INTERIM REPORT

Waste Audit and Waste Reduction Work Plan

Lakehead University Orillia Campus

May 2018

Prepared by:



159 Ridout Street South, London, Ont. N6C 3X7 Paul van der Werf Tel: 519-645-7733 Email: <u>2cg@sympatico.ca</u>

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1.0 Introduction

2cg Inc. was retained by Lakehead University to write a waste audit report and waste reduction work plan for the Orillia Campus, with a waste audit to take place in the Fall of 2018.

Lakehead University (Lakehead) has two campuses, with the main one in Thunder Bay and a smaller campus in Orillia. The Orillia campus has over 1,400 students at the University Avenue campus. The campus is busiest from September to the end of April. It is open from May-August but with a reduced complement of students.

Lakehead is committed to practicing environmental sustainability through education and corporate practices and balancing future growth with the protection of the environment. These waste audits are important because they will ensure compliance with government regulations (i.e. O. Reg. 102/94 and 103/94) while gathering data that can help shape and strengthen Lakehead's environmental initiatives. These initiatives include those proposed and studied in their Environmental Sciences program.



Photo 1. Lakehead University Orillia Campus

This waste audit report includes a full review of Lakehead's waste handling and waste generation, along with the waste composition of schools with a similar size. The goal was to determine the success of current recycling programs and to identify possible improvements and additional wastes which could be recycled. These will be further determined by doing the waste audit in the Fall of 2018.

1.1 Legislative Requirements

Lakehead fits the definition of an Educational Institution with an enrollment of greater than 350 students.

According to ONTARIO REGULATION 102/94 "Waste Audits and Waste Reduction Work Plans" the following must be completed at an "Educational Institution" (i.e. facilities with enrolment greater than 350 people):

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. 0. Reg. 102/94, s. 55.

According to ONTARIO REGULATION 103/94 "Industrial, Commercial and Institutional Source Separation Programs" "Educational Institutions" need to have a source separation program.

2.0 Current Situation

2.1 Description of Waste Generation

Waste is produced through normal student and staff activities. A key management decision that affects the production of waste has been to try and divert wastes from landfill, to the extent possible through various waste diversion programs (e.g. recycling and reuse).

Where possible, materials used by Lakehead consist of recycled or reused materials and/or products. There are a number of areas at Lakehead that result in waste generation.

The key waste generating areas include: Offices, Cafeteria, Hallways, Library, Classrooms, Washrooms, Bookstore, Laboratories, and the Residences. These waste generating areas are spread across three buildings: the Residence building which houses roughly 180 students from September to April, and has offices on the first floor, the cafeteria and bookstore building, and the administrative and academic building which has classrooms, offices and the laboratories. Waste generating areas generally have waste disposal and recycling bins. Photo 2 shows the standard waste and recycling bins used in the hallways, while Photo 3 shows the waste and recycling bins used in the cafeteria.





Photo 2. Hallways Garbage and Recycling Bins



Photo 3. Cafeteria Garbage and Recycling Bins

2.2 Current Source Separation Programs

Lakehead has an extensive source separation program in place that goes beyond regulatory requirements. Table 2.1 depicts the types of waste for which Lakehead has a source separation program and compares them to Regulation 103/94 requirements.

Category	Lakehead	Reg. 103/94	Method of Collection
Cardboard (corrugated) (OCC)	\checkmark	~	Directed to appropriate bin
Fine paper	\checkmark	~	Directed to appropriate bin
Newsprint	\checkmark	~	Directed to appropriate bin
Plastic Beverage and Food Containers	\checkmark	~	Directed to appropriate bin
Glass Beverage and Food Containers	\checkmark	~	Directed to appropriate bin
Aluminum Beverage and Food Containers	\checkmark	~	Directed to appropriate bin
Steel Beverage and Food Containers	\checkmark	~	Directed to appropriate bin
Metal	\checkmark		Directed to staff who collect for recycling
Wood	\checkmark		Directed to staff who collect for recycling or reuse
Food waste			No pre or post-consumer organic waste is composted at Lakehead
Computers (E-Waste)	\checkmark		Directed to appropriate bin
Batteries	\checkmark		Directed to appropriate bin
Donated Items (clothing,	\checkmark		Directed to donation bin or to staff for
electronics, etc.)			compiling and reuse opportunities

Table 2.1 Wastes Source Separated at Lakehead- Orillia

2.3 Current Waste Handling

Wastes are collected from their generation points by contracted cleaning staff and/or waste generators and taken to central waste management locations. A variety of 4-8 cubic yard waste bins and 95 gallon recycling carts are used to remove wastes and recyclables from the Orillia campus.



