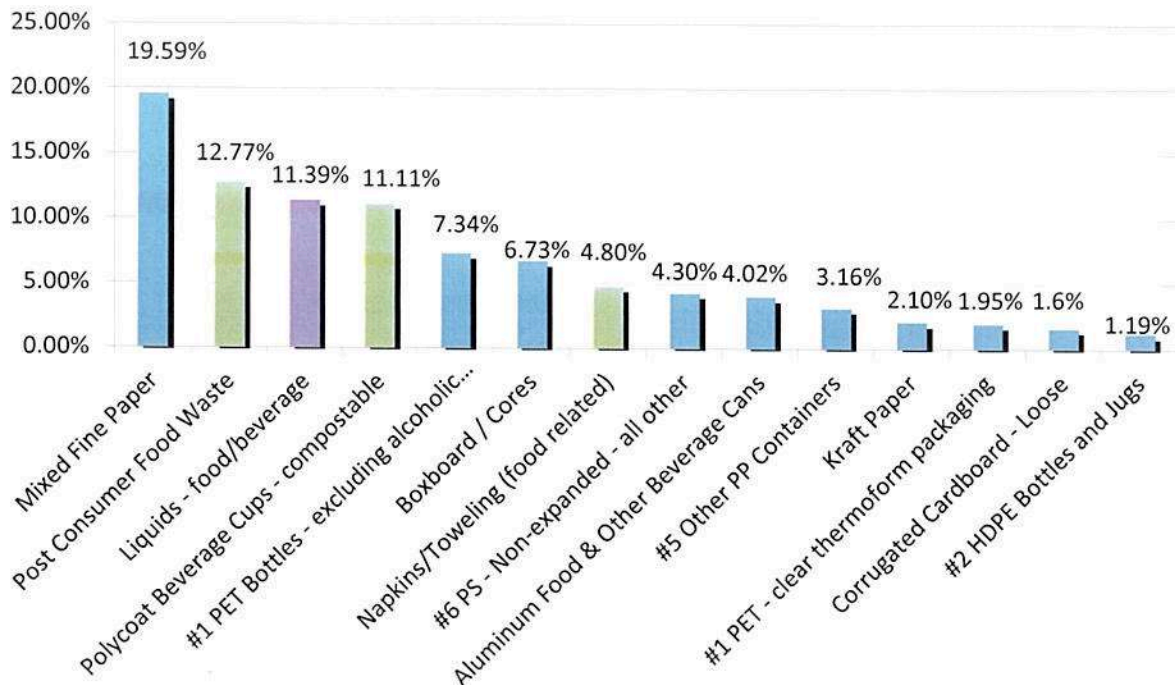
1. Encouraging the proper disposal in mixed recycling of mixed fine paper, #1 PET, boxboard/cores, #2, #5, #6 plastics, and cardboard through education/signage.

### 2.3 WASTE TO LANDFILL COMPOSITION

The ZW waste to landfill contamination rate was very high at 80.8% indicating that users are defaulting to disposing of materials in this stream. The most commonly disposed contaminants (i.e. organic or mixed recyclable wastes) disposed in the ZW waste to landfill bins are presented in the Figure below. Specific wastes are colour coded: blue are suitable for ZW mixed recycling bin, green are suitable for ZW organics bin and purple are reducible.



**Figure 6: HMC Contaminants in Waste to Landfill  
(over 1.0% by weight in material stream)**



Analysis of the ZW bin streams at this campus has indicated that the most significant impediment to improved diversion is the use of the ZW waste to landfill bin, particularly for the disposal of mixed recycling. It is therefore highly recommended that the waste reduction workplan focus on those contaminants that can with minimal effort and cost be managed to be suitable for inclusion in ZW mixed recycling or eliminated from improper disposal. These include:

1. Encouraging the proper disposal in mixed recycling of mixed fine paper, PET bottles, boxboard/cores, polystyrene, aluminum food/beverage containers, polypropylene, kraft paper, cardboard and HDPE through education/signage.
2. Encouraging the emptying of food waste and napkins in the organics bin, then the disposal of the food packaging in the appropriate ZW recycling or ZW organics bin through education/signage.
3. Encouraging the emptying of beverage containers prior to placement in the ZW mixed recycling container. There is an estimated 5,696kg per year of liquids being disposed in ZW bins, an increase from 2015 when there was 1,688kg per year of liquids disposed.
4. Educating students, staff and visitors in disposing of compostible coffee cups in organics container.

## 2.4 ANALYSIS OF ZW BINS BY AREA

For the purpose of identifying opportunities to improve waste diversion, seven areas of distinct waste generation were identified and audited. This sampling did not include every area of the campus. To calculate

material generation by sample area, each 24 hour sample weight was multiplied by a 235 day operating year. This operating year was estimated based on the following assumptions:

1. The sample was taken on a fall/winter weekday.
2. There are 30 weeks in fall/winter session, 20 weeks in the summer session and 2 weeks of holiday.
3. Summer sessions will generate 50% the material of fall/winter session days.
4. Weekends will generate 40% of material of weekdays.

Each area generated a different amount of ZW mixed recycling, organics and mixed waste to landfill (Table 1). In order to maximize waste reduction, opportunities should focus on the areas generating the most ZW materials and those with the lowest diversion rate. At the HMC Campus, those would be in order:

1. B Wing - 3rd-5th Floor Hallways
2. A Wing - Cafeteria - Front of House
3. A Wing - Ground Floor Hallway

**Table 1: Campus ZW Material Generation & Diversion Rate by Area**

Area	ZW Material Generated (kg/a)	ZW Mixed Recycling (kg/a)	ZW Organics (kg/a)	ZW Waste to Landfill (kg/a)	ZW Diversion Rate
B Wing 3,4,5/FI hallways	17,999	7,629	6,045	4,325	76.0%
A Wing Cafeteria - front of house	8,372	2,123	2,512	3,736	55.4%
A Wing G/F Hallway	7,642	2,420	2,753	2,469	67.7%
B Wing G/FI Atrium	6,153	3,006	1,781	1,366	77.8%
A Wing 2/FI office area	4,462	1,977	1,104	1,382	69.0%
A Wing Cafeteria - back of house	4,453	470	3,403	580	87.0%
B Wing - office areas	566	256	241	70	87.7%

The contamination rates for each of the 7 areas sampled during the audit were analyzed to identify the best and worst performers. This analysis was done for all three ZW bins streams.

