



Gartner
Lee

Summary of Study Findings in the Development of the Ontario Municipal Waste Composition Estimation Model

(WDO OPT-R2-01)

Prepared For:
Region of Durham

Prepared By:
Gartner Lee Limited

GLL 20-608

March, 2001

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March 7, 2001

GLL 20-608

Mr. Peter Watson, P.Eng.
Manager of Waste Management
Region of Durham
Works Department
P.O. Box 623
105 Consumers Drive
Whitby, Ontario
L1N 6A3

Dear Mr. Watson:

Re: Ontario Waste Diversion Organization Project OPT-R2-01 Municipal Waste Composition Estimation Model

Gartner Lee is pleased to submit our results on the results of the WDO funded municipal waste audits for single family homes. We have supplemented these data with some selected unfunded audits.

The report aggregates the data where possible by season of the year and by municipal population categories, showing the results as a range. Some of the submitted data could not be used because it was atypical. These data and the reasons for not including them are noted in the report.

The report includes Appendix D, which is a revision to the Audit Guide and a revised spreadsheet. The revisions were based on problems encountered by users of the original guide.

Gartner Lee was pleased to have been asked to carry out this interesting work. We trust that our report will be useful to the WDO and its Committees.

Gartner Lee is interested in participating in any follow-up work which may ensue from this project.

Yours very truly,
GARTNER LEE LIMITED

Bill Balfour, M.B.A.,P.Eng.
Principal

MEW:mm
Attach.

1. Introduction

Gartner Lee Limited (GLL) was retained by the Ontario Waste Diversion Organization (WDO) via the Region of Durham to obtain, compile, review and compare waste composition data from municipalities according to the WDO's *Residential Curbside Waste Audit Guide* (RCWAG). The RCWAG was created with the goal of providing a straightforward and easy-to-follow methodology for municipalities undertaking curbside waste audits. This standardized methodology enables results from different municipalities to be easily compiled and compared. These data provides a useful resource for municipalities undertaking new waste classification and quantification studies by providing an estimation of the percent of total waste ranges for each waste component. Also, through comparing the waste audit results of municipalities with different programs in place (such as user pay systems or grass clipping bans), estimates can be made of the potential that certain programs have to reduce some components of the waste stream.

The RCWAG provides an outline of how to proceed with waste quantification and composition studies depending on the needs of each individual municipality. In particular, this guideline provides a methodology for full waste audits. Full, or Level Three, waste audits involve the collection and separation of all materials in the waste stream into categories, and the weighing of each category of waste. In general, the RCWAG suggests that single family residences only be sampled, avoiding triplexes and small apartment buildings. Selected houses should be located consecutively and on the same side of the street, and that 20 to 30 households be chosen. Studies have shown that using a sample size of 20 to 30 households is not statistically representative of the population. However, in order to control sample collection, haulage, processing and sorting time within one working day, and thus maintain a cost effective study, sampling of 20 to 30 households was suggested as an appropriate compromise.

The waste audit data collected for this study was obtained from two sources. Data was submitted by each of the nine upper tier municipalities that received Round One and Round Two WDO waste audit funding (*funded municipalities*) and six other upper tier municipalities that did not receive funding but completed waste audits no later than 1996 (*unfunded municipalities*). Waste audits were completed by *funded municipalities* at various times during 2000 and data from the *unfunded municipalities* was collected between 1996 and 2000. Table 1 outlines the year, season and length of audit for each municipality.

Table 1. General Information for Each Municipality

	Municipality	Year	Date	Season
Funded by WDO	Township of Augusta	2000	16-20 Aug	Summer
	Region of Durham	2000	11 Sept-4 Oct	Fall
	Region of Halton	2000	Jan	Winter
			May-June	Summer
			Sept	Summer
			Nov	Winter
	Region of North Glengarry	2000	11 July-1 Aug	Summer
	City of Peterborough	2000	15 Aug-19 Aug	Summer
			7 Nov-21 Nov	Fall
City of Sault Ste. Marie	2000	21 Aug-1 Sept	Summer	
Simcoe County	2000	Nov	Winter	
Region of Sudbury	2000	7 Nov-30 Nov	Winter	
City of Toronto ¹	2000	Oct-Nov	Fall	
Unfunded by WDO	City of Barrie	1997	Nov	Winter
	City of Brantford	1996	19 Nov-3 Dec	Winter
	Region of Durham	2000	20 Nov-15 Dec	Winter
	City of Guelph	2000	4-12 April	Spring
			31 July-11 Aug	Summer
	Town of Markham	2000	29 Sept-6 Oct	Fall
	Region of Ottawa – Carleton	1999	20 Sept-1 Oct	Fall
29 Nov-1 Dec			Winter	
Region of Peel	2000	21 June-11 July	Summer	
		27 Nov-8 Dec	Winter	

Note: 1. Toronto completed four weeks of sampling however only two weeks were submitted.

2. Anomalies

After understanding the methodology used for each audit submitted, the data was review to determine its usefulness for this study. It was found that three municipalities submitted data that is not applicable to this study. A brief description of each data set that was not used follows.

2.1 Township of Augusta

Our study seeks to compare waste audits, which focus on residential households with curbside pick up. The Township of Augusta does not have curbside pick up. Residents of this area dispose of their household waste by dropping off their waste at depots. The audit was conducted at these depots and is based on the number of vehicles that dropped off waste over a four day period (covering a weekend), not

the number of households sampled. Since, residents do not always make weekly trips to the depots to dispose of their waste, contamination of the waste is an issue. The oldest waste starts to decompose while it is stored at the resident's household and once it is dropped off at the depot it is hard to divide this waste into individual waste categories. It is contaminated.

For these reasons the Township of Augusta's waste audit is not included in the comparison of residential audits for Ontario. To do so would be like comparing apples to oranges. We would, however, like to note that the data received is valid based on the method employed to obtain it. (These data are contained in Appendix A.)

2.2 Regional Municipality of Halton

In previous audits Halton Region categorized their blue box recycling program. However, in the 2000 audit the blue box was weighed at curbside. Garbage was collected and sorted into categories, and then the blue box items were added to the garbage stream. The total garbage and blue box components of a particular category were weighed together. Therefore, there are no separate weights for the main components (garbage, blue box, organics) of the waste stream. The blue box recovery rate for each category is consequently unknown. Thus, this audit was not used in the overall comparison. (Region of Halton waste audit data are contained in Appendix A.)

2.3 City of Guelph

The City of Guelph operates a two stream waste collection system. The two streams are generally referred to as Wet, and Dry. However, all of the other municipalities that submitted audit information operate under a three stream (garbage, blue box, organics) waste collection. Accordingly, the Guelph data are not included in the waste audit comparison data for Ontario. (The data are included in Appendix A.)

3. Comparison of Data

The waste audit data from the remaining municipalities are placed into two main groups. The first classification is by season. None of the audits were conducted in the spring. Four regional municipalities sampled in the summer. Five regions were surveyed in the fall, and four regions conducted surveys in the winter. The City of Toronto is further divided into four municipalities (Etobicoke, Scarborough, York and North York). Peel Region is further divided into three municipalities (Mississauga, Brampton and Bolton).

Table 2 on the following eight pages contains the percent of total [waste], and kg/hh/yr for the given season. Table 2a shows the percent of total [waste], and kg/hh/yr for each municipality with summer audits. Table 2b contains data for each municipality that conducted fall audits. Table 2c shows the percent of total [waste], and kg/hh/yr for each municipality with winter audits.

Table 2a: Waste Audits Performed in the Summer Season (May - August)