2.4 Overview of Waste Generation

Annual waste generation at the Orillia campus is depicted in Table 2.3 by using industry densities and tipping information to estimate the weight of Lakehead's waste and recycling. This information will be supplemented by the waste audit which is being planned for the Fall of 2018.

In 2017, the Orillia campus generated an estimated 27.7 tonnes of waste (disposed and recycled). Of that, an estimated 12.2 tonnes was recycled and 15.5 tonnes sent to landfill.

Company Weights	2017
Waste	15.5
Recyclables	
Printed Paper	2.0
Containers	2.0
Donations	1.0
Organics	0.0
Cardboard	7.1
Subtotal	12.2
Total	27.7
Diversion Rate (%)	44.0

Table 2.3 Summary of Waste Generation in 2017 – Waste Data

Overall, the Orillia campus has a waste diversion rate of about 44%.

3.0 Methodology

3.1 Waste Management Reporting

On 24 May 2018 a walkthrough occurred to assess the waste management infrastructure and the waste generating areas at the campus, and discuss the campus's waste management and reduction with staff.

The waste management and reduction walkthrough focused on understanding the waste generation and management at the three campus buildings on site. Furthermore, all 2017 data for waste management was compiled or estimated based on industry densities and the number of waste bins on site to determine an overall overview of waste composition.

When the audit does occur, the general waste auditing categories will follow Table 3.1.

3.2 Development of Waste Reduction Work Plan

Using the results of the waste walkthrough and other information, a new waste reduction work plan was developed. There is no baseline data for the school.



Main Category	Sub Categories
Paper	Newsprint
	Office (fine) paper
	Shredded paper
	Mixed paper (Office)
	Mixed paper (Food)
	Coffee cups
	Other paper
Cardboard/Boxboard	
Plastic	Plastic beverage bottles (PET, HDPE)
	Plastic film (recyclable)
	Polystyrene
	Plastic rigid containers (recyclable)
	Other Plastic
	Garbage bags
Glass	Glass bottles and jars
	Other glass
Metal	Steel cans
	Aluminum cans
	Other metal
Organics	Edible food waste
	Inedible food waste
	Compostable containers
	Paper towels/tissue
Hazardous Waste	Batteries
	Other HHW
Other Waste	Textiles
	Other waste

 Table 3.1 Description of Waste Auditing Categories

4.0 Waste Reduction Work Plan and Recommendations

The time-line for this waste reduction work plan is from **1 September 2018 to 1 September 2021.** This work plan sets out the framework to meet this goal. In 2017, it was estimated that the Orillia campus generated an estimated 27.7 tonnes of waste (disposed and recycled). Of that, an estimated 12.2 tonnes was recycled and 15.5 tonnes sent to landfill. Based on this data, the Orillia campus has a waste diversion rate of about 44%.

Based on previous audits of similar institutions, it is estimated that approximately 14.5% of wastes destined for landfill are readily recyclable with existing programs. This results in about 2.25 tonnes (i.e. 14.5% * 15.5 tonnes of waste) being potentially available for additional waste diversion.

4.1 General Initiatives

To facilitate continuous improvement it is <u>recommended</u> that Lakehead-Orillia campus set a goal and engage in a process to:

• Increase waste diversion rate to 50%

To help develop a more accurate estimate of waste diversion it is <u>recommended</u> that the tracking of waste and recycling weights (i.e. garbage, printed paper and packaging, cardboard etc.) be improved. This could include using monthly reporting from waste



haulers regarding physical weights and/or density estimates from dumpsters and recycling carts by Lakehead staff and/or Janitorial staff to estimate annual tonnage for the various waste diversion programs.