Table 2 below presents the percentage by weight of contaminants in ZW mixed recycling by area sorted to present the worst to the best performers. In 2017, the campus wide contamination rate of ZW mixed recycling is 44.9%, an increase from 2015 when it was only 30.20%.

**Table 2: Percentage of Contaminants in ZW Mixed Recycling By Area: the Worst to the Best Performers**

Area	Contaminants in Recycling
A Wing - Cafeteria - Back of House	94.6%
B Wing - Ground Floor Atrium	66.4%

A Wing - Ground Floor Hallway	50.5%
A Wing - Cafeteria - Front of House	41.7%
B Wing - 3rd-5th Floor Hallways	37.8%
B Wing - Office Areas	34.3%

Table 3 below presents the percentage by weight of contaminants in ZW organics by area sorted to present the worst to the best performers. In 2017 the campus wide contamination rate of ZW organics at the HMC campus is 12.1%, an improvement from 2015 when it was 34.52%.

**Table 3: Percentage of Contaminants in ZW Organics By Area: the Worst to the Best Performers**

Area	Contaminants in Organics
A Wing - Cafeteria - Front of House	19.5%
B Wing - 3rd-5th Floor Hallways	15.0%
B Wing - Ground Floor Atrium	14.9%
A Wing - Ground Floor Hallway	13.4%
A Wing - Second Floor Office Area	10.9%
B Wing - Office Areas	1.8%
A Wing - Cafeteria - Back of House	0.0%

Table 4 below presents the percentage by weight of contaminants in ZW waste to landfill by area sorted to present the worst to the best performers. The campus contamination rate of ZW waste to landfill at the HMC campus is 80.8%, relatively unchanged from 2015 when it was 81.42%. The campus wide contamination rate is the sum of the weights of the contaminants in the ZW waste to landfill bin in all seven areas audited divided by the total amount of ZW waste to landfill material sorted.

**Table 4: Percentage of Contaminants in ZW Waste to Landfill By Area: the Worst to the Best Performers**

Area	Contaminants in Waste to Landfill
A Wing - Cafeteria - Front of House	95.1%
B Wing - 3rd-5th Floor Hallways	91.9%
B Wing - Ground Floor Atrium	91.2%
A Wing - Ground Floor Hallway	76.3%
A Wing - Second Floor Office Area	68.6%
B Wing - Office Areas	56.6%
A Wing - Cafeteria - Back of House	53.5%



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### 3.0 RECOMMENDATIONS

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#### Campus Wide Focus:

Sheridan HMC campus has an excellent combination of diversion programs that address the divertible materials generated at the campus. Consequently, future waste diversion improvements will likely come from enhancing compliance with the three stream ZW bins across campus. Sheridan should undertake an assessment to identify barriers to sorting and develop area-specific action plans to increase participation.

#### Specific Recommendations:

1. **Enhancing Mixed Recycling Capture Rate Throughout the Campus:** Encouraging the proper disposal in mixed recycling of: mixed fine paper, PET bottles, boxboard/cores, polystyrene, aluminum food/beverage containers, polypropylene, kraft paper, cardboard and HDPE through education/signage. Expected improvement in capture rate of 20%. Anticipated reduction in waste to landfill of 2,136 kg per year (20% of misdirected mixed recycling across the campus).
2. **Capturing Compostible (Anaerobically Digested) Coffee Cups in Organics:** 8,929 kg per year of compostible coffee cups are being disposed in mixed recycling, organics and waste to landfill at the HMC Campus. 2,221 kg are being disposed improperly in mixed recycling and 3,111 kg are being improperly disposed in mixed waste to landfill. Launch a campaign to capture compostible coffee cups in organics. Expected improvement in capture rate of 50%. Anticipated reduction in waste to landfill of 2,666 kg per year.
3. **Emptying Beverage Containers:** Continue to encourage the emptying of beverage containers prior to placement in mixed recycling through a combination of education/signage and placement of emptying stations where practicable. Consider launching a campaign to address this growing issue. Anticipated reduction in disposal of liquids in any stream: 40%. Anticipated reduction in waste to landfill of 1,040 kg per year as well as a significant reduction in contamination in the mixed recycling and organic streams.
4. **Improve Sorting of ZW Materials with Particular Focus in i) A Wing Cafeteria Front of House, ii) A Wing Ground Floor Hallway and iii) B Wing Ground Floor Atrium:** In these three areas the contaminants in the waste stream are over 90%. Approximately 70% of the contaminants by weight are organic materials. Encouraging the emptying of food waste and napkins in the organics bin, then the disposal of the food packaging in the appropriate ZW recycling or ZW waste to landfill bin through education is required. A behavioural study may be instructional in determining structural and social/cultural barriers to participation and developing concrete area-specific action plans for implementation. Continue to engage students: identify and promote positive and motivating instructional messaging regarding environmental and cost savings associated with "good sorting behaviour". Based on a 24 hour sample these areas generate 7,572 kg of waste to landfill per year. Expected improvement of 10% reduction in waste to landfill in these three areas. Anticipated reduction in waste to landfill of 757 kg per year (10% of waste to landfill from these three areas).
5. **Capturing & Reporting Material Weights for All Diversion Programs at the Campus:** Sheridan has made significant progress in reporting material diversion streams since 2015 however there may

be other diversion programs in place at the HMC Campus but the weight-based data is not currently captured accurately for reporting purposes. For example, HMC does capture feminine hygiene waste for energy-from-waste (not considered diversion, but represents diversion from landfill) though the weight-based reporting accuracy is under question and review. Sheridan should continue to conduct an inventory of all diversion programs, with particular focus on reduction and reuse programs, and should ensure there are procedures in place to collect, monitor and report on these programs.