Component and Description	North Glengarry		Peterborough		Sault Ste. Marie		Mississauga		Brampton		Bolton	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES												
Newspaper	8.2	58.5	0.0	0.0	9.2	65.7	10.0	144.2	11.9	124.6	12.1	115.5
Magazines & paperbacks	2.9	20.3	0.0	0.0	1.8	13.1	1.9	27.6	1.5	15.7	1.1	10.6
Phone Books	0.0	0.0	0.0	0.0	0.2	1.1	0.1	0.9	0.3	3.2	0.2	2.1
Total News, Phone, & Mags			10.4	92.9								
Cardboard	3.8	27.0	3.1	27.3	3.1	22.1	4.5	65.3	2.9	30.8	3.1	29.4
Boxboard/Rolls	4.0	28.8	2.5	21.9	5.0	35.8	2.6	37.8	3.1	32.8	3.8	36.5
Mixed Papers	1.8	12.5	2.7	24.4	3.9	27.6	2.5	36.5	3.2	33.5	2.9	27.8
Molded Pulp	0.3	1.8	0.0	0.0	0.4	2.7	0.3	4.3	0.2	2.4	0.2	1.7
Books	0.2	1.7	0.0	0.0	0.2	1.3	0.2	3.4	0.4	4.0	0.0	0.0
Kraft Paper	0.8	5.4	0.0	0.0	1.2	8.5	0.1	1.6	0.1	0.7	0.1	0.7
Spiral Wound	0.2	1.4	0.0	0.0	0.2	1.4	0.1	1.6	0.1	0.6	0.1	0.5
Tissue/Toweling	2.0	14.4	0.0	0.0	3.0	21.3	2.5	35.5	2.9	30.1	3.4	32.6
Other Paper	0.7	4.7	0.0	0.0	0.3	2.3	1.4	19.6	1.9	20.1	2.0	19.2
Gable Top Cartons	0.4	2.9	0.0	0.0	0.5	3.2	0.2	2.7	0.3	3.0	0.6	5.8
Aseptic Containers	0.1	0.7	0.0	0.3	0.0	0.2	0.1	0.8	0.1	0.7	0.1	0.7
Total Gable Top & Aseptic			0.4	3.3								
Sub-total Paper Fibres	25.3	180.2	18.7	166.8	28.9	206.4	26.5	381.7	28.9	302.4	29.6	283.1
2. PLASTICS												
PETE Soft Drink	0.6	4.1	0.7	6.2	0.6	4.3	0.6	8.9	0.6	6.7	0.8	7.9
LCBO containers	0.0	0.0	0.0	0.0	0.2	1.6	0.0	0.2	0.0	0.1	0.0	0.1
PETE Other	0.6	4.2	0.0	0.0	0.4	3.1	0.4	5.6	0.2	2.3	0.3	2.6
HDPE bottles	1.0	7.3	0.5	4.1	0.8	5.6	0.5	7.3	0.7	6.9	0.9	8.6
PVC	0.1	0.7	0.0	0.0	0.3	1.8	0.0	0.3	0.0	0.4	0.2	1.9
LDPE & PP Bottles	0.1	0.9	0.0	0.0	0.3	2.0	0.0	0.6	0.0	0.2	0.0	0.0
PS	0.7	4.8	0.0	0.0	1.1	8.2	0.5	7.2	0.5	5.6	0.8	7.6
Recyclable Film	1.0	7.0	0.0	0.0	1.8	12.6	1.2	17.5	1.2	12.9	1.6	15.4
Non-Recyclable Film	2.3	16.4	0.6	5.4	5.0	35.6	1.6	22.4	1.1	11.6	1.4	13.1
Total Film			1.7	15.4								
Wide Mouth Tubs & Lids	0.4	2.5	0.3	2.5	0.8	5.5	0.5	6.6	0.4	3.8	0.4	4.3
Other Containers	0.0	0.3	0.1	1.3	0.4	2.6	0.0	0.6	0.1	1.1	0.0	0.1
Other Plastics	1.4	9.9	1.2	11.0	0.7	4.8	1.7	24.0	1.2	12.8	1.8	17.0
Sub-total Plastics	8.2	58.1	5.1	45.9	12.3	87.6	6.9	100.2	5.7	59.7	8.0	76.8
3. METALS												
Aluminum Cans	0.9	6.7	0.0	0.0	1.1	8.0	0.6	8.9	0.6	6.5	0.8	7.6
Aluminum Foil Trays	0.1	1.1	0.0	0.0	0.4	3.1	0.2	2.3	0.2	2.5	0.2	2.4
Total Aluminum Materials			0.6	5.0								
Steel Cans	1.6	11.4	0.0	0.0	1.8	12.6	1.1	16.1	1.6	16.5	1.2	11.3
Total Ferrous Materials			0.9	7.8								
Aerosol Cans	0.2	1.4	0.1	0.8	0.3	1.9	0.0	0.6	0.2	1.7	0.0	0.4
Paint Cans	0.1	0.5	0.0	0.0	0.3	2.3	0.1	1.7	0.0	0.0	0.0	0.0
Other Metal	0.4	3.1	0.4	3.9	0.8	5.4	0.9	12.3	0.5	4.8	1.4	13.4
Sub-total Metals	3.4	24.1	2.0	17.5	4.7	33.3	2.9	41.9	3.1	32.0	3.7	35.1

Table 2a: Waste Audits Performed in the Summer Season (May - August)

Component and Description	North Glengary		Peterborough		Sault Ste. Marie		Mississauga		Brampton		Bolton	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS												
LCBO Clear	1.4	9.7	0.0	0.0	1.3	9.1	0.5	6.7	0.8	8.5	0.8	7.6
LCBO Coloured	1.9	13.4	0.0	0.0	1.2	8.9	0.5	7.7	0.7	7.6	2.3	21.7
Clear	3.1	21.8	0.0	0.0	2.6	18.6	2.0	28.3	2.1	22.3	3.0	28.5
Coloured	0.3	2.4	0.0	0.0	0.0	0.3	0.2	2.7	0.3	2.7	0.7	6.8
Total Clear Glass			3.7	33.0								
Total Coloured Glass			2.2	19.9								
Other Glass	0.3	2.3	0.7	5.9	0.6	4.0	0.5	7.3	0.3	2.6	0.6	5.9
Sub-total Glass	7.0	49.6	6.6	58.7	5.7	41.0	3.7	52.7	4.2	43.6	7.4	70.5
5. HSW												
Batteries	0.1	0.6	0.0	0.0	0.0	0.3	0.1	1.2	0.1	0.7	0.1	0.7
Paint	0.1	0.8	0.0	0.0	0.0	0.3	0.1	1.4	0.4	3.9	0.2	2.2
Motor Oil	0.2	1.4	0.0	0.0	0.3	1.8	0.0	0.0	0.3	2.9	0.0	0.0
Flammables	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other HSW	0.0	0.0	0.0	0.0	0.2	1.4	0.2	2.4	0.1	1.5	0.2	2.1
Total HHW			0.4	3.2								
Sub-total HSW	0.4	2.8	0.4	3.2	0.6	4.0	0.2	2.6	0.7	7.5	0.5	5.0
6. COMPOSTABLES												
Vegetable Food Waste	26.0	185.0	0.0	0.0	18.1	129.5	9.4	135.4	10.3	107.7	12.0	114.5
Animal Food Waste	1.2	8.6	0.0	0.0	4.1	29.5	10.4	149.8	11.8	123.2	14.1	134.7
Total Kitchen Waste			21.5	192.0								
Grass	5.5	39.2	0.0	0.0	5.3	38.0	4.1	58.7	8.7	91.3	0.4	4.2
Woody Yard Waste	2.2	15.8	0.0	0.0	2.8	20.1	4.8	69.4	6.2	64.7	0.9	8.9
Other Yard Waste	0.8	5.4	0.0	0.0	3.4	24.1	1.5	22.3	4.9	51.2	2.1	20.4
Total Yard Waste			29.3	262.2								
Animal waste	4.1	29.2	8.0	71.7	2.6	18.3	6.0	86.6	3.8	39.4	2.5	24.2
Wood ashes	0.2	1.6	0.0	0.0	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total Compostables	40.0	284.9	58.9	525.9	36.5	261.2	45.8	661.3	45.6	477.4	32.1	306.9
7. OTHER WASTE												
Textiles	2.4	16.9	1.5	13.3	3.4	24.5	1.3	18.4	1.3	14.0	2.7	25.4
Building Renovations	0.5	3.7	2.3	20.8	2.2	16.1	8.4	121.0	1.8	19.2	7.5	71.4
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sanitary Products	9.0	64.3	1.0	9.0	2.8	20.0	1.9	27.5	3.0	31.5	4.1	39.0
Electronics/Appliances	0.1	0.6	1.1	9.8	0.4	2.8	1.7	24.6	1.8	19.3	3.7	35.3
Rubber	0.1	0.5	0.0	0.0	0.1	0.5	0.4	5.2	0.1	0.9	0.0	0.1
Furniture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	34.9	0.0	0.0
Other	3.7	26.5	2.5	22.4	2.5	17.5	0.4	5.4	0.4	4.1	0.9	8.4
Sub-total Other Waste	15.8	112.5	8.4	75.4	11.4	81.4	14.0	202.1	11.8	123.8	18.8	179.7

Table 2b: Waste Audits Performed in the Fall Season (September - November)