It is **recommended** that Lakehead staff document all recycling activities (e.g. number and type of carts emptied, weights of mixed container bin etc.) to improve the accuracy of future waste diversion rate calculations.

In general, it is <u>recommended</u> that Lakehead prepare and update communications and education material annually (e.g. for Earth Week). This should include information on reduction, re-use and recycling programs, successes, missed opportunities and areas for improvement. Refined communications and education material could include posters, printed materials and displays that report on progress to date and provide a call to action for students and employees on Lakehead's diversion goal and how they can best participate.

Lakehead's Sustainability Coordinator has been gathering best practices of other universities and colleges in relation to waste reduction. This includes assessing how waste and recycling programs are evaluated, the effectiveness of reduction and reuse programs, and the impact of promotion and education materials. It is **recommended** that the sustainability coordinator write an internal memo to staff as this research is conducted to generate new initiatives regarding waste reduction.

Staff are currently assessing the waste and recycling infrastructure in their administrative areas and whether having waste and recycling receptacles only in centralized areas (or recycling in every office but waste in centralized locations) would lead to better sorting and a more efficient program. It is **recommended** that Lakehead consider implementing a pilot study in one administrative area to reduce overall waste.

In general, it is <u>recommended</u> to increase the overall focus on reducing and recycling plastic packaging. This includes current initiatives Lakehead is undertaking such as education on what plastics are and are not recyclable, and initiatives that Lakehead is planning such as making the campus water bottle free.

According to Ontario Regulation 102/94 the waste reduction work plan should have regard to:

- Reduction as the first objective;
- Re-use as the next objective; and
- Recycling as the final objective.

To facilitate continuous improvement, it is <u>recommended</u> that Lakehead-Orillia Campus undertake the following efforts to reduce, re-use and recycle wastes:

4.2 Reduction Initiatives

The amount of paper used could be reduced through ensuring efficient use of paper. Students and staff will be encouraged to use both sides of paper when printing and photocopying documents.



Takeout food containers and coffee cups make up roughly 15% of the waste stream. To reduce the amount of waste this creates, Lakehead is looking into using monetary incentives to encourage students to bring their own reusable mugs and use the cafeterias reusable plates and cutlery. It is **recommended** that Lakehead begin a pilot program to test the effectiveness and replicability of such an incentive program.

4.3 Re-Use Initiatives

It is <u>recommended</u> that Lakehead continue forging links with community organizations such as Habitat for Humanity, Value Village and similar organizations to facilitate additional re-use of wastes.

4.4 Recycling Initiatives

It is **recommended** that Lakehead strengthen its recycling programs.

For instance, it is estimated that roughly 8% of the waste stream consists of beverage bottles or rigid containers that can be easily recycled.

For instance, it is estimated that 2% of the waste stream consists of paper that can be easily recycled.

For instance, it is estimated that 40% of the wastes generated at the Orillia campus consist of organic waste including food waste. There are diversion opportunities for much of this waste. It is <u>recommended</u> that consideration be given to starting a preconsumer organic waste collection program, which could reduce overall waste by as much as 15%.

Lakehead currently recycles their mattresses (at a higher cost than sending them to landfill), and also finds companies to recycle their electronic waste, scrap metal and fluorescent light bulbs. It is <u>recommended</u> that Lakehead continue these programs and find ways to deal with harder to recycle materials.

Improved communications and education materials (e.g. posters etc.) described above will help better advertise and educate students and staff of available programs and how best to participate.

4.5 Implementation Plan

The work will be coordinated by:

Mr. John Siecker, Facility Manager, Physical Plant, Lakehead University, Orillia Campus

Ledah McKellar, Sustainability Coordinator, Lakehead University Residence Manager, Food Services Manager, and other team members as necessary.

The work includes Lakehead staff meeting with relevant staff to update the plan to reduce, re-use and recycle wastes and to update communications and education material by **1 September 2018.**



A summary of the waste reduction work plan will be posted for staff to see by **1** September 2018.