**Anticipated Result:**

With the implementation of the above noted waste reduction plans, it is estimated that the waste diversion rate at the HMC Campus will increase from 58.7% to 65.7% and the HMC Campus will divert an additional 6,599 kg per year of waste from landfill in 2018.

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## APPENDICES

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### GLOSSARY OF WASTE TERMS

In order to reduce potential confusion that may arise from the use of terms in this report, the following is a brief description of the waste and waste diversion terms.

#### **TOTAL WASTE GENERATED**

Total waste generated refers to all materials generated by the Facility's operations.

Total Waste Generated = Waste Disposed + Material Recovered From 3Rs Programs

#### **RECOVERED WASTE**

Recovered waste refers to materials diverted from the Facility's waste stream and from landfill as a result of 3Rs Programs.

#### **CAPTURE RATES**

Recycling rates for the Facility's 3Rs Programs based on the amount of material recovered versus the amount of the same material disposed into the waste stream.

Capture Rate = Recycled or Reused Material / (Material Disposed + Recycled or Reused)

#### **ANNUAL DIVERSION RATE**

The Facility's annual diversion rate is the percentage of waste material that it diverts from landfill versus what it generates in total.

Annual Diversion Rate = 3Rs Programs / Total Waste Generated

#### **ONTARIO'S 60% REDUCTION TARGET**

The *Ontario Ministry of Environment's* 60% reduction target is a comparison between a Facility's current year waste to landfill figure and a figure obtained from an earlier base year.

60% Reduction Target = (Waste Disposed 2015 - Waste Disposed Base Year) / Waste Disposed Base Year



## SPECIFIC WASTE CATEGORIES & WASTE AUDIT DATA AT HMC CAMPUS

The following is the list of specific wastes, the associated appropriate waste management collection program, and the amount by weight generated per year and disposed by collection program at the HMC Campus in 2017. The specific wastes are listed alphabetically.

Specific Waste Category	Acceptable in Collection Program	All Streams (kg/yr)	ZW Mixed Recycling (kg/yr)	ZW Organics (kg/yr)	Other/ Bulk Recycling (kg/yr)	Reuse (kg/yr)	ZW Waste to Landfill (kg/yr)
#1 PET - clear thermoform packaging	Mixed Recycling	572	391	0	0	0	182
#1 PET - other thermoform (coloured)	Mixed Recycling	0	0	0	0	0	0
#1 PET Bottles - excluding alcoholic beverage	Mixed Recycling	2,051	1,468	120	0	0	463
#2 HDPE Bottles and Jugs	Mixed Recycling	272	237	0	0	0	35
#2 Other HDPE Containers	Mixed Recycling	0	0	0	0	0	0
#5 Other PP Containers	Mixed Recycling	2,332	632	189	0	0	1,510
#6 PS - Expanded polystyrene	Waste	2,918	192	57	0	0	2,668
#6 PS - Non-expanded - all other	Mixed Recycling	1,775	860	37	0	0	879
#7 Other Plastics	Mixed Recycling	0	0	0	0	0	0
Aluminum beverage - alcohol	Alcohol Beverage Container Reuse	0	0	0	0	0	0
Aluminum Foil & Foil Trays	Mixed Recycling	50	12	0	0	0	38
Aluminum Food & Other Beverage Cans	Mixed Recycling	1,322	804	137	0	0	381
Aseptic Containers - (excluding alcoholic beverages)	Mixed Recycling	225	75	92	0	0	58
Batteries	Battery Recycling	0	0	0	0	0	0
Boxboard / Cores	Mixed Recycling	4,890	1,347	734	0	0	2,810
Clear Glass Other Beverage and Food	Mixed Recycling	201	96	105	0	0	0
Clothing/Textiles	Dropbox/Textile Reuse	0	0	0	0	0	0
Coffee Grinds	Organics	0	0	0	0	0	0
Coffee pods	Waste	0	0	0	0	0	0
Confidential Paper - Paper Shred	Paper Shred Recycling	4,659	0	0	4,659	0	0
Corrugated Cardboard - Bulk	Cardboard Recycling	2,448	0	0	2,448	0	0
Corrugated Cardboard - Loose	Mixed Recycling	799	321	81	0	0	396
Diapers	Waste	0	0	0	0	0	0
Feminine Hygiene Products	Hygiene Waste	0	0	0	0	0	0
Food packaging	Waste	3,398	610	405	0	0	2,383
Gable Top Containers	Mixed Recycling	282	123	112	0	0	47
Glass - Clear Other Beverage and Food	Mixed Recycling	0	0	0	0	0	0
Glass - Clear Alcoholic Beverage	Mixed Recycling	0	0	0	0	0	0
Kraft Paper	Mixed Recycling	1,410	420	223	0	0	767
Laminated Paper Packaging	Waste	0	0	0	0	0	0
Large HDPE & PP Pails & Lids	Mixed Recycling	0	0	0	0	0	0

LDPE/HDPE Film - Products (non-packaging)	Waste	298	73	66	0	0	159
Liquids - food/beverage	Organics	5,696	2,276	637	0	0	2,782
Maintenance Waste	Waste	59	0	0	0	0	59
Metal - Bulk	Metal Recycling	0	0	0	0	0	0
E-Waste	E-Waste Recycling	934	0	0	934	0	0
Mixed Fine Paper	Mixed Recycling	6,346	3,917	507	0	0	1,923
Molded Pulp/Fibre	Mixed Recycling	1,136	172	132	0	0	832
Napkins/Toweling (food related)	Organics	4,375	960	1,115	0	0	2,299
Newspaper – Dailys and Weeklys	Mixed Recycling	77	0	0	0	0	77
Office Waste	Waste	2,179	58	177	0	0	1,944
Other Metal	Mixed Recycling	0	0	0	0	0	0
Other Non-Recyclable Material (Laundry)	Waste	0	0	0	0	0	0
Other Paper (paper plates)	Mixed Recycling	0	0	0	0	0	0
Parchment Paper	Waste	48	0	0	0	0	48
Polycoat Beverage Cups - compostable	Organics	8,929	2,221	3,597	0	0	3,111
Polycoat Beverage Cups - non-compostable	Waste	0	0	0	0	0	0
Post Consumer Food Waste	Organics	32,742	2,553	18,231	0	0	11,958
Rubber & Nitrile Gloves	Mixed Recycling	73	24	0	0	0	49
Spiral Wound Containers	Waste	168	29	0	0	0	138
Steel Food & Other Beverage Cans	Mixed Recycling	238	0	0	0	0	238
Straws/Plastic Cutlery	Mixed Recycling	583	125	65	0	0	393
Tissue/Toweling (cleaning related)	Waste	0	0	0	0	0	0
Tissue/Toweling (washroom related)	Organics	0	0	0	0	0	0
Wood	Wood Recycling	0	0	0	0	0	0
Wood Dust	Wood Dust Briquette Recycling	0	0	0	0	0	0
	<b>Grand Total</b>	<b>93,484</b>	<b>19,995</b>	<b>26,820</b>	<b>8,041</b>	<b>0</b>	<b>38,628</b>