Component and Description	Durham-Fall		Etobicoke		Scarborough		York		North York		Markham		Ottawa		Peterborough	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES																
Newspaper	9.3	104.9	11.8	177.1	13.0	113.5	8.2	79.7	23.6	302.1	0.0	0.0	19.1	158.6	0.0	0.0
Magazines & paperbacks	1.9	21.3	3.5	53.4	2.8	24.3	1.6	15.6	4.4	56.9	2.8	29.1	3.5	29.3	0.0	0.0
Phone Books	0.0	0.0	0.1	1.0	0.0	0.0	0.0	0.0	0.9	11.8	0.0	0.0	0.5	3.8	0.0	0.0
Total News and Phone											21.0	221.3				
Total News, Phone and Mags															16.4	131.0
Cardboard	2.2	24.7	2.9	43.3	1.2	10.4	5.2	50.0	2.9	36.8	2.8	29.1	3.9	32.2	1.4	11.6
Boxboard/Rolls	3.7	41.7	1.7	26.0	2.6	22.4	1.1	10.8	2.3	29.1	0.0	0.0	3.2	26.4	2.8	22.4
Mixed Papers	3.5	39.0	3.6	53.6	5.4	46.9	2.4	23.6	5.0	64.7	2.8	29.8	6.4	53.1	3.8	30.6
Molded Pulp	0.5	5.8	0.2	3.2	0.2	2.1	0.2	1.8	0.2	2.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Boxboard & Moulded Pulp											2.5	26.1				
Books	0.0	0.0	0.0	0.4	0.8	6.6	0.2	2.2	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Kraft Paper	0.7	8.4	0.2	3.7	0.5	4.2	0.2	2.3	1.6	19.9	0.0	0.0	0.0	0.0	0.0	0.0
Spiral Wound	0.1	1.3	0.1	0.8	0.2	1.5	0.2	1.8	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Tissue/Toweling	2.4	26.9	3.3	50.2	2.9	25.2	3.1	30.0	2.1	26.6	0.0	0.0	0.0	0.0	0.0	0.0
Other Paper	0.9	9.6	0.4	6.1	0.7	5.9	0.6	6.0	0.4	4.9	0.0	0.0	0.6	4.7	0.0	0.0
Gable Top Cartons	0.2	2.5	0.3	5.1	0.3	3.1	0.2	2.3	0.2	3.1	0.4	4.6	0.0	0.0	0.0	0.0
Aseptic Containers	0.1	1.1	0.0	0.5	0.1	0.5	0.0	0.2	0.1	1.2	0.0	0.0	0.4	3.4	0.1	0.5
Total Gable Top and Aseptic													0.3	2.4	0.4	3.6
Sub-total Paper Fibres	25.5	287.2	28.2	424.4	30.5	266.4	23.4	226.5	43.8	561.1	32.3	340.0	37.8	314.0	24.6	196.1
2. PLASTICS																
PETE Soft Drink	0.7	7.3	0.3	3.9	0.4	3.4	0.3	2.5	0.2	2.5	0.0	0.0	0.6	5.4	0.8	6.6
LCBO containers	0.0	0.0	0.1	1.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PETE Other	0.4	3.9	0.4	6.7	0.2	2.0	0.3	2.4	0.4	5.3	0.0	0.0	0.0	0.0	0.0	0.0
Total PETE Material											0.9	9.2				
HDPE bottles	0.7	7.7	0.3	4.7	1.0	8.5	0.7	6.6	0.6	8.1	0.5	5.1	0.5	4.5	0.5	3.6
PVC	0.0	0.3	0.3	3.8	0.1	0.8	0.1	1.0	0.0	0.1	0.0	0.0	0.1	0.6	0.0	0.0
LDPE & PP Bottles	0.1	1.3	0.4	5.6	0.0	0.3	0.1	1.0	0.2	2.1	0.0	0.0	1.0	8.6	0.0	0.0
PS	0.4	4.7	1.1	16.8	0.8	6.8	0.3	3.3	0.7	8.9	0.0	0.0	0.2	2.1	0.0	0.0
Recyclable Film	1.2	13.7	0.4	6.3	0.9	8.3	0.6	5.9	0.9	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Non-Recyclable Film	1.6	17.8	0.9	14.1	2.7	23.7	1.3	12.4	1.6	19.9	0.0	0.0	0.0	0.0	0.7	5.4
Total Film															1.4	11.3
Wide Mouth Tubs & Lids	0.2	1.8	0.5	7.2	0.1	1.2	0.2	1.9	0.1	1.8	0.0	0.0	0.0	0.0	0.3	2.2
Other Containers	0.5	5.7	0.3	4.0	0.7	6.4	0.1	0.5	0.5	6.6	0.0	0.0	0.1	1.0	0.2	1.5
Other Plastics	1.8	19.8	0.8	11.8	1.8	15.7	2.2	21.4	0.8	10.7	0.0	0.0	2.1	17.2	1.4	11.0
Sub-total Plastics	7.5	84.2	5.7	85.8	8.8	77.0	6.1	59.0	6.0	77.1	1.4	14.2	4.7	39.3	5.2	41.6
3. METALS																
Aluminum Cans	0.7	7.8	0.3	5.0	0.4	3.3	0.2	1.8	0.2	2.8	0.6	6.7	0.6	4.7	0.0	0.0
Aluminum Foil Trays	0.2	1.7	0.1	1.1	0.2	1.4	0.1	1.0	0.1	1.8	0.0	0.0	0.1	0.8	0.0	0.0
Total Aluminum Materials															0.8	6.2
Steel Cans	1.6	17.6	1.1	15.9	1.5	12.8	0.5	4.9	0.9	11.8	1.2	13.0	1.5	12.6	0.0	0.0
Total Ferrous Materials															1.4	11.3
Aerosol Cans	0.1	0.7	0.1	1.0	0.1	0.6	0.3	2.6	0.1	1.2	0.0	0.0	0.2	1.8	0.1	1.1
Paint Cans	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6	0.0	0.0	0.2	1.3	0.1	0.7
Other Metal	0.4	4.7	0.3	5.2	5.1	44.3	0.9	8.5	1.4	17.6	0.0	0.0	0.7	6.2	0.5	3.9
Sub-total Metals	2.9	32.8	1.9	28.1	7.1	62.4	2.0	18.9	2.9	36.7	1.9	19.7	3.3	27.3	2.9	23.2

Table 2b: Waste Audits Performed in the Fall Season (September - November)

Component and Description	Durham-Fall		Etobicoke		Scarborough		York		North York		Markham		Ottawa		Peterborough	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS																
LCBO Clear	0.8	9.1	0.6	9.6	1.3	11.8	1.2	12.0	0.5	6.1	0.0	0.0	0.0	0.0	0.0	0.0
LCBO Coloured	0.4	4.0	2.0	30.0	2.4	20.8	0.7	7.2	0.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Clear	1.4	15.4	1.5	23.0	1.3	11.0	2.5	24.6	2.0	25.1	3.4	35.6	0.0	0.0	0.0	0.0
Coloured	0.0	0.4	0.4	6.2	0.0	0.0	0.7	6.6	0.7	9.1	2.5	25.9	0.0	0.0	0.0	0.0
All Clear Glass													2.8	23.3	3.7	29.3
All Coloured Glass													2.6	21.5	2.9	23.3
Other Glass	0.6	6.5	1.2	18.7	2.2	19.0	0.9	8.9	0.3	3.4	0.0	0.0	0.1	1.1	0.7	5.5
Sub-total Glass	3.1	35.4	5.8	87.5	7.2	62.5	6.1	59.4	3.7	47.4	5.9	61.6	5.5	45.9	7.3	58.0
5. HSW																
Batteries	0.1	1.2	0.1	0.9	0.2	1.4	0.2	1.5	0.0	0.6	0.0	0.0	0.0	0.0		
Paint	0.0	0.0	1.3	19.3	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Motor Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0		
Flammables	0.0	0.0	0.0	0.7	0.1	0.9	0.1	0.9	0.1	0.9	0.0	0.0	0.0	0.0		
Other HSW	0.0	0.5	0.0	0.0	0.1	1.0	0.1	1.0	0.0	0.5	0.0	0.0	0.0	0.0		
All Household Special Waste													0.2	1.8	0.4	3.0
Sub-total HSW	0.2	1.7	1.4	20.8	0.6	5.0	0.5	5.1	0.2	2.0	0.0	0.0	0.2	1.8	0.4	3.0
6. COMPOSTABLES																
Vegetable Food Waste	13.6	153.2									0.0	0.0	0.0	0.0	0.0	0.0
Animal Food Waste	3.0	33.9									0.0	0.0	0.0	0.0	0.0	0.0
Total Kitchen Waste			23.9	360.2	23.8	207.9	14.5	140.1	24.3	311.0	22.1	232.5	29.0	241.3	22.8	182.0
Grass	8.8	99.6									0.0	0.0	0.0	0.0	0.0	0.0
Woody Yard Waste	2.1	24.0									0.0	0.0	0.0	0.0	0.0	0.0
Other Yard Waste	19.8	223.2									0.0	0.0	0.0	0.0	0.0	0.0
Total Yard Waste*			16.1	243.0	0.5	4.1	12.5	120.7	5.7	73.5	12.7	251.4	0.0	0.0	20.4	162.7
Animal waste	4.6	52.2	2.2	32.6	5.8	50.5	1.8	17.4	0.5	6.6	0.0	0.0	0.0	0.0	8.3	66.4
Wood ashes	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total Compostables	52.1	586.2	42.2	635.8	30.0	262.5	28.8	278.1	30.5	391.0	34.8	366.2	37.8	314.6	51.6	411.1
7. OTHER WASTE																
Textiles	3.2	36.1	1.5	22.2	5.3	46.3	4.8	46.1	0.9	11.4	0.0	0.0	1.7	14.4	1.4	11.5
Building Renovations	0.6	7.1	10.2	153.9	3.1	27.1	15.9	153.4	9.4	120.6	0.0	0.0	2.2	18.0	1.3	10.4
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.0	0.0
Sanitary Products	4.0	44.5	3.0	46.0	2.9	25.6	2.6	24.7	0.3	3.4	0.0	0.0	1.8	15.0	2.0	16.2
Electronics/Appliances	0.3	3.8	0.0	0.0	3.0	26.6	5.1	49.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.3
Rubber	0.0	0.0	0.0	0.7	0.1	0.8	0.2	1.7	1.0	13.0	0.0	0.0	0.5	4.4	0.0	0.0
Furniture	0.0	0.0	0.0	0.0	0.0	0.0	4.6	44.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.6	7.0	0.1	2.0	1.3	11.7	0.0	0.1	1.4	17.9	23.7	249.7	4.3	36.0	2.8	22.1
Sub-total Other Waste	8.8	98.5	14.9	224.7	15.8	138.2	33.1	319.9	13.0	166.4	23.7	249.7	10.6	88.5	8.1	64.5
8. CONTAMINATION																
Other Rigid Plastic											0.2	1.8				
Non Recyclable Paper											0.2	2.0				
Plastic Bags											0.0	0.3				
Blue/Green/ Garage Bags											0.3	3.0				
Other Contamination											1.5	15.5				
Sub-total Contamination											49.6	522.0				
TOTAL	100.0	1126.1	100.0	1507.0							100.0	1051.4	100.0	831.5	100.0	797.4

* Markham Yard waste was included in the "Garbage" category and was picked up only once during the sampling period.

Table 2c: Waste Audits Performed in the Winter Season (November - March)