The results of the waste management walkthrough are summarized in the signed Ministry of the Environment Waste Form Report of a Waste Audit (Appendix 1), while the results of the waste audit to be conducted in the Fall of 2018 will be summarized in this form as well. Lakehead has indicated that they will work to address the recommendations set out in this Waste Reduction Work Plan and has signed the Ministry of Environment Waste Reduction Work Plan form in Appendix 1 indicating same.



Appendix 1 Ministry of Environment Reporting Forms

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 0. 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.
- SEE ALSO WASTE AUDIT AND WASTE REDUCTION WORKPLAN REPORT-DECEMBER 2015

I. GENERAL INFORMATION

Name of Owner and/or Operator of Entity(ies) and Company Name: Lakehead University - Orillia campus Name of Contact Person: Telephone #: Email address: (705) 330-4008 Ext. john.siecker@lakeheadu.ca Mr. John Siecker Facility Manager, Physical Plant 2302 Street Address(es) of Entity(ies): 500 University Avenue, Orillia ON **Municipality:** Orillia, Ontario Type of Entity (check one) **Retail Shopping Establishments** Hotels and Motels **Retail Shopping Complexes** Hospitals **Educational Institutions Office Buildings** Х Restaurants Large Manufacturing Establishments

Note: 0. Reg. 102/94 does not apply to multi-unit residential buildings.

II. DESCRIPTION OF ENTITY

Provide a brief overview of the entity(ties):

Lakehead University's Orillia Campus is an educational institution located in Orillia, Ontario. The Orillia campus offers full-time programs, part-time studies, and academic upgrading for roughly 1,500 students.

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?				
Example: Disposable	Generated by customers eating inside restaurant. Food packaging is used for				
Food Packaging	health reasons. Reusable mugs for customers consuming coffee/tea inside				
	restaurant is being reviewed.				
Mixed Papers	Generated by students and employees. Material is deposited into designated container for recycling.				
Molded Pulp	Generated by students and employees. Material is deposited into designated container for recycling.				
Kraft paper	Generated by students and employees. Material is deposited into designated container for recycling.				
Spiral Wound	Generated by students and employees. Material is deposited into designated container for waste.				
Other Paper	Generated by students and employees. Material is deposited into designated container for waste.				
Coffee Cups	Generated by students and employees. Material is deposited into designated container for recycling.				
Gable Top Cartons	Generated by students and employees. Material is deposited into designated container for recycling.				
Asceptic Containers	Generated by students and employees. Material is deposited into designated container for recycling.				
#1 PET	Generated by students and employees. Material is deposited into designated container for recycling.				
#2 HDPE	Generated by students and employees. Material is deposited into designated container for recycling.				
#3 PVC	Generated by students and employees. Material is deposited into designated container for waste.				
#4 LDPE	Generated by students and employees. Material is deposited into designated container for recycling.				
#5 PP	Generated by students and employees. Material is deposited into designated container for recycling.				
#6 PS (Styrofoam)	Generated by students and employees. Material is deposited into designated container for waste.				
#6 PS (Clear/Hard)	Generated by students and employees. Material is deposited into designated container for recycling.				
#7 Other	Generated by students and employees. Material is deposited into designated container for waste.				
Non-Recyclable Film	Generated by students and employees. Material is deposited into designated container for waste.				
Plastic Strapping	Generated by students and employees. Material is deposited into designated container for recycling.				
Aluminum Cans	Generated by students and employees. Material is deposited into designated container for recycling.				
Aluminum Foil	Generated by students and employees. Material is deposited into designated container for waste.				
Steel Cans	Generated by students and employees. Material is deposited into designated container for recycling.				
Scrap Metal	Generated by students and employees. Material is deposited into designated container for recycling.				
Glass	Generated by students and employees. Material is deposited into designated container for recycling.				
Other Glass (ceramics/broken)	Generated by students and employees. Material is deposited into designated container for waste.				
Batteries	Generated by students and employees. Material is deposited into designated container for recycling.				
Food Waste / Liquids	Generated by students and employees. Material is deposited into designated container for waste.				
Tissue & Toweling	Generated by students and employees. Material is deposited into designated container for waste.				
Wood	Generated by students and employees. Material is deposited into designated container for waste.				
Compostable Ware	Generated by students and employees. Material is deposited into designated container for waste.				
Textiles	Generated by students and employees. Material is deposited into designated container for waste.				
Electronic Waste	Generated by students and employees. Material is deposited into designated container for recycling.				