## MINISTRY OF THE ENVIRONMENT WASTE FORM: REPORT OF A WASTE AUDIT (HMC)

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 (HMC)

Name of Owner and/or Operator of Entity(ies) and Company Name: Sheridan College Institute of Technology and Advanced Learning		
Name of Contact Person: Wai Chu Cheng	Telephone #: 905 845 9430	Email address: Waichu.cheng@sheridancollege.ca
Street Address(es) of Entity(ies): HMC Campus of Sheridan College		
Municipality: Mississauga, ON Canada		
Type of entity Educational Institution		

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

### II. Description of Entity (HMC)

Provide a brief overview of the entity(ties):
<p>H. McCallion Campus (HMC) is a college campus managed by Sheridan College in Mississauga, Ontario. The campus has two buildings each comprised of four floors totaling more than 300,000 square feet. One of the two buildings was open in January. There are more than 7,000 students attending this campus with more than 300 employees.</p> <p>This waste audit was conducted in April 2017 at this Sheridan College Campus. The Zero Waste streams which include organics, mixed recycling and waste-to-landfill were audited for the purpose of identifying current diversion rates by specific waste category and to calculate contamination rates. A 24 hour sample of organics, mixed recycling and waste-to-landfill was sorted and weighed in each of the 7 areas audited. Weight based generation information from 2016 for the waste and diversion programs were obtained from the service provider(s) and were used in the calculation of diversion rates.</p> <p>At the time of the audit, the campus had fully implemented the following collection programs:</p> <ol style="list-style-type: none"><li>1. Mixed Recycling (co-mingle including glass, metal, paper, plastic)</li><li>2. Organics</li><li>3. Waste to Landfill</li><li>4. Bulk old corrugated cardboard (OCC) Recycling</li><li>5. Paper Shred Recycling</li><li>6. E-Waste Recycling</li></ol>



### III. How Waste is Produced And Decisions Affecting the Production of Waste (HMC)

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.	
#1 PET - clear thermoform packaging	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
#1 PET - other thermoform (coloured)	None generated on campus
#1 PET Bottles - excluding alcoholic beverage	Food packaging, beverage containers and organic waste are available for sale at Campus cafeteria and are brought to campus by staff/faculty and students. ZW water bottle refill stations installed to reduce PET water bottle generation/disposal.
#2 HDPE Bottles and Jugs	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
#2 Other HDPE Containers	None generated on campus
#5 Other PP Containers	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
#6 PS - Expanded polystyrene	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
#6 PS - Non-expanded - all other	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
#7 Other Plastics	None generated on campus
Aluminum beverage - alcohol	None generated on campus
Aluminum Foil & Foil Trays	Small quantities generated on campus and should be included in the ZW recycling program.
Aluminum Food & Other Beverage Cans	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Aseptic Containers - (excluding alcoholic beverages)	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Batteries	None generated on campus
Boxboard / Cores	Generated all over the campus as a packaging material for food products, office products and class material supplies.
Clear Glass Other Beverage and Food	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Clothing/Textiles	None generated on campus
Coffee Grinds	None generated on campus
Coffee pods	None generated on campus
Confidential Paper - Paper Shred	Generated across campus in offices and captured for shredding and recycling.

Corrugated Cardboard - Bulk	Generated in receiving area through delivery. Almost all captured in bulk recycling program.
Corrugated Cardboard - Loose	Generated across campus. Almost all captured in recycling program.
Diapers	None generated on campus
Feminine Hygiene Products	Generated across campus in washrooms. Material collected for diversion from landfill (incineration) though amounts have not been accurately quantified at this time for inclusion in this report
Food packaging	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Gable Top Containers	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Glass - Clear Other Beverage and Food	None generated on campus
Glass - Clear Alcoholic Beverage	None generated on campus
Kraft Paper	Generated in offices and classrooms around campus. Most generated in printing and photocopying areas. Disposed in ZW recycling.
Laminated Paper Packaging	None generated on campus
Large HDPE & PP Pails & Lids	None generated on campus
LDPE/HDPE Film - Products (non-packaging)	None generated on campus
Liquids - food/beverage	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Maintenance Waste	Minimal amounts generated on campus.
Metal - Bulk	None generated on campus
E-Waste	Generated across campus and well captured in E-waste program.
Mixed Fine Paper	Paper products generated through campus activities. Most generated in printing and photocopying areas.
Molded Pulp/Fibre	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Napkins/Toweling (food related)	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Newspaper – Dailys and Weeklys	Available for sale at Campus. Most should be captured in the ZW mixed recycling.
Office Waste	Generated in offices and classrooms around campus. Disposed as waste.
Other Metal	None generated on campus
Other Non-Recyclable Material (Laundry)	None generated on campus
Other Paper (paper plates)	None generated on campus
Parchment Paper	Small quantities generated on campus and should be included in the ZW waste to landfill stream.