<i>and Description</i>	Durham		Simcoe		Sudbury		Bolton		Brampton		Mississauga	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES												
Newspaper	10.7	93.4	11.8	151.2	11.1	92.6	13.8	154.1	13.2	148	13.7	176.2
Magazines & paperbacks	3.0	26.3	2.6	32.8	1.8	15.2	1.2	13.9	2.6	30	2.1	26.6
Phone Books	0.1	0.5	0.2	2.2	0.1	0.9	0.2	2.6	0.2	2	0.1	1.5
Cardboard	3.2	28.5	4.4	55.7	3.6	29.8	3.5	38.6	2.7	30	4.2	54.3
Boxboard/Rolls	4.7	41.0	4.7	60.1	3.7	31.3	3.1	34.4	2.7	30	3.2	41.1
Mixed Papers	6.1	53.1	2.0	26.0	3.7	30.6	3.1	34.4	3.2	36	3.3	42.3
Molded Pulp	0.2	2.1	0.5	5.9	0.2	1.8	0.2	2.7	0.2	3	0.3	3.4
Books	0.1	0.6	0.0	0.2	0.4	3.0	0.2	2.3	0.9	10	0.3	3.3
Kraft Paper	0.6	5.7	0.6	7.3	0.5	4.1	0.3	3.9	0.4	5	0.3	4.4
Spiral Wound	0.2	2.0	0.2	2.8	0.1	0.7	0.2	2.5	0.2	2	0.1	1.7
Tissue/Toweling	3.2	28.2	3.3	41.7	2.5	21.2	2.9	32.7	2.3	26	2.6	33.7
Other Paper	0.8	7.3	1.7	21.9	0.7	6.1	0.7	7.8	0.9	10	0.9	11.4
Gable Top Cartons	0.3	2.5	0.4	4.8	0.2	1.8	0.5	5.9	0.3	3	0.2	2.6
Aseptic Containers	0.1	1.2	0.2	1.9	0.0	0.4	0.1	1.2	0.1	1	0.1	1.0
Sub-total Paper Fibres	33.4	292.3	32.4	414.5	28.7	239.6	30.2	336.9	29.9	336	31.4	403.5
2. PLASTICS												
PETE Soft Drink	0.6	5.6	1.1	13.5	0.4	3.7	0.2	2.1	0.3	3	0.4	5.6
LCBO containers	0.0	0.1	0.1	0.9	0.0	0.0	0.0	0.1	0.1	1	0.0	0.0
PETE Other	0.6	5.5	0.1	1.7	0.5	4.0	0.7	8.3	0.6	6	0.6	7.3
HDPE bottles	0.9	7.6	0.6	8.1	0.6	5.1	0.6	6.3	0.7	8	0.5	6.3
PVC	0.0	0.2	0.1	0.9	0.0	0.2	0.3	3.4	0.3	3	0.1	1.9
LDPE & PP Bottles	0.0	0.4	0.2	2.2	0.1	0.9	0.1	0.7	0.2	3	0.1	1.4
PS	0.4	3.9	0.7	8.9	0.2	1.7	0.5	5.0	0.6	7	0.5	6.5
Recyclable Film	1.7	15.3	1.6	20.2	0.8	6.4	1.6	17.9	1.5	17	1.4	17.5
Non-Recyclable Film	6.5	56.6	2.8	36.0	1.7	13.8	2.1	23.1	1.9	21	1.7	21.5
Wide Mouth Tubs & Lids	0.4	3.2	0.4	5.3	0.3	2.4	0.6	6.4	0.6	7	0.6	7.2
Other Containers	0.4	3.5	0.3	3.3	0.5	4.3	0.1	1.1	0.2	2	0.1	1.1
Other Plastics	1.2	10.3	1.7	21.3	1.3	11.2	0.8	8.7	0.8	9	0.5	6.7
Sub-total Plastics	12.8	112.1	9.6	122.3	6.4	53.8	7.3	81.8	7.5	84	6.3	81.3
3. METALS												
Aluminum Cans	0.8	7.0	0.7	9.3	1.2	9.8	0.5	5.2	0.7	8	0.7	9.4
Aluminum Foil Trays	0.2	1.5	0.3	4.1	0.1	0.9	0.2	1.8	0.3	3	0.2	2.0
Steel Cans	2.6	23.1	2.4	31.0	2.6	21.3	1.4	15.3	1.8	20	1.6	19.9
Aerosol Cans	0.1	1.3	0.1	1.6	0.2	2.0	0.1	0.9	0.2	2	0.1	0.7
Paint Cans	0.4	3.2	0.1	1.5	0.2	1.6	0.0	0.1	0.1	1	0.1	1.4
Other Metal	0.3	2.3	0.9	11.1	1.0	8.1	1.2	13.3	1.4	15	0.8	10.0
Sub-total Metals	4.4	38.3	4.6	58.6	5.2	43.7	3.3	36.5	4.3	48	3.4	43.2

Table 2c: Waste Audits Performed in the Winter Season (November - March)

Component and Description	Durham		Simcoe		Sudbury		Bolton		Brampton		Mississauga	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS												
LCBO Clear	0.8	7.2	1.9	24.1	1.3	10.7	0.4	4.0	0.7	7	0.4	5.0
LCBO Coloured	0.4	3.3	1.0	13.1	0.6	5.2	2.7	30.5	0.8	9	1.1	13.9
Clear	1.4	12.7	2.8	35.8	2.2	18.6	2.7	29.6	2.4	28	2.4	30.7
Coloured	0.3	2.4	0.4	4.7	0.3	2.5	0.2	2.6	0.2	3	0.5	6.2
Other Glass	0.7	6.4	0.6	7.3	0.6	5.1	1.2	13.1	0.8	9	0.6	7.5
Sub-total Glass	3.6	32.0	6.7	85.0	5.0	42.1	6.8	76.0	4.8	55	4.9	62.5
5. HSW												
Batteries	0.2	1.4	0.0	0.4	0.1	0.5	0.1	0.6	0.1	1	0.1	0.9
Paint	0.7	5.9	0.0	0.2	0.3	2.3	0.0	0.3	0.0	1	0.1	1.5
Motor Oil	0.0	0.0	0.2	2.7	0.0	0.0	0.0	0.1	0.0	0	0.0	0.0
Flammables	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
Other HSW	0.1	0.8	0.4	5.7	0.0	0.3	0.3	3.3	0.4	5	0.2	2.4
Sub-total HSW	0.9	8.2	0.7	9.3	0.4	3.1	0.1	1.0	0.6	7	0.4	4.8
6. COMPOSTABLES												
Vegetable Food Waste	13.7	120.3	17.4	222.7	0.0	0.0	11.4	126.8	10.3	116.0	7.5	96.5
Animal Food Waste	7.5	65.7	5.4	68.7	0.0	0.0	10.0	111.7	13.2	149.2	9.3	119.4
Total Kitchen Waste					25.8	215.8						
Grass	0.4	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0	1.3	17.2
Woody Yard Waste	2.1	18.7	0.0	0.0	0.0	0.0	0.6	6.2	0.5	5.3	0.6	8.2
Other Yard Waste	3.2	28.3	1.0	12.4	0.0	0.0	11.5	128.5	4.3	48.3	14.6	187.3
Total Yard Waste					10.1	84.4						
Animal waste	5.4	47.2	12.2	155.8	2.3	18.9	2.4	27.0	3.9	44.0	3.5	44.8
Wood ashes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.2	2.3
Sub-total Compostables	32.4	283.8	36.0	459.5	38.2	319.2	35.9	400.1	32.1	362.8	37.0	475.7
7. OTHER WASTE												
Textiles	3.2	27.7	3.7	47.5	4.2	34.7	2.3	25.9	2.8	31.6	1.6	20.3
Building Renovations	1.5	13.5	1.2	15.2	6.0	50.4	7.0	78.6	6.9	77.4	7.0	89.6
White Goods	1.4	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	21.7
Sanitary Products	4.6	40.7	2.8	35.2	2.3	18.9	2.9	32.0	4.9	54.8	2.6	33.7
Electronics/Appliances	0.6	5.3	0.6	7.9	1.3	10.9	1.1	12.5	2.9	32.3	1.7	22.4
Rubber	0.0	0.2	0.1	0.9	0.1	0.6	0.1	0.6	0.1	1.6	0.0	0.6
Furniture	0.0	0.0	0.0	0.5	1.0	8.2	0.0	0.0	2.3	26.3	1.3	17.1
Other	1.1	9.5	1.7	21.1	1.2	9.9	3.0	33.7	1.1	13.0	0.7	9.4
Sub-total Other Waste	12.5	109.3	10.1	128.4	16.0	133.6	16.4	183.3	21.0	236.9	16.7	214.6

Table 2c: Waste Audits Performed in the Winter Season (November - March)

Table 2c continued: Waste Audits Performed in the Winter Season (November - March)

Component and Description	Ottawa		Brantford		Barrie	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES						
Newspaper	20.1	157.1	6.0	66.1	15.9	127.2
Magazines & paperbacks	3.5	27.3	2.9	25.3	7.7	61.0
Phone Books	0.3	2.4	0.2	1.7	0.7	5.7
Cardboard	2.8	21.7	1.4	15.4	2.6	21.0
Boxboard/Rolls	3.4	26.7	3.0	33.2	4.7	37.3
Mixed Papers	4.8	37.3	1.9	20.6	3.9	31.1
Molded Pulp	0.0	0.0	0.2	1.8	0.0	0.0
Books	0.0	0.0	0.9	0.6	0.0	0.0
Kraft Paper	0.0	0.0	0.5	4.9	0.0	0.0
Spiral Wound	0.0	0.0	0.2	2.6	0.0	0.0
Tissue/Toweling	0.0	0.0	1.3	14.5	3.9	31.5
Other Paper	2.2	17.2	1.4	19.0	1.0	7.9
Gable Top Cartons	0.0	0.0	0.2	2.0	0.3	2.2
Aseptic Containers	0.1	1.0	0.0	0.5	0.1	0.5
Total Gable Top and Aseptic Containers	0.3	2.0				
Sub-total Paper Fibres	37.4	292.8	20.1	208.2	40.8	325.3
2. PLASTICS						
PETE Soft Drink	0.8	6.6	0.3	3.0	0.0	0.0
LCBO containers	0.0	0.0	0.0		0.0	0.0
PETE Other	0.0	0.0	0.2	2.1	0.0	0.0
Total PETE Materials					0.7	5.8
HDPE bottles	0.7	5.4	0.5	5.2	1.1	9.0
PVC	0.1	0.6	0.0	0.7	0.0	0.0
LDPE & PP Bottles	1.5	12.0	0.2	2.3	0.0	0.0
PS	0.6	4.6	0.4	4.0	0.0	0.0
Recyclable Film	0.0	0.0	1.1	11.9	3.9	31.4
Non-Recyclable Film	0.0	0.0	0.8	8.8	0.0	0.0
Wide Mouth Tubs & Lids	0.0	0.0	0.0	0.0	0.0	0.0
Other Containers	0.2	1.7	0.0	0.3	0.0	0.0
Other Plastics	1.7	13.4	1.1	11.8	2.7	21.5
Sub-total Plastics	5.7	44.4	4.5	50.0	8.5	67.6
3. METALS						
Aluminum Cans	0.7	5.5	0.4	5.4	1.1	9.2
Aluminum Foil Trays	0.1	0.7	0.1	1.0	0.5	4.2
Steel Cans	1.8	14.1	1.2	13.0	2.4	18.8
Aerosol Cans	0.1	0.8	0.1	1.5	0.2	1.6
Paint Cans	0.0	0.1	0.1	1.6	0.0	0.0
Other Metal	0.2	1.7	0.7	8.0	0.2	1.6
Sub-total Metals	2.9	23.0	2.7	30.5	4.4	35.4