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

IV. MANAGEMENT OF WASTE

Category	Waste to be Disposed	Reused or Recycled Waste
Example:	Staff/clients may place in garbage	Staff/clients place cans in recycling receptacles.
Beverage cans	cans (labeling will be in place to	Collection staff later collect cans. Those in
U	discourage this)	garbage are disposed; those in recycling
		receptacles are recycled.
Newspaper		Participants place in collection containers provided, items captured and recycled.
Magazines		Participants place in collection containers provided, items captured and recycled.
Cardboard		Participants place in collection containers provided, items captured and recycled.
Boxboard		Participants place in collection containers provided, items captured and recycled.
Mixed Papers		Participants place in collection containers provided, items captured and recycled.
Molded Pulp		Participants place in collection containers provided, items captured and recycled.
Kraft paper		Participants place in collection containers provided, items captured and recycled.
Spiral Wound	Participants place in waste containers.	
Other Paper	Participants place in waste containers.	
Coffee Cups		Participants place in collection containers provided, items captured and recycled.
Gable Top Cartons		Participants place in collection containers provided, items captured and recycled.
Aseptic Containers		Participants place in collection containers provided, items captured and recycled.
#1 PETE		Participants place in collection containers provided, items captured and recycled.
#2 HDPE		Participants place in collection containers provided, items captured and recycled.
#3 PVC	Participants place in waste containers.	
#4 LDPE		Participants place in collection containers provided, items captured and recycled.
#5 PP		Participants place in collection containers provided, items captured and recycled.
#6 PS (Styrofoam)	Participants place in waste containers.	
#6 PS (Clear/Hard)		Participants place in collection containers provided, items captured and recycled.
#7 Other	Participants place in waste containers.	
Non-Recyclable Film	Participants place in waste containers.	
Plastic Strapping		Participants place in collection containers provided, items captured and recycled.
Aluminum Cans		Participants place in collection containers provided, items captured and recycled.
Aluminum Foil	Participants place in waste containers.	
Steel Cans		Participants place in collection containers provided, items captured and recycled.
Scrap Metal		Participants place in collection containers provided, items captured and recycled.
Glass		Participants place in collection containers provided, items captured and recycled.
Other Glass (ceramics/broken)	Participants place in waste containers.	
Batteries, E-waste	Participants place in waste containers.	Participants place in collection containers provided, items captured and recycled.
Food Waste / Liquids	Participants place in waste containers.	
Tissue & Toweling	Participants place in waste containers.	
Wood	Participants place in waste containers.	
Compostable Ware	Participants place in waste containers.	
Electronic Waste	Participants place in waste containers.	Participants place in collection containers provided, items contured and
		recycled.