Polycoat Beverage Cups - compostable	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Polycoat Beverage Cups - non-compostable	None generated on campus
Post Consumer Food Waste	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Rubber & Nitrile Gloves	Generated in cafeterias across campus. Suitable for inclusion in the ZW recycling program.
Spiral Wound Containers	Minimal amounts generated on campus.
Steel Food & Other Beverage Cans	Food packaging, beverage containers and organic waste is available for sale at Campus cafeteria and is brought to campus by staff/faculty and students
Straws/Plastic Cutlery	Generated in cafeterias across campus. Suitable for inclusion in the ZW recycling program.
Tissue/Toweling (cleaning related)	None generated on campus
Tissue/Toweling (washroom related)	None generated on campus
Wood	None generated on campus
Wood Dust	None generated on campus



#### IV. Management of Waste (HMC)

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
#1 PET - clear thermoform packaging		Should be included in ZW Recycling Bin Program though some may end up in landfill
#1 PET - other thermoform (coloured)	None generated on campus	None generated on campus
#1 PET Bottles - excluding alcoholic beverage		Should be included in ZW Recycling Bin Program though some may end up in landfill. Reduction in PET water bottles through installation of reusable water bottle filling stations.
#2 HDPE Bottles and Jugs		Should be included in ZW Recycling Bin Program though some may end up in landfill
#2 Other HDPE Containers	None generated on campus	None generated on campus
#5 Other PP Containers		Should be included in ZW Recycling Bin Program though some may end up in landfill
#6 PS - Expanded polystyrene	Little generated and no diversion program currently available.	
#6 PS - Non-expanded - all other		Should be included in ZW Recycling Bin Program though some may end up in landfill
#7 Other Plastics	None generated on campus	None generated on campus
Aluminum beverage - alcohol	None generated on campus	None generated on campus
Aluminum Foil & Foil Trays		Should be included in ZW Recycling Bin Program though some may end up in landfill
Aluminum Food & Other Beverage Cans		Should be included in ZW Recycling Bin Program though some may end up in landfill
Aseptic Containers - (excluding alcoholic beverages)		Should be included in ZW Recycling Bin Program though some may end up in landfill
Batteries	None generated on campus	None generated on campus
Boxboard / Cores		Should be included in ZW Recycling Bin Program though some may end up in landfill
Clear Glass Other Beverage and Food		Well captured in ZW recycling program
Clothing/Textiles	None generated on campus	None generated on campus
Coffee Grinds	None generated on campus	None generated on campus
Coffee pods	None generated on campus	None generated on campus

Confidential Paper - Paper Shred		Well captured in paper shred recycling
Corrugated Cardboard - Bulk		Well captured in cardboard recycling.
Corrugated Cardboard - Loose		Should be included in ZW Recycling Bins throughout the campus, though some may end up in landfill
Diapers	None generated on campus	None generated on campus
Feminine Hygiene Products	Generated across campus in washrooms. Material collected for diversion from landfill (incineration) though amounts have not been accurately quantified at this time for inclusion in this report	
Food packaging	Generated across campus and suitable for disposal in waste to landfill though much is contaminating ZW organics and recycling program.	
Gable Top Containers		Should be included in ZW Recycling Bin Program though some may end up in landfill
Glass - Clear Other Beverage and Food	None generated on campus	None generated on campus
Glass - Clear Alcoholic Beverage	None generated on campus	None generated on campus
Kraft Paper		Generated in offices and classrooms and should be included in ZW recycling program though some is disposed as waste.
Laminated Paper Packaging	None generated on campus	None generated on campus
Large HDPE & PP Pails & Lids	None generated on campus	None generated on campus
LDPE/HDPE Film - Products (non-packaging)	None generated on campus	None generated on campus
Liquids - food/beverage		Should be reduced from being disposed and/or included in ZW Organics Bin Program though much ends up in landfill
Maintenance Waste	Little generated and no diversion program currently available.	
Metal - Bulk	None generated on campus	None generated on campus
E-Waste		Generated across campus and well captured in E-waste program.
Mixed Fine Paper		Should be included in ZW Recycling Bin Program though some may end up in landfill

Molded Pulp/Fibre		Should be included in ZW Recycling Bin Program though some may end up in landfill
Napkins/Toweling (food related)		Should be included in ZW Organics Bin Program though much ends up in landfill
Newspaper – Dailys and Weeklys		Should be included in ZW Recycling Bin Program though most ends up in landfill
Office Waste	No diversion program currently available.	
Other Metal	None generated on campus	None generated on campus
Other Non-Recyclable Material (Laundry)	None generated on campus	None generated on campus
Other Paper (paper plates)	None generated on campus	None generated on campus
Parchment Paper	Small quantities disposed in waste to landfill. No diversion program currently exists.	
Polycoat Beverage Cups - compostable		Should be included in ZW Organics Bin Program though some ends up in landfill
Polycoat Beverage Cups - non-compostable	None generated on campus	None generated on campus
Post Consumer Food Waste		Should be included in ZW Organics Bin Program though much ends up in landfill
Rubber & Nitrile Gloves		Should be included in ZW Recycling Bin Program though some may end up in landfill
Spiral Wound Containers	Little generated and no diversion program currently available.	
Steel Food & Other Beverage Cans		Should be included in ZW Recycling Bin Program though some may end up in landfill
Straws/Plastic Cutlery		Should be included in ZW Recycling Bin Program though some may end up in landfill
Tissue/Toweling (cleaning related)	None generated on campus	None generated on campus
Tissue/Toweling (washroom related)	None generated on campus	None generated on campus
Wood	None generated on campus	None generated on campus
Wood Dust	None generated on campus	None generated 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.