Table 2c: Waste Audits Performed in the Winter Season (November - March)

Component and Description	Ottawa		Brantford		Barrie	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS						
LCBO Clear	0.0	0.0	0.0			
LCBO Coloured	0.0	0.0	0.0			
Total LCBO					2.2	17.5
Clear	0.0	0.0	0.0			
Coloured	0.0	0.0	0.0			
Total non-LCBO					2.8	22.3
Total Food and Beverage Containers				33.4		
All Clear Glass	3.2	25.4				
All Coloured Glass	2.1	16.2				
Other Glass	0.5	4.1	0.2		0.6	4.5
Sub-total Glass	5.8	45.6	3.3	33.4	5.6	44.3
5. HSW						
Batteries	0.0	0.0	0.0	0.3	0.1	0.5
Paint	0.0	0.0	0.5	5.1	0.1	0.8
Motor Oil	0.0	0.0	0.0		0.0	0.0
Flammables	0.0	0.0	0.0		0.0	0.0
All Household Special Waste	0.2	1.3				
Other HSW	0.0	0.0	0.1	1.4	0.2	1.9
Sub-total HSW	0.2	1.3	0.6	6.9	0.4	3.2
6. COMPOSTABLES						
Vegetable Food Waste	0.0	0.0	0.0		0.0	0.0
Animal Food Waste	0.0	0.0	0.0		0.0	0.0
Total Kitchen Waste	30.2	236.4	23.7	259.1	19.6	156.5
Grass	0.0	0.0	0.0		0.0	0.0
Woody Yard Waste	0.0	0.0	0.0		0.0	0.0
Other Yard Waste	0.0	0.0	0.0		0.0	0.0
Total Yard Waste	1.1	8.3	15.2	166.4	1.6	12.8
Animal waste	0.0	0.0	4.4	48.1	7.3	58.5
Wood ashes	0.0	0.0	0.0		0.0	0.0
Sub-total Compostables	31.3	244.7	43.3	473.5	28.6	227.7
7. OTHER WASTE						
Textiles	1.1	9.0	2.6	28.2	2.6	20.7
Building Renovations	3.4	26.8	3.0	33.2	3.4	27.1
White Goods	0.0	0.1	0.0		0.5	3.8
Sanitary Products	3.6	28.2	0.4	4.9	3.6	28.8
Electronics/Appliances	0.0	0.0	0.3	3.1	0.0	0.0
Rubber	0.0	0.0	0.0		0.0	0.0
Furniture	0.0	0.0	0.0		0.0	0.0
Other	8.5	66.8	1.7	18.3	1.7	13.5
Sub-total Other Waste	16.7	130.9	8.0	87.7	11.8	93.8

3.1 Summer

The percent ranges were calculated without including Peterborough's summer audit because the leaf and yard waste component is large and skews the data by giving the *compostables* section a relatively high percentage. As a result, Peterborough's other waste components show low percentages of total waste.

In the *plastics* section Sault Ste. Marie has a higher than average percentage of total waste derived from Non-Recyclable Film. This is confirmed by the high kg/hh/yr value for this category. Thus the *plastics subtotal* for Sault Ste. Marie is not included in calculating the percent range for this section.

Under the *Other Waste Materials* section Bolton has a higher than average percent subtotal that is probably due to the fact that one of the areas surveyed in this audit was a community of new townhouses. Since, this is not typical of a single family established residence, it is not included to find the percent range.

3.2 Fall

North York has a particularly high component of its subtotal *Paper Fibres* derived from newspaper. In fact, the kg/hh/yr amount is considerably higher than the other fall audits. In consultation with the City of Toronto the validity of these data was confirmed but is not explainable at this time. Therefore, it was not included in the percent range for this section.

Two municipalities provided data that seems unrepresentative of the normal amount in the *other waste materials* section. York has the largest amount of appliances, and furniture. No other municipality in the fall reported a measurable amount of furniture. Markham has a large amount of uncategorized (other) waste in this section. With such a large portion of the waste being uncategorized, the percent total waste for the smaller weight sections are drastically reduced. One such smaller weight section is the *plastics* subtotal (1.4%), however the kg/hh/yr data for *plastics* reveals that Markham is within the normal range. Therefore, the percent of total waste has been skewed by the large amount of uncategorized (other) waste. Both the Markham and York data were not used to find the % total waste ranges.

3.3 Winter

In the *plastics* section Durham has a higher percentage of total waste derived from Non-Recyclable Film. This is confirmed by the high kg/hh/yr value for this category. Also, the value reported in the winter survey is triple the value in Durham's fall survey. Thus, the *plastics subtotal* for Durham is not included in calculating the percent range for this section.

The City of Barrie conducted a separate yard and leaf waste survey (not included in the presented data). This decreases the percent total in the *compostables* section and decreases the total weight of waste. As a result, any large amount of waste will contribute a greater percent total. This is particularly true for the *paper fibres* section for Barrie where the percent total waste is significantly higher.

Under the *Other Waste Materials* section Brampton has a high percent subtotal that skews the percent of total [waste] data and, therefore, is not included in calculating the percent ranges.

3.4 Summary Results by Season

Table 3 below summarizes the total percentage of waste ranges for each of the seven major categories by season.

Table 3. Summary of Percent Ranges of Total Waste for the Seven Major Categories by Season

Waste Categories	Summer	Fall	Winter
Paper Fibres	24 – 30%	24 – 38%	29 – 33%
Plastics	5 – 8%	5 – 9%	6 – 10%
Metals	3 – 5%	2 – 7%	3 – 5%
Glass	3 – 8%	3 – 8%	5 – 7%
Household Special Waste	0.2 – 0.7%	0.2 – 1.4%	0.1 – 0.7%
Compostables	40 – 46%	30 – 52%	31 – 39%
Other Waste Materials	12 – 16%	8 – 16%	10 – 17%

A review of Table 3 reveals several general points. First, regardless of the season, *household special waste* is a very small component of the total waste collected. Second, the percent range for *compostables* has a higher value in the summer and the fall, probably due to yard and leaf waste collection. Generally *plastics*, *metals*, *glass*, and *other waste materials* ranges do not vary significantly with season. *Compostables* and *paper fibres* constitute the majority of the total waste picked up.

The second classification used to compare the data are population size. Using population data obtained from the 2000 Ontario Municipal Directory (except for Toronto which was obtained from the Toronto Access Line), the municipalities were divided into three population sizes: 1) <100,000; 2) 100,000 to 500,000; and 3) > 500,000. Table 4 (a, b, and c) on the following six pages contains the percent of total [waste], and kg/hh/yr for each of the three population sizes.

3.5 Population < 100,000

Data from the following municipalities was not used for the same reasons as outlined in the season section (Section 2) above: Sault St. Marie (Summer); Peterborough (Summer); Barrie; and Bolton (Summer).

3.6 Population 100,000 to 500,000

Durham (Winter) and Markham (Fall) data are not included in determining the total percent ranges for the same reasons as given in the season section (Section 2).

3.7 Population >500,000

Although the Region of Ottawa-Carleton conducted a separate yard and leaf waste survey the subtotal percentage for the compostables section is not unusual and was, therefore, included.

York and North York data are not included in determining the total percent ranges for the same reasons outlined in the season section.