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 Quantit	y of Waste Pr	oduced A	nnually (Bas	e Year)								
See also Waste Audi	t and Waste F	Reduction	Work Plan F	Report Ju	ne 2018							
					Estimate	ed Amount o	of Waste Pro	oduced				
		Osnanatad		-	Deveed	kgs or ton	ines (t)	Descripted		-	Dispased	
	"A" Pasa Voor	"P" *	"C" *	"A" Poco	"P" *	" ^ " *	"A" Boco	"P" *	" ^ " *	"A" Booo	"P" *	"C" *
	A base fear	Current Year	Change	Year	Current	Change	Year	Current Year	Change	Year	Current Year	Change
Categories of Waste			(A-B)	ļ	Year	(A-B)	-		(A-B)			(A-B)
Pener												
Paper		0.5	0.5					0.5	0.5		0.0	0.0
Office (fine) paper		0.5	-0.5					0.5	-0.5		0.0	0.0
Shredded naner		0.0	-1.4					1.7	-1.4		0.1	-0.2
Mixed paper (Office)		2.5	-2.5					2.2	-2.2		0.3	-0.3
Mixed paper (Food)		1.0	-1.0					0.3	-0.3		0.8	-0.8
Coffee cups		2.4	-2.4					0.8	-0.8		1.6	-1.6
Other paper		0.4	-0.4					0.1	-0.1	_	0.2	-0.2
Total Paper		8.2	-8.2					5.2	-5.2		3.0	-3.0
Cardboard		7.4	-7.4	•				7.1	-7.1		0.3	-0.3
Plastics		0.0	0.0)	<u> </u>	-	-				_	
Plastic beverage bottles	_	2.1	-2.1					1.7	-1.7		0.4	-0.4
Plastic film (recyclable)		0.1	-0.1					0.0	0.0		0.1	-0.1
Polystyrene Plastia rigid containere	-	0.1	-0.1					0.0	0.0		0.1	-0-
Other plactic		1.7	-1.7					0.0	-0.0		0.9	-0.8
Garbage bage		0.0	-0.8					1.0	-0.3		23	-0.0
Total		8.0	-9.9)				3.8	-3.8		4.2	-4.2
Glass		0.4	0.4					0.4	0.4		0.0	0.0
Glass bottles and jars		0.1	-0.1					0.1	-0.1		0.0	0.0
Total		0.0 0.1	-0.1					0.0	-0.1		0.0 0.0	0.0
Metal												
Aluminum cans		0.2	-0.2					0.1	-0.1		0.0	0.0
Other Metal		0.0	0.0					0.0	0.0		0.0	0.0
Total		0.0	-0.2	2				0.0	-0.1		0.0	0.0
Wood												
wood		0.0	0.0					0.0	0.0		0.0	0.0
Organic Waste												
Edible food waste		4.2	-4.2	1				1.0	-1.0		3.2	-3.2
Inedible food waste		2.0	-2.0					0.1	-0.1		1.9	-1.9
Compostable containers		0.9	-0.9					0.2	-0.2		0.7	-0.7
Paper towels/tissue		1.6	-1.6					0.1	-0.1		1.5	-1.5
Total		8.0	-8.0					1.3	-1.3		7.3	-1.3
Hazardous Waste												
Batteries	_	0.0	0.0)				0.0	0.0		0.0	0.0
Other HHW Total Hazardous Waste		0.0 0.0	0.0 0.0	0				0.0	0.0 0.0		0.0 0.0	0.0 0.0
Residual Waste	+					<u> </u>	<u> </u>			<u> </u>		
Other regidue!		0.0	0.0	/				0.0	0.0		0.0	0.0
Total Residual Weste	+	0.7	-0.7					0.0	0.0		0.7	-0.7
		5.7	-0.7					0.0	0.0		0.7	-0.7
Total		26.	7 -26.	7				11.	2 -11.	2	15.	5 -15
Percent Change (total C +	0.0	0.0	#DIV/	0!			0.	0.0	#DIV/	0! 0.0	0.0	#DIV/

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.

Guidelines are in place that promote green products.

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.

Lakehead University will investigate using recycled or re-used materials to the extent possible, where it is economically feasible to do so.

* 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:	
x	Facility Manager	X	

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 0. 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:		
Lakehead University – Orillia campus			
Name of Contact Person:	Telephone #:	Email address:	
Mr. John Siecker	(705) 330-4008 Ext.	john.siecker@lakeheadu.ca	
Facility Manager, Physical Plant	2302		
Street Address(es) of Entity(ies):			
500 University Avenue, Orillia ON			
Municipality:			
Orillia, Ontario			
Type of Entity (check one)			
Retail Shopping Establishments	Hotels and Motels		
Retail Shopping Complexes	Hospitals		
Office Buildings	Educational Institutions	5	х
Restaurants	Large Manufacturing E	stablishments	

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):

Lakehead University's Orillia Campus is an educational institution located in Orillia, Ontario. The Orillia campus offers full-time programs, part-time studies, and academic upgrading for roughly 1,500 students.

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.

