

Durham Region (Clarington) Waste Audit

WDO Project #: OPT-R1-11

Submitted to:



Prepared by:



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Executive Summary

The Region of Durham undertook a residential waste composition audit in September 2000 to determine what types and amounts of material were being collected in each of the following three waste streams: recycling, composting and garbage. This information would compliment similar waste audit data collected by the Region during April 2000 and December 2000.

The waste audit was conducted in an area that received curbside biweekly recycling and weekly garbage collection on Wednesdays and curbside organics collection every Monday. The organics program included food and yard wastes and this special pilot service started in May 2000 and continued until the end of December 2000.

Introduction

The purpose of the September 2000 waste audit was to determine if any significant change had occurred in the behaviour of residents, as a result of the residents being part of a pilot weekly food and yard waste collection program.

Similar waste audits were undertaken before the pilot program started in April 2000 and again at the end of the pilot program in December 2000. The September 2000 data would provide useful mid study information.

Methodology

The Region of Durham used the procedures outlined in the WDO “Residential Curbside Waste Audit Guide”, dated July 2000. The study area consisted of 30 pre-selected homes; twenty single family homes with a mix of single and double car garages and ten street townhouses. The residential neighbourhood was 5 to 10 years old and the study was carried out over a period of 4 consecutive weeks. All waste materials were collected, including garbage, organics, and recyclables.

The residential waste was sorted into the following 7 major categories: paper fibres, plastics, metals, glass, household special wastes, compostables, and other waste materials. There were a total of 57 waste material sorts.

The waste audit results were recorded on the summary tables provided in the WDO “Residential Curbside Waste Audit Guide” and a copy of the results are attached to this report.

Results

The following information was noted:

- The average number of garbage containers per hhld per week was **2.3**.
- The garbage waste collected represented **51%** of the total waste.
- There were no user fees and there is a bag limit of 4 per household.
- The number of Blue Boxes per hhld per collection (bi-weekly) was **1.3**.
- The recyclables collected represented **18%** of the total waste.
- The Blue Box recovery rate for newspapers, magazines, etc was **88%**
- The Blue Box recovery rate for PETE soft drink containers was **47%**
- The Blue Box recovery rate for aluminum and steel cans was **54%**
- The Blue Box recovery rate for glass bottles and jars was **40%**
- The number of organic containers per hhld per collection was **0.9**.
- The compostables collected represented **31%** of the total waste.

- The compostable recovery rate for grass, woody & yard wastes was **88%**
- The compostable recovery rate for kitchen food wastes was **22%**
- The total waste collected represented **1,126 kg** per hhd per year.
- Household special wastes represented **0.15%** of the total waste.
- Sanitary products represented **4%** of the total waste.
- Other waste materials represented **9%** of the total waste.

Transferability to other Municipalities in Ontario

The above information will be of value to other municipalities having similar residential recycling and composting programs.

Report Photographs

Attached to this report are four colour photographs taken during the waste audit.

Report submitted by:

Peter Watson, Manager of Waste Management,
Region of Durham Works Department
January 2001

For further information ,please contact:

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Attachment: Photographs of Region of Durham and Compost Management staff conducting the September 2000 waste audit.



Waste Audit Description

Municipality:	Region of Durham
Municipal Contact Name:	Peter Watson
Municipal Contact Phone:	(905) 668-7721
Study Undertaken By:	Region of Durham & Compost Mgmt.
Neighbourhood:	Courtice in Clarington
Street Names:	Lyndale, Bushford
No. of Households Sampled:	30
Average Age of Households:	5 to 10 years
Types of Households Sampled:	single family (66%) and street townhouses (33%)
Study Start Date:	September 11, 2000
Study End Date:	October 4, 2000
No. of Garbage Collections:	4
Ave. no. of containers / hhld / pickup:	2.3
Weight of Garbage in kilograms:	1,326
Garbage Percentage of Total :	51%
Any user fees or bag restrictions?:	No user fees. 4 bag limit.
No. of Recyclable Collections:	2
Ave. no. of containers / hhld / pickup:	1.3
Weight of Recyclables in kilograms:	462
Recyclables Percentage of Total :	18%
Frequency of collection service:	biweekly
No. of Organic Collections:	4
Ave. no. of containers / hhld / pickup:	0.9
Weight of Organics in kilograms:	811
Organics Percentage of Total :	31%
Are grass clippings collected?:	Yes
Are food wastes collected?:	Yes
Total Weight Collected in kilograms:	2,599
Total kilograms per hhld per year:	1126
General Weather Conditions:	sunny, warm/cool/cool/cool and rainy
Other Notes:	

Waste Audit Collection Log

Weather:

Date: Total of all weeks

Street Name	House Address	Waste Collection Stream		
		Recyclables	Garbage	Organics
		(No. of containers)	(No. of containers)	(No. of containers)
Lyndale Crescent	13	0	2	0
	15	5	8	9
	17	3	9	3
	19	4	10	5
	21	2.5	12	5
	23	2	16	6
	25	3	7	8
	27	5	6	8
	29	2	4	2
	31	2	12	1
	33	1	7	1
	35	6.5	10	5
	37	4	4	1
	39	4	11	2
	41	2	4	5
	43	2	9	8
	45	3	6	12
	47	2	4	7
	49	2	15	8
	51	4	9	3
Bushford Street	15	0	14	0
	17	0	14	1
	19	0	10	6
	21	0	9	1
	31	2.5	7	4
	33	2	15	0
	35	2	12	1
	37	4	14	1
	39	2	12	0
	41	4	4	0

Note: Contingency houses not included since not used.