Table 4a: Municipalities With Populations < 100,000

Component and Description	Sault Ste. Marie		North Glengarry		Peterborough-Su		Peterborough-Fall		Barrie		Brantford		Bolton-Summer		Bolton-Winter	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES																
Newspaper	9.2	65.7	8.2	58.5	0.0	0.0	0.0	0.0	15.9	127.2	7.1	66.1	12.1	115.5	13.8	154.1
Magazines & paperbacks	1.8	13.1	2.9	20.3	0.0	0.0	0.0	0.0	7.7	61.0	3.4	25.3	1.1	10.6	1.2	13.9
Phone Books	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	5.7	0.2	1.7	0.2	2.1	0.2	2.6
Total Newspaper, Phonebooks and Magazines					10.4	92.9	16.4	131.0								
Cardboard	3.1	22.1	3.8	27.0	3.1	27.3	1.4	11.6	2.6	21.0	1.7	15.4	3.1	29.4	3.5	38.6
Boxboard/Rolls	5.0	35.8	4.0	28.8	2.5	21.9	2.8	22.4	4.7	37.3	3.6	33.2	3.8	36.5	3.1	34.4
Mixed Papers	3.9	27.6	1.8	12.5	2.7	24.4	3.8	30.6	3.9	31.1	2.2	20.6	2.9	27.8	3.1	34.4
Molded Pulp	0.4	2.7	0.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.8	0.2	1.7	0.2	2.7
Books	0.2	1.3	0.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.0	0.0	0.2	2.3
Kraft Paper	1.2	8.5	0.8	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.9	0.1	0.7	0.3	3.9
Spiral Wound	0.2	1.4	0.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.6	0.1	0.5	0.2	2.5
Tissue/Toweling	3.0	21.3	2.0	14.4	0.0	0.0	0.0	0.0	3.9	31.5	1.6	14.5	3.4	32.6	2.9	32.7
Other Paper	0.3	2.3	0.7	4.7	0.0	0.0	0.0	0.0	1.0	7.9	1.7	19.0	2.0	19.2	0.7	7.8
Gable Top Cartons	0.5	3.2	0.4	2.9	0.0	0.0	0.0	0.0	0.3	2.2	0.2	2.0	0.6	5.8	0.5	5.9
Aseptic Containers	0.0	0.2	0.1	0.7	0.0	0.3	0.1	0.5	0.1	0.5	0.0	0.5	0.1	0.7	0.1	1.2
Total Gable Top and Aseptic Containers					0.4	3.3	0.4	3.6								
Sub-total Paper Fibres	28.9	206.4	25.3	180.2	18.7	166.8	24.6	196.1	40.8	325.3	23.8	208.2	29.6	283.1	30.2	336.9
2. PLASTICS																
PETE Soft Drink	0.6	4.3	0.6	4.1	0.7	6.2	0.8	6.6	0.0	0.0	0.3	3.0	0.8	7.9	0.2	2.1
LCBO containers	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
PETE Other	0.4	3.1	0.6	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.1	0.3	2.6	0.7	8.3
Total PETE Materials								0.7	5.8							
HDPE bottles	0.8	5.6	1.0	7.3	0.5	4.1	0.5	3.6	1.1	9.0	0.6	5.2	0.9	8.6	0.6	6.3
PVC	0.3	1.8	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	1.9	0.3	3.4
LDPE & PP Bottles	0.3	2.0	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3	0.0	0.0	0.1	0.7
PS	1.1	8.2	0.7	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.0	0.8	7.6	0.5	5.0
Recyclable Film	1.8	12.6	1.0	7.0	0.0	0.0	0.0	0.0	3.9	31.4	1.3	11.9	1.6	15.4	1.6	17.9
Non-Recyclable Film	5.0	35.6	2.3	16.4	0.6	5.4	0.7	5.4	0.0	0.0	1.0	8.8	1.4	13.1	2.1	23.1
Total Film					1.7	15.4	1.4	11.3								
Wide Mouth Tubs & Lids	0.8	5.5	0.4	2.5	0.3	2.5	0.3	2.2	0.0	0.0	0.0	0.0	0.4	4.3	0.6	6.4
Other Containers	0.4	2.6	0.0	0.3	0.1	1.3	0.2	1.5	0.0	0.0	0.0	0.3	0.0	0.1	0.1	1.1
Other Plastics	0.7	4.8	1.4	9.9	1.2	11.0	1.4	11.0	2.7	21.5	1.3	11.8	1.8	17.0	0.8	8.7
Sub-total Plastics	12.3	87.6	8.2	58.1	5.1	45.9	5.2	41.6	8.5	67.6	5.3	50.0	8.0	76.8	7.3	81.8
3. METALS																
Aluminum Cans	1.1	8.0	0.9	6.7	0.0	0.0	0.0	0.0	1.1	9.2	0.5	5.4	0.8	7.6	0.5	5.2
Aluminum Foil Trays	0.4	3.1	0.1	1.1	0.0	0.0	0.0	0.0	0.5	4.2	0.1	1.0	0.2	2.4	0.2	1.8
Total Aluminum Materials					0.6	5.0	0.8	6.2								
Steel Cans	1.8	12.6	1.6	11.4	0.0	0.0	0.0	0.0	2.4	18.8	1.4	13.0	1.2	11.3	1.4	15.3
Total Ferrrous Materials					0.9	7.8	1.4	11.3								
Aerosol Cans	0.3	1.9	0.2	1.4	0.1	0.8	0.1	1.1	0.2	1.6	0.2	1.5	0.0	0.4	0.1	0.9
Paint Cans	0.3	2.3	0.1	0.5	0.0	0.0	0.1	0.7	0.0	0.0	0.1	1.6	0.0	0.0	0.0	0.1
Other Metal	0.8	5.4	0.4	3.1	0.4	3.9	0.5	3.9	0.2	1.6	0.9	8.0	1.4	13.4	1.2	13.3
Sub-total Metals	4.7	33.3	3.4	24.1	2.0	17.5	2.9	23.2	4.4	35.4	3.2	30.5	3.7	35.1	3.3	36.5

Table 4a: Municipalities With Populations < 100,000

4. GLASS																	
LCBO Clear	1.3	9.1	1.4	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	7.6	0.4	4.0
LCBO Coloured	1.2	8.9	1.9	13.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	21.7	2.7	30.5
Total LCBO										2.2	17.5						
Clear	2.6	18.6	3.1	21.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	28.5	2.7	29.6
Coloured	0.0	0.3	0.3	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	6.8	0.2	2.6
Total non-LCBO										2.8	22.3						
Total Clear Glass					3.7	33.0	3.7	29.3									
Total Coloured Glass					2.2	19.9	2.9	23.3									
Total Food and Beverage Containers												3.6	33.4				
Other Glass	0.6	4.0	0.3	2.3	0.7	5.9	0.7	5.5	0.6	4.5	0.3	0.0	0.0	0.6	5.9	1.2	13.1
Sub-total Glass	5.7	41.0	7.0	49.6	6.6	58.7	7.3	58.0	5.6	44.3	3.9	33.4	7.4	70.5	6.8	76.0	
5. HOUSEHOLD SPECIAL WASTES																	
Batteries	0.0	0.3	0.1	0.6	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.3	0.1	0.7	0.1	0.6	
Paint	0.0	0.3	0.1	0.8	0.0	0.0	0.0	0.0	0.1	0.8	0.6	5.1	0.2	2.2	0.0	0.3	
Motor Oil	0.3	1.8	0.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Flammables	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other HSW	0.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.9	0.2	1.4	0.2	2.1	0.3	3.3	
Total HHW					0.4	3.2	0.4	3.0									
Sub-total HSW	0.6	4.0	0.4	2.8	0.4	3.2	0.4	3.0	0.4	3.2	0.7	6.9	0.5	5.0	0.1	1.0	
6. COMPOSTABLES																	
Vegetable Food Waste	18.1	129.5	26.0	185.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	114.5	11.4	126.8	
Animal Food Waste	4.1	29.5	1.2	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.1	134.7	10.0	111.7	
Total Kitchen Waste					21.5	192.0	22.8	182.0	19.6	156.5	28.0	259.1					
Grass	5.3	38.0	5.5	39.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.2	0.0	0.0	
Woody Yard Waste	2.8	20.1	2.2	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	8.9	0.6	6.2	
Other Yard Waste	3.4	24.1	0.8	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	20.4	11.5	128.5	
Total Yard Waste					29.3	262.2	20.4	162.7	1.6	12.8	18.0	166.4					
Animal waste	2.6	18.3	4.1	29.2	8.0	71.7	8.3	66.4	7.3	58.5	5.2	48.1	2.5	24.2	2.4	27.0	
Wood ashes	0.2	1.6	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Sub-total Compostables	36.5	261.2	40.0	284.9	58.9	525.9	51.6	411.1	28.6	227.7	51.2	473.5	32.1	306.9	35.9	400.1	
7. OTHER WASTE MATERIALS																	
Textiles	3.4	24.5	2.4	16.9	1.5	13.3	1.4	11.5	2.6	20.7	3.1	28.2	2.7	25.4	2.3	25.9	
Building Renovations	2.2	16.1	0.5	3.7	2.3	20.8	1.3	10.4	3.4	27.1	3.6	33.2	7.5	71.4	7.0	78.6	
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.8	0.0	0.0	0.0	0.0	0.0	0.0	
Sanitary Products	2.8	20.0	9.0	64.3	1.0	9.0	2.0	16.2	3.6	28.8	0.5	4.9	4.1	39.0	2.9	32.0	
Electronics/Appliances	0.4	2.8	0.1	0.6	1.1	9.8	0.5	4.3	0.0	0.0	0.3	3.1	3.7	35.3	1.1	12.5	
Rubber	0.1	0.5	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	
Furniture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other	2.5	17.5	3.7	26.5	2.5	22.4	2.8	22.1	1.7	13.5	2.0	18.3	0.9	8.4	3.0	33.7	
Sub-total Other Waste Materials	11.4	81.4	15.8	112.5	8.4	75.4	8.1	64.5	11.8	93.8	9.5	87.7	18.8	179.7	16.4	183.3	