V. Estimated Quantity of Waste Produced Annually – HMC

Estimated Amount of Waste Produced (kgs)												
Categories of Waste	Generated			Reused			Recycled			Disposed		
	"A" Base Year 2012 (kg)	"B" * Current Year (kg)	"C" * Change (A-B) (kg)	"A" Base Year 2012 (kg)	"B" * Current Year (kg)	"C" * Change (A-B) (kg)	"A" Base Year 2012 (kg)	"B" * Current Year (kg)	"C" * Change (A-B) (kg)	"A" Base Year 2012 (kg)	"B" * Current Year (kg)	"C" * Change (A-B) (kg)
Cans/bottles/plastics (2012 grouping)	7,680		-7,680	0		0	6,710		-6,710	970		-970
Paper products (2012 grouping)	10,150		-10,150	0		0	10,070		-10,070	80		-80
Other Non-Recyclable Material (2012 grouping)	16,730		-16,730	0		0	0		0	16,730		-16,730
#1 PET - clear thermoform packaging		572	572		0	0		391	391		182	182
#1 PET - other thermoform (coloured)		0	0		0	0		0	0		0	0
#1 PET Bottles - excluding alcoholic beverage		2,051	2,051		0	0		1,588	1,588		463	463
#2 HDPE Bottles and Jugs		272	272		0	0		237	237		35	35
#2 Other HDPE Containers		0	0		0	0		0	0		0	0
#5 Other PP Containers		2,332	2,332		0	0		821	821		1,510	1,510
#6 PS - Expanded polystyrene		2,918	2,918		0	0		249	249		2,668	2,668
#6 PS - Non-expanded - all other		1,775	1,775		0	0		896	896		879	879
#7 Other Plastics		0	0		0	0		0	0		0	0
Aluminum beverage - alcohol		0	0		0	0		0	0		0	0
Aluminum Foil & Foil Trays		50	50		0	0		12	12		38	38
Aluminum Food & Other Beverage Cans		1,322	1,322		0	0		941	941		381	381





Molded Pulp/Fibre		1,136	1,136		0	0			305	305		832	832
Napkins/Toweling (food related)		4,375	4,375		0	0			2,076	2,076		2,299	2,299
Newspaper – Dailies and Weeklys		77	77		0	0			0	0		77	77
Office Waste		2,179	2,179		0	0			234	234		1,944	1,944
Other Metal		0	0		0	0			0	0		0	0
Other Non-Recyclable Material (Laundry)		0	0		0	0			0	0		0	0
Other Paper (paper plates)		0	0		0	0			0	0		0	0
Parchment Paper		48	48		0	0			0	0		48	48
Polycoat Beverage Cups - compostable		8,929	8,929		0	0			5,818	5,818		3,111	3,111
Polycoat Beverage Cups - non-compostable		0	0		0	0			0	0		0	0
Post Consumer Food Waste	810	32,742	31,932	0	0	0		0	20,784	20,784	810	11,958	11,148
Rubber & Nitrile Gloves		73	73		0	0			24	24		49	49
Spiral Wound Containers		168	168		0	0			29	29		138	138
Steel Food & Other Beverage Cans		238	238		0	0			0	0		238	238
Straws/Plastic Cutlery		583	583		0	0			190	190		393	393
Tissue/Toweling (cleaning related)		0	0		0	0			0	0		0	0
Tissue/Toweling (washroom related)	0	0	0	0	0	0		0	0	0	0	0	0
Wood		0	0		0	0			0	0		0	0
Wood Dust		0	0		0	0			0	0		0	0
<b>Total</b>	34,560	93,484	58,924	0	0	0		16,780	54,856	38,076	17,780	38,628	20,848
<b>Percent Change (total C ÷ total A x 100 ) from Base Year:</b>		170.50%			-				226.91%			117.26%	
<b>2017 Current year Diversion Rate:</b>	58.7%												
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.													

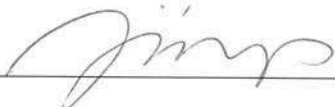
- Fill out these columns each year following the initial waste audit or baseline year to determine the progress that is being made by your waste reduction program.
- Specific waste categories appearing in RED were ones employed during 2012 base audit

VI. Extent to Which Materials or Products Used Or Sold By the Entity Consist of Recycled or Reused Materials or Products (HMC)

Please answer the following questions (and please attach any additional page(s) as required):

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.
	<p>Sheridan's Sustainability Policy outlines one of its principles that is based on a model called The Natural Step as follows: "We must eliminate our contributions to the systematic physical degradation of nature and natural processes (e.g. overharvesting forests, destroying habitat and overfishing)".</p> <p>In the Request of Proposal documents, the contractors are required to outline how they demonstrate sustainability in their project proposals.</p>
2.	<p>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.</p> <p>* 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.</p>
	<p>It is in Sheridan College's long term plan.</p>

I hereby certify that the information provided in this Report of Waste Audit is complete and correct.

<p>Signature of authorized official:</p> 	<p>Title: <i>APP</i> <i>Planning, Facilities &amp; Sustainability</i></p>	<p>Date: <i>Feb 21, 2018</i></p>
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**MINISTRY OF THE ENVIRONMENT WASTE FORM: REPORT OF A WASTE REDUCTION WORK PLAN  
(HMC)**

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 (HMC)**

Name of Owner and/or Operator of Entity(ies) and Company Name: Sheridan College Institute of Technology and Advanced Learning		
Name of Contact Person: Wai Chu Cheng	Telephone #: 905 845 9430	Email address: Waichu.cheng@sheridancollege.ca
Street Address(es) of Entity(ies): HMC Campus of Sheridan College		
Municipality: Mississauga, ON Canada		
Type of entity Educational Institution		

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

**II. Description of Entity (HMC)**

<p>Provide a brief overview of the entity(ties):</p> <p>H. McCallion Campus (HMC) is a college campus managed by Sheridan College in Mississauga, Ontario. The campus has two buildings each comprised of four floors totaling more than 300,000 square feet. One of the two buildings was open in January. There are more than 7,000 students attending this campus with more than 300 employees.</p> <p>This waste audit was conducted in April 2017 at this Sheridan College Campus. The Zero Waste streams which include organics, mixed recycling and waste-to-landfill were audited for the purpose of identifying current diversion rates by specific waste category and to calculate contamination rates. A 24 hour sample of organics, mixed recycling and waste-to-landfill was sorted and weighed in each of the 7 areas audited. Weight based generation information from 2016 for the waste and diversion programs were obtained from the service provider(s) and were used in the calculation of diversion rates.</p> <p>At the time of the audit, the campus had fully implemented the following collection programs:</p> <ol style="list-style-type: none"><li>1. Mixed Recycling (co-mingle including glass, metal, paper, plastic)</li><li>2. Organics</li><li>3. Waste to Landfill</li><li>4. Bulk old corrugated cardboard (OCC) Recycling</li><li>5. Paper Shred Recycling</li><li>6. E-Waste Recycling</li></ol>
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### III. Plans to Reduce, Reuse and Recycle Waste (HMC)