Total no. of containers collected	75.5	276	113
Total no. of collections	2	4	4
Avg containers per hhd per collection	1.3	2.3	0.9

Waste Audit Results Table

Municipality: Region of Durham

date: September 2000

Number of households:

30

4 week survey

Waste collection streams		Blue Box	Organics	Garbage	Generation			Recovery Rate Percent (%)
					Net Weight (kg)	Net Weight (kg)	Net Weight (kg)	

1. PAPER FIBRES									
Waste sort categories and descriptions			Net Weight (kg)	Net Weight (kg)	Net Weight (kg)	Total Net Weight (kg)	Percent of Total (%)	kilograms per hhd per year	Recovery Rate Percent (%)
Newspaper	ONP, inserts	BB	216.05		26.00	242.05	9.31	104.89	89%
Magazines & paperbacks	OMG, catalogues, soft covers	BB	40.65		8.50	49.15	1.89	21.30	83%
Phone Books	OTB	BB				0.00	0.00	0.00	#DIV/0!
Cardboard	OCC	BB	38.90		18.15	57.05	2.20	24.72	68%
Boxboard/Rolls	OBB	BB	36.30	0.20	59.75	96.25	3.70	41.71	38%
Mixed Papers	junk mail, fine household papers	BB	48.15		41.85	90.00	3.46	39.00	54%
Molded Pulp	egg cartons, drink trays	CO	0.50	0.95	11.90	13.35	0.51	5.79	7%
Books	hard covered					0.00	0.00	0.00	N/A
Kraft Paper	paper bags		0.15		19.15	19.30	0.74	8.36	N/A
Spiral Wound	frozen juice, pringles type packaging		0.10		3.00	3.10	0.12	1.34	N/A
Tissue/Toweling	tissues, napkins, paper towels	CO		6.60	55.40	62.00	2.39	26.87	11%
Other Paper	multi-layered, waxed, wrapping, fast food		1.00	0.30	20.90	22.20	0.85	9.62	N/A
Gable Top Cartons	milk, juice			0.25	5.55	5.80	0.22	2.51	N/A
Aseptic Containers	tetra type packaging				2.45	2.45	0.09	1.06	N/A
Sub-total Paper Fibres			381.80	8.30	272.60	662.70	25.50	287.17	58%

2. PLASTICS									
Waste sort categories and descriptions			Net Weight (kg)	Net Weight (kg)	Net Weight (kg)	Total Net Weight (kg)	Percent of Total (%)	kilograms per hhd per year	Recovery Rate Percent (%)
PETE Soft Drink	# 1 soft drink	BB	7.75		9.15	16.90	0.65	7.32	46%
LCBO containers	alcoholic beverage containers	BB			0.10	0.10	0.00	0.04	0%
PETE Other	water, juice, food, dish soap, trays	BB	4.35		4.75	9.10	0.35	3.94	48%
HDPE bottles	# 2				17.85	17.85	0.69	7.74	N/A
PVC	# 3, bottles, packaging				0.70	0.70	0.03	0.30	N/A
LDPE & PP Bottles	# 4 and # 5, squeezable		0.30	0.15	2.65	3.10	0.12	1.34	N/A
PS	# 6, trays, cups, packaging		0.05	0.10	10.70	10.85	0.42	4.70	N/A
Recyclable Film	shopping bags, milk pouches,		0.65	0.65	30.30	31.60	1.22	13.69	N/A
Non-Recyclable Film	garbage bags, chip bags, shrink wrap			2.55	38.55	41.10	1.58	17.81	N/A
Wide Mouth Tubs & Lids	# 2, 4, 5 & 6		0.10		4.10	4.20	0.16	1.82	N/A
Other Containers	# 7, trays, bottles, unmarked plastics			0.05	13.15	13.20	0.51	5.72	N/A
Other Plastics	non-pkg, garden hose, VCR tape, toys		2.35		43.35	45.70	1.76	19.80	N/A
Sub-total Plastics			15.55	3.50	175.35	194.40	7.48	84.24	8%