Table 4b: Municipalities With Populations of 100,000 - 500,000

Component and Description	Durham-Fall		Durham-Winter		Etobicoke		Markham		Simcoe		Brampton-Summer		Brampton-Winter	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES														
Newspaper	9.3	104.9	10.7	93.4	11.8	177.1			11.8	151.2	11.9	124.6	13.2	148
Magazines & paperbacks	1.9	21.3	3.0	26.3	3.5	53.4	2.8	29.1	2.6	32.8	1.5	15.7	2.6	30
Phone Books	0.0	0.0	0.1	0.5	0.1	1.0			0.2	2.2	0.3	3.2	0.2	2
Total Newspaper and Phone Books							21.0	221.3						
Cardboard	2.2	24.7	3.2	28.5	2.9	43.3	2.8	29.1	4.4	55.7	2.9	30.8	2.7	30
Boxboard/Rolls	3.7	41.7	4.7	41.0	1.7	26.0	0.0	0.0	4.7	60.1	3.1	32.8	2.7	30
Mixed Papers	3.5	39.0	6.1	53.1	3.6	53.6	2.8	29.8	2.0	26.0	3.2	33.5	3.2	36
Molded Pulp	0.5	5.8	0.2	2.1	0.2	3.2	0.0	0.0	0.5	5.9	0.2	2.4	0.2	3
Total Boxboard and Moulded Pulp							2.5	26.1						
Books	0.0	0.0	0.1	0.6	0.0	0.4	0.0	0.0	0.0	0.2	0.4	4.0	0.9	10
Kraft Paper	0.7	8.4	0.6	5.7	0.2	3.7	0.0	0.0	0.6	7.3	0.1	0.7	0.4	5
Spiral Wound	0.1	1.3	0.2	2.0	0.1	0.8	0.0	0.0	0.2	2.8	0.1	0.6	0.2	2
Tissue/Toweling	2.4	26.9	3.2	28.2	3.3	50.2	0.0	0.0	3.3	41.7	2.9	30.1	2.3	26
Other Paper	0.9	9.6	0.8	7.3	0.4	6.1	0.0	0.0	1.7	21.9	1.9	20.1	0.9	10
Gable Top Cartons	0.2	2.5	0.3	2.5	0.3	5.1	0.4	4.6	0.4	4.8	0.3	3.0	0.3	3
Aseptic Containers	0.1	1.1	0.1	1.2	0.0	0.5	0.0	0.0	0.2	1.9	0.1	0.7	0.1	1
Sub-total Paper Fibres	25.5	287.2	33.4	292.3	28.2	424.4	32.3	340.0	32.4	414.5	28.9	302.4	29.9	336
2. PLASTICS														
PETE Soft Drink	0.7	7.3	0.6	5.6	0.3	3.9	0.0	0.0	1.1	13.5	0.6	6.7	0.3	3
LCBO containers	0.0	0.0	0.0	0.1	0.1	1.0	0.0	0.0	0.1	0.9	0.0	0.1	0.1	1
PETE Other	0.4	3.9	0.6	5.5	0.4	6.7	0.0	0.0	0.1	1.7	0.2	2.3	0.6	6
Total PETE Materials							0.9	9.2						
HDPE bottles	0.7	7.7	0.9	7.6	0.3	4.7	0.5	5.1	0.6	8.1	0.7	6.9	0.7	8
PVC	0.0	0.3	0.0	0.2	0.3	3.8	0.0	0.0	0.1	0.9	0.0	0.4	0.3	3
LDPE & PP Bottles	0.1	1.3	0.0	0.4	0.4	5.6	0.0	0.0	0.2	2.2	0.0	0.2	0.2	3
PS	0.4	4.7	0.4	3.9	1.1	16.8	0.0	0.0	0.7	8.9	0.5	5.6	0.6	7
Recyclable Film	1.2	13.7	1.7	15.3	0.4	6.3	0.0	0.0	1.6	20.2	1.2	12.9	1.5	17
Non-Recyclable Film	1.6	17.8	6.5	56.6	0.9	14.1	0.0	0.0	2.8	36.0	1.1	11.6	1.9	21
Wide Mouth Tubs & Lids	0.2	1.8	0.4	3.2	0.5	7.2	0.0	0.0	0.4	5.3	0.4	3.8	0.6	7
Other Containers	0.5	5.7	0.4	3.5	0.3	4.0	0.0	0.0	0.3	3.3	0.1	1.1	0.2	2
Other Plastics	1.8	19.8	1.2	10.3	0.8	11.8	0.0	0.0	1.7	21.3	1.2	12.8	0.8	9
Sub-total Plastics	7.5	84.2	12.8	112.1	5.7	85.8	1.4	14.2	9.6	122.3	5.7	59.7	7.5	84
3. METALS														
Aluminum Cans	0.7	7.8	0.8	7.0	0.3	5.0	0.6	6.7	0.7	9.3	0.6	6.5	0.7	8
Aluminum Foil Trays	0.2	1.7	0.2	1.5	0.1	1.1	0.0	0.0	0.3	4.1	0.2	2.5	0.3	3
Steel Cans	1.6	17.6	2.6	23.1	1.1	15.9	1.2	13.0	2.4	31.0	1.6	16.5	1.8	20
Aerosol Cans	0.1	0.7	0.1	1.3	0.1	1.0	0.0	0.0	0.1	1.6	0.2	1.7	0.2	2
Paint Cans	0.0	0.3	0.4	3.2	0.0	0.0	0.0	0.0	0.1	1.5	0.0	0.0	0.1	1
Other Metal	0.4	4.7	0.3	2.3	0.3	5.2	0.0	0.0	0.9	11.1	0.5	4.8	1.4	15
Sub-total Metals	2.9	32.8	4.4	38.3	1.9	28.1	1.9	19.7	4.6	58.6	3.1	32.0	4.3	48

Table 4b: Municipalities With Populations of 100,000 - 500,000

Component and Description	Durham-Fall		Durham-Winter		Etobicoke		Markham		Simcoe		Brampton-Summer		Brampton-Winter	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS														
LCBO Clear	0.8	9.1	0.8	7.2	0.6	9.6	0.0	0.0	1.9	24.1	0.8	8.5	0.7	7
LCBO Coloured	0.4	4.0	0.4	3.3	2.0	30.0	0.0	0.0	1.0	13.1	0.7	7.6	0.8	9
Clear	1.4	15.4	1.4	12.7	1.5	23.0	3.4	35.6	2.8	35.8	2.1	22.3	2.4	28
Coloured	0.0	0.4	0.3	2.4	0.4	6.2	2.5	25.9	0.4	4.7	0.3	2.7	0.2	3
Other Glass	0.6	6.5	0.7	6.4	1.2	18.7	0.0	0.0	0.6	7.3	0.3	2.6	0.8	9
Sub-total Glass	3.1	35.4	3.6	32.0	5.8	87.5	5.9	61.6	6.7	85.0	4.2	43.6	4.8	55
5. HOUSEHOLD SPECIAL WASTES														
Batteries	0.1	1.2	0.2	1.4	0.1	0.9	0.0	0.0	0.0	0.4	0.1	0.7	0.1	1
Paint	0.0	0.0	0.7	5.9	1.3	19.3	0.0	0.0	0.0	0.2	0.4	3.9	0.0	1
Motor Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.7	0.3	2.9	0.0	0
Flammables	0.0	0.0	0.0	0.1	0.0	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0
Other HSW	0.0	0.5	0.1	0.8	0.0	0.0	0.0	0.0	0.4	5.7	0.1	1.5	0.4	5
Sub-total HSW	0.2	1.7	0.9	8.2	1.4	20.8	0.0	0.0	0.7	9.3	0.7	7.5	0.6	7
6. COMPOSTABLES														
Vegetable Food Waste	13.6	153.2	13.7	120.3			0.0	0.0	17.4	222.7	10.3	107.7	10.3	116.0
Animal Food Waste	3.0	33.9	7.5	65.7			0.0	0.0	5.4	68.7	11.8	123.2	13.2	149.2
Total Kitchen Waste					23.9	360.2	22.1	232.5						
Grass	8.8	99.6	0.4	3.5			0.0	0.0	0.0	0.0	8.7	91.3	0	0
Woody Yard Waste	2.1	24.0	2.1	18.7			0.0	0.0	0.0	0.0	6.2	64.7	0.5	5.3
Other Yard Waste	19.8	223.2	3.2	28.3			0.0	0.0	1.0	12.4	4.9	51.2	4.3	48.3
Total Yard Waste					16.1	243.0	12.7	251.4						
Animal waste	4.6	52.2	5.4	47.2	2.2	32.6	0.0	0.0	12.2	155.8	3.8	39.4	3.9	44.0
Wood ashes	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Sub-total Compostables	52.1	586.2	32.4	283.8	42.2	635.8	34.8	366.2	36.0	459.5	45.6	477.4	32.1	362.8
7. OTHER WASTE MATERIALS														
Textiles	3.2	36.1	3.2	27.7	1.5	22.2	0.0	0.0	3.7	47.5	1.3	14.0	2.8	31.6
Building Renovations	0.6	7.1	1.5	13.5	10.2	153.9	0.0	0.0	1.2	15.2	1.8	19.2	6.9	77.4
White Goods	0.0	0.0	1.4	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sanitary Products	4.0	44.5	4.6	40.7	3.0	46.0	0.0	0.0	2.8	35.2	3.0	31.5	4.9	54.8
Electronics/Appliances	0.3	3.8	0.6	5.3	0.0	0.0	0.0	0.0	0.6	7.9	1.8	19.3	2.9	32.3
Rubber	0.0	0.0	0.0	0.2	0.0	0.7	0.0	0.0	0.1	0.9	0.1	0.9	0.1	1.6
Furniture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.3	34.9	2.3	26.3
Other	0.6	7.0	1.1	9.5	0.1	2.0	23.7	249.7	1.7	21.1	0.4	4.1	1.1	13.0
Sub-total Other Waste Materials	8.8	98.5	12.5	109.3	14.9	224.7	23.7	249.7	10.1	128.4	11.8	123.8	21.0	236.9
8. CONTAMINATION														
Other Rigid Plastic							0.2	1.8						
Non Recyclable Paper							0.2	2.0						
Plastic Bags							0.0	0.3						
Blue/Green/ Garage Bags							0.3	3.0						
Other Contamination							1.5	15.5						
Sub-total Contamination							49.6	522.0						