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Waste Category (as stated in Part V of your "Report of a Waste Audit")	Source Separation and 3Rs Program	
Example:	"Fine Paper 3Rs Program"	
fine paper (e.g.	Reduce: Staff will be encouraged to print on both sides of each sheet.	
from an office)	Reuse: Discarded paper with print only on one side will be used for note	
	pads/scrap.	
	<u>Recycle:</u> Staff will be provided with instructions via email. Receptacles will be	
	provided beside each desk. Staff will empty receptacles into centralized	
	containers. Custodial staff will empty centralized containers into bulk container at	
	loading dock for collection by recycling company.	
	Improve data collection	
General	Circulate best practices from other schools	
	Maintain and improve communications and education program	
	Reduce – double sided photocopying	
Paper		
	Recycling- maximize use of existing recycling infrastructure	
	Pocycling maximize use of existing recycling infrastructure	
Cardboard	Recycling-maximize use of existing recycling innastructure	
Plastic	Recycling- maximize use of existing recycling infrastructure	
Glass	Recycling- maximize use of existing recycling infrastructure	
01055		
	Recycling- maximize use of existing recycling infrastructure	
Metal		
	Recycling- maximize use of existing recycling infrastructure	
Wood		
	Consider adding recycling infrastructure for pre consumer organic	
Organic Waste	wests and then next accounts arganic wests	
	waste and then post consumer organic waste	

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 #	
Mr. John Siecker	Facility Manager, Physical Plant	(705) 330-4008 Ext.2302	

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			
Example: Fine Paper 3Rs Program	"Deskside 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."			
General	The time-line for this waste reduction work plan is from 1 September 2018-September 2021. This work plan sets out the framework to meet this goal.			
	To facilitate continuous improvement it is <u>recommended</u> that Lakehead set a goal and engage in a process to:			
	Increase waste diversion rate to 50%			
General	In general, it is <u>recommended</u> that Lakehead prepare and update communications and education material annually (e.g. for Earth Week) in 2018.			
	It is recommended that Lakehead begin a pilot program to test the effectiveness and replicability of providing incentives to reduce the number of takeout containers and coffee cups that are used by students and staff.			
Data collection	To help develop a more accurate estimate of waste diversion it is <u>recommended</u> that the tracking of waste and recycling weights (i.e. garbage, printed paper and packaging, cardboard etc.) be improved in 2018.			
	It is <u>recommended</u> that Lakehead staff document all recycling activities (e.g. number and type of carts emptied, weights of mixed container bin etc.) to improve the accuracy of future waste diversion rate calculations in 2018.			
Reuse	It is recommended that Lakehead investigate forging links with community organizations such as Habitat for Humanity (building materials) and Goodwill Industries (furniture, other items) to facilitate additional re-use of wastes in 2018.			
Recycling	It is recommended that Lakehead strengthen its recycling programs.			
	It is <u>recommended</u> that Lakehead consider implementing a pre consumer organic waste diversion program at the Orillia Campus.			
	The work includes Lakehead staff meeting with relevant staff to update the plan to reduce, re-use and recycle wastes and to update communications and education material by 1 September 2018.			

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:

A summary of these waste audit results and waste reduction work plan will be posted for staff to see by **1 September 2018**.

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

Material Categories	Estimated Annual Waste Produced *		Projection: F	s to Reduce, Recycle Wast	Reuse or e	Estimated Annual Amount to be Diverted **
(as stated in	(kgs or tonnes)	Name of Proposed 3Rs Program	(kgs or tonnes)		(%)	
Part III)		(as stated in Part III)				
			Reduce	Reuse	Recycle	
Example:	1.8 tonnes	Fine Paper 3Rs Program	200 kg	100 kg	1.2 tonnes	83
Fine Paper				- 0		
Paper	8.2	Recycling Program			6.6	80
Cardboard	7.4	Recycling Program			7.1	95
Plastic	8.0	Recycling Program			4.0	50
Glass	0.1	Recycling Program			0.1	100
Metal	0.2	Recycling Program			0.2	100
Wood	0.0	Recycling Program			0.0	100
Organic Waste	8.6	Recycling Program			0.9	10

* 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:		
x	Facility Manager, Physical	x		
	Plant			