3. METALS									
Waste sort categories and descriptions			Net Weight (kg)	Net Weight (kg)	Net Weight (kg)	Total Net Weight (kg)	Percent of Total (%)	kilograms per hhd per year	Recovery Rate Percent (%)
Aluminum Cans	food & beverage cans	BB	9.10		8.80	17.90	0.69	7.76	51%
Aluminum Foil Trays	pie plates, etc	BB			3.90	3.90	0.15	1.69	0%
Steel Cans	food & beverage cans	BB	22.25		18.40	40.65	1.56	17.62	55%
Aerosol Cans	empty				1.70	1.70	0.07	0.74	N/A
Paint Cans	empty				0.65	0.65	0.03	0.28	N/A
Other Metal	scrap metal, other containers, bikes				10.95	10.95	0.42	4.75	N/A
Sub-total Metals			31.35	0.00	44.40	75.75	2.91	32.83	41%

Waste Audit Results Table

Municipality: Region of Durham

date: September 2000

page 2 of 2

4 week survey

Waste collection streams		Blue Box	Organics	Garbage	Generation			Recovery Rate Percent
Waste sort categories and descriptions		Net Weight (kg)	Net Weight (kg)	Net Weight (kg)	Total Net Weight (kg)	Percent of Total (%)	kg. per hhld per year	

4. GLASS									
LCBO Clear	clear glass alcoholic beverages	BB	11.25		9.85	21.10	0.81	9.14	53%
LCBO Coloured	coloured glass alcoholic beverages	BB	3.20		6.05	9.25	0.36	4.01	35%
Clear	food & beverage containers	BB	15.00		20.45	35.45	1.36	15.36	42%
Coloured	food & beverage containers	BB			0.95	0.95	0.04	0.41	0%
Other Glass	lightbulbs, window glass, cups, ceramics		3.55		11.50	15.05	0.58	6.52	N/A
Sub-total Glass			33.00	0.00	48.80	81.80	3.15	35.45	40%

5. HOUSEHOLD SPECIAL WASTES									
Batteries	all types				2.80	2.80	0.11	1.21	N/A
Paint	mostly half to full containers					0.00	0.00	0.00	N/A
Motor Oil	used oil, filters					0.00	0.00	0.00	N/A
Flammables	starter fluid, solvents					0.00	0.00	0.00	N/A
Other HSW	sharps, drugs, acids, antifreeze				1.10	1.10	0.04	0.48	N/A
Sub-total HSW			0.00	0.00	3.90	3.90	0.15	1.69	

6. COMPOSTABLES									
Vegetable Food Waste	vegetable and fruit peelings	CO		88.65	264.95	353.60	13.61	153.23	25%
Animal Food Waste	meats, fats, oils	CO		4.90	73.35	78.25	3.01	33.91	6%
Grass	grass clippings	CO		205.70	24.15	229.85	8.84	99.60	89%
Woody Yard Waste	brush, branches, wood chips	CO		55.45		55.45	2.13	24.03	100%
Other Yard Waste	leaves, soil, garden wastes	CO		439.40	75.75	515.15	19.82	223.23	85%
Animal waste	feces, animal litter and bedding	CO		4.80	115.60	120.40	4.63	52.17	4%
Wood ashes	fireplaces & wood stoves	CO				0.00	0.00	0.00	#DIV/0!
Sub-total Compostables			0.00	798.90	553.80	1,352.70	52.05	586.17	

7. OTHER WASTE MATERIALS									
Textiles	clothing, shoes				83.30	83.30	3.21	36.10	N/A
Building Renovations	drywall, lumber, carpeting				16.40	16.40	0.63	7.11	N/A
White Goods	large appliances					0.00	0.00	0.00	N/A
Sanitary Products	diapers, napkins		0.45		102.30	102.75	3.95	44.53	N/A
Electronics/Appliances	small appliances, computers, radios				8.70	8.70	0.33	3.77	N/A
Rubber	tires, mats, tubing				0.10	0.10	0.00	0.04	N/A
Furniture	sofas, chairs, cabinets					0.00	0.00	0.00	N/A
Other	materials not classified elsewhere		0.15		16.00	16.15	0.62	7.00	N/A
Sub-total Other Waste Materials			0.00	0.60	226.80	227.40	8.75	98.54	

Total weight in kilograms	462	811	1,326	2,599		1,126	49%
Total percentages by waste type	18%	31%	51%	100%			

Notes:

"BB" refers to the municipal Blue Box program list of materials. Insert a "Y" in column only if the materials is an official part of the Blue Box program

"Blue Box" refers to all recyclables collected at the curb, either in a box, bag or other container and the container can be a variety of colours

"Organics" refers to all compostables collected at the curb as either leaf & yard waste, or food and yard wastes for centralized composting

"Garbage" refers to all waste residue materials collected at the curb in bags, containers, tied, bundled for waste disposal

If a "two" stream waste collection system is used, change the column titles as follows:

- a) Blue Box to read DRY b) Organics to read WET c) Garbage to read as a blank

"Recovery" column shows rates for curbside Blue Box recyclables and curbside organics