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.	
#1 PET - clear thermoform packaging	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
#1 PET - other thermoform (coloured)	None generated on campus
#1 PET Bottles - excluding alcoholic beverage	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
#2 HDPE Bottles and Jugs	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
#2 Other HDPE Containers	None generated on campus
#5 Other PP Containers	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
#6 PS - Expanded polystyrene	Little generated.
#6 PS - Non-expanded - all other	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
#7 Other Plastics	None generated on campus
Aluminum beverage - alcohol	None generated on campus
Aluminum Foil & Foil Trays	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Aluminum Food & Other Beverage Cans	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Aseptic Containers - (excluding alcoholic beverages)	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Batteries	None generated on campus
Boxboard / Cores	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Clear Glass Other Beverage and Food	No action required.
Clothing/Textiles	None generated on campus
Coffee Grinds	None generated on campus
Coffee pods	None generated on campus

Confidential Paper - Paper Shred	No action required.
Corrugated Cardboard - Bulk	No action required.
Corrugated Cardboard - Loose	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Diapers	None generated on campus
Feminine Hygiene Products	Accurately quantify hygiene waste generation/disposal. Research diversion options that are higher use than incineration.
Food packaging	Improve sorting of materials into the ZW waste streams through behavioural changes and education and signage.
Gable Top Containers	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Glass - Clear Other Beverage and Food	None generated on campus
Glass - Clear Alcoholic Beverage	None generated on campus
Kraft Paper	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Laminated Paper Packaging	None generated on campus
Large HDPE & PP Pails & Lids	None generated on campus
LDPE/HDPE Film - Products (non-packaging)	None generated on campus
Liquids - food/beverage	Staff/students will be encouraged to empty then recycle containers education/signage.
Maintenance Waste	Little generated.
Metal - Bulk	None generated on campus
E-Waste	No action required.
Mixed Fine Paper	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Molded Pulp/Fibre	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Napkins/Toweling (food related)	Staff/students will be encouraged to include material in the ZW organics bin through education/signage.
Newspaper – Dailys and Weeklys	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Office Waste	Little generated.
Other Metal	None generated on campus
Other Non-Recyclable Material (Laundry)	None generated on campus



Other Paper (paper plates)	None generated on campus
Parchment Paper	No action required.
Polycoat Beverage Cups - compostable	Staff/students will be encouraged to include material in the ZW organics bin through education/signage.
Polycoat Beverage Cups - non-compostable	None generated on campus
Post Consumer Food Waste	Staff/students will be encouraged to include material in the ZW organics bin through education/signage.
Rubber & Nitrile Gloves	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Spiral Wound Containers	Little generated.
Steel Food & Other Beverage Cans	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Straws/Plastic Cutlery	Staff/students will be encouraged to include material in the ZW mixed recycling bin through education/signage.
Tissue/Toweling (cleaning related)	None generated on campus
Tissue/Toweling (washroom related)	None generated on campus
Wood	None generated on campus
Wood Dust	None generated on campus

#### IV. Responsibility for Implementing The Waste Reduction Work Plan (HMC)

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 #
Wai Chu Cheng	Promoting, developing and implementing the Zero Waste program, tracking and assessing of data and evaluating the program.	905-845-9430 x 5423
Herbert Sinnock	Developing and evaluating the Zero Waste program.	905-875-4405
James Fletcher	Evaluating the Zero Waste program.	905-845-9430 x2156

#### V. Timetable for Implementing Waste Reduction Work Plan (HMC)

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
Example: Fine Paper 3Rs Program	“Desk side receptacles and centralized containers to be purchased in March. New collection contract for recycling to be arranged for April Kick off for program and instructions to staff regarding 3Rs program to occur in April” <u>OR</u> “3Rs Program currently in place.”
1. Enhancing mixed recycling recovery	<p>Encouraging the proper disposal in mixed recycling of: mixed fine paper, PET bottles, boxboard/cores, polystyrene, aluminum food/beverage containers, polypropylene, kraft paper, cardboard and HDPE through education/signage. Expected improvement in capture rate of 20%.</p> <p>Anticipated reduction in waste to landfill of 2,136 kg per year.</p> <p>Due date: 2017/2018</p>
2. Coffee Cup Management	<p>8,929 kg per year of compostible coffee cups are being disposed in mixed recycling, organics and waste to landfill at the HMC Campus. 2,221 kg are being disposed improperly in mixed recycling and 3,111 kg are being improperly disposed in mixed waste to landfill. Launch a campaign to capture compostible coffee cups in organics. Expected improvement in capture rate of 50%.</p> <p>Anticipated reduction in waste to landfill of 2,666 kg per year.</p> <p>Due date: 2017/2018</p>
3. Encouraging Emptying of Beverage Containers	<p>Continue to encourage the emptying of beverage containers prior to placement in mixed recycling through a combination of education/signage and placement of emptying stations where practicable. Consider launching a campaign to address this growing issue. Anticipated reduction in disposal of liquids in any stream: 40%.</p> <p>Anticipated reduction in waste to landfill of 1,040 kg per year as well as a significant reduction in contamination in the mixed recycling and organic streams.</p> <p>Due date: 2017/2018</p>
4. Improving Sorting of ZW Materials	<p><b>Improve Sorting of ZW Materials with Particular Focus in i) A Wing Cafeteria Front of House, ii) A Wing Ground Floor Hallway and iii) B Wing Ground Floor Atrium:</b> In these three areas the contaminants in the waste stream are over</p>



	<p>90%. Approximately 70% of the contaminants by weight are organic materials. Encouraging the emptying of food waste and napkins in the organics bin, then the disposal of the food packaging in the appropriate ZW recycling or ZW waste to landfill bin through education is required. A behavioural study may be instructional in determining structural and social/cultural barriers to participation and developing concrete area-specific action plans for implementation. Continue to engage students: identify and promote positive and motivating instructional messaging regarding environmental and cost savings associated with "good sorting behaviour". Based on the 24 hour sample, these areas will dispose 7,572kg of waste to landfill in 2017. Expected improvement of 10% reduction in waste to landfill in these three areas.</p> <p>Anticipated reduction in waste to landfill of 757 kg per year.</p> <p>Due date: 2017/2018</p>
5. Capturing & Reporting Material Weights for All Diversion Programs at the Campus	<p>Sheridan has made significant progress in reporting material diversion streams since 2015 however there may be other diversion programs in place at the Trafalgar Campus but the weight-based data is not currently captured accurately for reporting purposes. For example, Davis does capture feminine hygiene waste for energy-from-waste (not considered diversion, but represents diversion from landfill) though the weight-based reporting accuracy is under question and review. Sheridan should continue to conduct an inventory of all diversion programs, with particular focus on reduction and reuse programs, and should ensure there are procedures in place to collect, monitor and report on these programs.</p> <p>Effect on diversion rate likely significant but not quantifiable</p> <p>Due date: 2017/2018</p>

## VI. Communication to Staff, Customers, Guests and Visitors (HMC)

Explain how the Waste Reduction Work Plan will be communicated to employees, customers, tenants, guests/visitors and students:

The Waste Reduction Plan will be posted on the Sheridan Sustainability website. Comprehensive strategies will be adopted in promoting the Zero Waste program, including the weekly e-newsletter Insider, Sustainability website, campus TV screens, campus newspaper, Sheridan social media and the Zero Waste promotion booths across all campuses. These media as well as promotional material and additional signage will be employed, where practicable, to promote the implementation of each of the individual waste reduction work plans.

## VII. Estimated Waste Produced By Material Type And The Projected Amount (HMC)

	Estimated Annual Waste Produced * (kg)	Annual Amount Currently Diverted (2017) (kg)	Name of Proposed 3Rs Program (as stated in Part III)	Projections to Further Reduce, Reuse or Recycle Waste (kg)			Estimated Annual Amount to be Diverted ** (%)
				Reduce	Re-use	Recycle	
<b>ZW Recyclable Material Grouping</b>			<b>1. Enhance ZW Recycling Capture throughout campus</b> - education/signage  <b>4. Improve Sorting ZW Materials in A Wing Cafeteria, Ground Floor Hallway &amp; B Wing Atrium</b> - behavioural study			<b>2,136 (1)</b>   <b>757 (4)</b>	
#1 PET - clear thermoform packaging	572	391	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
#1 PET - other thermoform (coloured)	0	0					
#1 PET Bottles - excluding alcoholic beverage	2,051	1,588	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
#2 HDPE Bottles and Jugs	272	237	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
#2 Other HDPE Containers	0	0					
#5 Other PP Containers	2,332	821	See ZW Recyclable Material Grouping			Included in ZW Recyclable	



						Material Grouping	
#6 PS - Expanded polystyrene	2,918	249	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
#6 PS - Non-expanded - all other	1,775	896	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
#7 Other Plastics	0	0					
Aluminum beverage - alcohol	0	0					
Aluminum Foil & Foil Trays	50	12	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Aluminum Food & Other Beverage Cans	1,322	941	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Aseptic Containers - (excluding alcoholic beverages)	225	167	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Batteries	0	0					
Boxboard / Cores	4,890	2,081	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Clear Glass Other Beverage and Food	201	201					
Clothing/Textiles	0	0					
Coffee Grinds	0	0					
Coffee pods	0	0					

Confidential Paper - Paper Shred	4,659	4,659					
Corrugated Cardboard - Bulk	2,448	2,448					
Corrugated Cardboard - Loose	799	402	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Diapers	0	0					
Feminine Hygiene Products	0	0	5. Capturing & Reporting Material Weights	not known	not known	not known	
Food packaging	3,398	1,015***					
Gable Top Containers	282	235	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Glass - Clear Other Beverage and Food	0	0					
Glass - Clear Alcoholic Beverage	0	0					
Kraft Paper	1,410	643	See ZW Recyclabe Material Grouping			Included in ZW Recyclabe Material Grouping	
Laminated Paper Packaging	0	0					
Large HDPE & PP Pails & Lids	0	0					
LDPE/HDPE Film - Products (non-packaging)	298	139***					
Liquids - food/beverage	5,696	2,914***	3. Promote the emptying of beverage	1,040			

			containers prior to recycling (ongoing)				
Maintenance Waste	59	0					
Metal - Bulk	0	0					
E-Waste	934	934					
Mixed Fine Paper	6,346	4,424	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Molded Pulp/Fibre	1,136	305	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Napkins/Towel ing (food related)	4,375	2,076	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Newspaper – Dailys and Weeklys	77	0	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Office Waste	2,179	234***					
Other Metal	0	0					
Other Non-Recyclable Material (Laundry)	0	0					
Other Paper (paper plates)	0	0					
Parchment Paper	48	0					
Polycoat Beverage Cups - compostable	8,929	5,818	2. Capturing Compostible Coffee Cups			2,666	
Polycoat Beverage Cups - non-compostable	0	0					



Post Consumer Food Waste	32,742	20,784	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Rubber & Nitrile Gloves	73	24					
Spiral Wound Containers	168	29***					
Steel Food & Other Beverage Cans	238	0	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Straws/Plastic Cutlery	583	190	See ZW Recyclable Material Grouping			Included in ZW Recyclable Material Grouping	
Tissue/Towel ing (cleaning related)	0	0					
Tissue/Towel ing (washroom related)	0	0					
Wood	0	0					
Wood Dust	0	0					
<b>CAMPUS WIDE TOTALS</b>	<b>93,484</b>	<b>54,856</b>		<b>1,040</b>	<b>0</b>	<b>5,559</b>	<b>65.7%</b>

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

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

\*\*\* Waste to Landfill material that is being diverted as a contaminant in ZW organics and/or mixed recycling

I hereby certify that the information provided in this Waste Reduction Work Plan is complete and correct.

Signature of authorized official:



Title:

AVP  
Planning, Facilities & Sustainability

Date:

Feb 21, 2018