Table 4c: Municipalities With Populations > 500,000

Component and Description	North York		York		Scarborough		Ottawa-Carleton-Fall		Ottawa-Carleton-Winter		Mississauga-Summer		Mississauga-Winter	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
1. PAPER FIBRES														
Newspaper	23.6	302.1	8.2	79.7	13.0	113.5	19.1	158.6	20.1	157.1	10.0	144.2	13.7	176.2
Magazines & paperbacks	4.4	56.9	1.6	15.6	2.8	24.3	3.5	29.3	3.5	27.3	1.9	27.6	2.1	26.6
Phone Books	0.9	11.8	0.0	0.0	0.0	0.0	0.5	3.8	0.3	2.4	0.1	0.9	0.1	1.5
Cardboard	2.9	36.8	5.2	50.0	1.2	10.4	3.9	32.2	2.8	21.7	4.5	65.3	4.2	54.3
Boxboard/Rolls	2.3	29.1	1.1	10.8	2.6	22.4	3.2	26.4	3.4	26.7	2.6	37.8	3.2	41.1
Mixed Papers	5.0	64.7	2.4	23.6	5.4	46.9	6.4	53.1	4.8	37.3	2.5	36.5	3.3	42.3
Molded Pulp	0.2	2.4	0.2	1.8	0.2	2.1	0.0	0.0	0.0	0.0	0.3	4.3	0.3	3.4
Books	0.1	0.8	0.2	2.2	0.8	6.6	0.0	0.0	0.0	0.0	0.2	3.4	0.3	3.3
Kraft Paper	1.6	19.9	0.2	2.3	0.5	4.2	0.0	0.0	0.0	0.0	0.1	1.6	0.3	4.4
Spiral Wound	0.1	0.9	0.2	1.8	0.2	1.5	0.0	0.0	0.0	0.0	0.1	1.6	0.1	1.7
Tissue/Toweling	2.1	26.6	3.1	30.0	2.9	25.2	0.0	0.0	0.0	0.0	2.5	35.5	2.6	33.7
Other Paper	0.4	4.9	0.6	6.0	0.7	5.9	0.6	4.7	2.2	17.2	1.4	19.6	0.9	11.4
Gable Top Cartons	0.2	3.1	0.2	2.3	0.3	3.1	0.0	0.0	0.0	0.0	0.2	2.7	0.2	2.6
Aseptic Containers	0.1	1.2	0.0	0.2	0.1	0.5	0.4	3.4	0.1	1.0	0.1	0.8	0.1	1.0
Total Gable Top and Aseptic Containers							0.3	2.4	0.3	2.0				
Sub-total Paper Fibres	43.8	561.1	23.4	226.5	30.5	266.4	37.8	314.0	37.4	292.8	26.5	381.7	31.4	403.5
2. PLASTICS														
PETE Soft Drink	0.2	2.5	0.3	2.5	0.4	3.4	0.6	5.4	0.8	6.6	0.6	8.9	0.4	5.6
LCBO containers	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
PETE Other	0.4	5.3	0.3	2.4	0.2	2.0	0.0	0.0	0.0	0.0	0.4	5.6	0.6	7.3
HDPE bottles	0.6	8.1	0.7	6.6	1.0	8.5	0.5	4.5	0.7	5.4	0.5	7.3	0.5	6.3
PVC	0.0	0.1	0.1	1.0	0.1	0.8	0.1	0.6	0.1	0.6	0.0	0.3	0.1	1.9
LDPE & PP Bottles	0.2	2.1	0.1	1.0	0.0	0.3	1.0	8.6	1.5	12.0	0.0	0.6	0.1	1.4
PS	0.7	8.9	0.3	3.3	0.8	6.8	0.2	2.1	0.6	4.6	0.5	7.2	0.5	6.5
Recyclable Film	0.9	11.1	0.6	5.9	0.9	8.3	0.0	0.0	0.0	0.0	1.2	17.5	1.4	17.5
Non-Recyclable Film	1.6	19.9	1.3	12.4	2.7	23.7	0.0	0.0	0.0	0.0	1.6	22.4	1.7	21.5
Wide Mouth Tubs & Lids	0.1	1.8	0.2	1.9	0.1	1.2	0.0	0.0	0.0	0.0	0.5	6.6	0.6	7.2
Other Containers	0.5	6.6	0.1	0.5	0.7	6.4	0.1	1.0	0.2	1.7	0.0	0.6	0.1	1.1
Other Plastics	0.8	10.7	2.2	21.4	1.8	15.7	2.1	17.2	1.7	13.4	1.7	24.0	0.5	6.7
Sub-total Plastics	6.0	77.1	6.1	59.0	8.8	77.0	4.7	39.3	5.7	44.4	6.9	100.2	6.3	81.3
3. METALS														
Aluminum Cans	0.2	2.8	0.2	1.8	0.4	3.3	0.6	4.7	0.7	5.5	0.6	8.9	0.7	9.4
Aluminum Foil Trays	0.1	1.8	0.1	1.0	0.2	1.4	0.1	0.8	0.1	0.7	0.2	2.3	0.2	2.0
Steel Cans	0.9	11.8	0.5	4.9	1.5	12.8	1.5	12.6	1.8	14.1	1.1	16.1	1.6	19.9
Aerosol Cans	0.1	1.2	0.3	2.6	0.1	0.6	0.2	1.8	0.1	0.8	0.0	0.6	0.1	0.7
Paint Cans	0.1	1.6	0.0	0.0	0.0	0.0	0.2	1.3	0.0	0.1	0.1	1.7	0.1	1.4
Other Metal	1.4	17.6	0.9	8.5	5.1	44.3	0.7	6.2	0.2	1.7	0.9	12.3	0.8	10.0
Sub-total Metals	2.9	36.7	2.0	18.9	7.1	62.4	3.3	27.3	2.9	23.0	2.9	41.9	3.4	43.2

Table 4c: Municipalities With Populations > 500,000

Component and Description	North York		York		Scarborough		Ottawa-Carleton-Fall		Ottawa-Carleton-Winter		Mississauga-Summer		Mississauga-Winter	
	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr	% of Total	kg/hh/yr
4. GLASS														
LCBO Clear	0.5	6.1	1.2	12.0	1.3	11.8	0.0	0.0	0.0	0.0	0.5	6.7	0.4	5.0
LCBO Coloured	0.3	3.6	0.7	7.2	2.4	20.8	0.0	0.0	0.0	0.0	0.5	7.7	1.1	13.9
Clear	2.0	25.1	2.5	24.6	1.3	11.0	0.0	0.0	0.0	0.0	2.0	28.3	2.4	30.7
Coloured	0.7	9.1	0.7	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.7	0.5	6.2
All Clear Glass							2.8	23.3	3.2	25.4				
All Coloured Glass							2.6	21.5	2.1	16.2				
Other Glass	0.3	3.4	0.9	8.9	2.2	19.0	0.1	1.1	0.5	4.1	0.5	7.3	0.6	7.5
Sub-total Glass	3.7	47.4	6.1	59.4	7.2	62.5	5.5	45.9	5.8	45.6	3.7	52.7	4.9	62.5
5. HOUSEHOLD SPECIAL WASTES														
Batteries	0.0	0.6	0.2	1.5	0.2	1.4	0.0	0.0	0.0	0.0	0.1	1.2	0.1	0.9
Paint	0.0	0.0	0.0	0.0	0.2	1.6	0.0	0.0	0.0	0.0	0.1	1.4	0.1	1.5
Motor Oil	0.0	0.0	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flammables	0.1	0.9	0.1	0.9	0.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Household Special Waste							0.2	1.8	0.2	1.3				
Other HSW	0.0	0.5	0.1	1.0	0.1	1.0	0.0	0.0	0.0	0.0	0.2	2.4	0.2	2.4
Sub-total HSW	0.2	2.0	0.5	5.1	0.6	5.0	0.2	1.8	0.2	1.3	0.3	5.0	0.4	4.8
6. COMPOSTABLES														
Vegetable Food Waste							0.0	0.0	0.0	0.0	9.4	135.4	7.5	96.5
Animal Food Waste							0.0	0.0	0.0	0.0	10.4	149.8	9.3	119.4
Total Food Waste	24.3	311.0	14.5	140.1	23.8	207.9	29.0	241.3	30.2	236.4				
Grass							0.0	0.0	0.0	0.0	4.1	58.7	1.3	17.2
Woody Yard Waste							0.0	0.0	0.0	0.0	4.8	69.4	0.6	8.2
Other Yard Waste							0.0	0.0	0.0	0.0	1.5	22.3	14.6	187.3
Total Yard Waste	5.7	73.5	12.5	120.7	0.5	4.1	0.0	0.0	1.1	8.3				
Animal waste	0.5	6.6	1.8	17.4	5.8	50.5	0.0	0.0	0.0	0.0	6.0	86.6	3.5	44.8
Wood ashes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3
Sub-total of Compostables	30.5	391.0	28.8	278.1	30.0	262.5	37.8	314.6	31.3	244.7	45.8	661.3	37.0	475.7
7. OTHER WASTE MATERIALS														
Textiles	0.9	11.4	4.8	46.1	5.3	46.3	1.7	14.4	1.1	9.0	1.3	18.4	1.6	20.3
Building Renovations	9.4	120.6	15.9	153.4	3.1	27.1	2.2	18.0	3.4	26.8	8.4	121.0	7.0	89.6
White Goods	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.0	0.1	0.0	0.0	1.7	21.7
Sanitary Products	0.3	3.4	2.6	24.7	2.9	25.6	1.8	15.0	3.6	28.2	1.9	27.5	2.6	33.7
Electronics/Appliances	0.0	0.0	5.1	49.1	3.0	26.6	0.0	0.0	0.0	0.0	1.7	24.6	1.7	22.4
Rubber	1.0	13.0	0.2	1.7	0.1	0.8	0.5	4.4	0.0	0.0	0.4	5.2	0.0	0.6
Furniture	0.0	0.0	4.6	44.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	17.1
Other	1.4	17.9	0.0	0.1	1.3	11.7	4.3	36.0	8.5	66.8	0.4	5.4	0.7	9.4
Sub-total of Other Waste Materials	13.0	166.4	33.1	319.9	15.8	138.2	10.6	88.5	16.7	130.9	14.0	202.1	16.7	214.6

3.8 Summary Results by Population

Table 5 below summarizes the total percent of waste ranges for each of the seven major categories by population size.

Table 5. Summary of Percent Ranges of the Total Waste for the Seven Major Categories by Population Size

Waste Categories	Population <100,000	Population 100,000-500,000	Population >500,000
Paper Fibres	24 – 30%	25 – 33%	26 – 38%
Plastics	5 – 8%	5 – 10%	5 – 9%
Metals	3 – 4%	2 – 5%	3 – 7%
Glass	4 – 8%	3 – 7%	3.5 – 6%
Household Special Waste	0.1 – 0.7%	0.2 – 1.4%	0.2 – 0.6%
Compostables	36 – 52%	36 – 52%	30 – 49%
Other Waste Materials	8 – 17%	9 – 17%	11 – 17%

As with the seasonal classification, *household special waste* represents <1.5% of the total waste collected when the data are divided by population size. *Compostables* show consistent percent ranges over the three population sizes. These ranges are relatively larger than in the seasonal break down because the population classification does not take season into account. *Paper fibres, plastics, metals, glass,* and *other waste materials* give relatively even percent ranges across the three population sizes. Again, *paper fibres* and *compostables* constitute the majority of the total waste collected.

4. Diversion Recovery Rates

The recovery rates for blue box pick up are summarized in Table 6. A similar table could be developed for the organics recovery rate; however, because a minimal number of municipalities have organics pick up (aside from yard and leaf waste) there is not enough data to make a meaningful comparison at this time. It is interesting to note that in the winter audits, Bolton, Durham, and Sault Ste. Marie have reported the lowest recovery rate for the magazines and paperbacks category. However, in the other audits for Durham (Fall) and Bolton (Summer) the percent recovery is 25 to 30% higher (Sault Ste. Marie only conducted a fall audit). This table gives the user an idea of achievable recovery rates. “N/A” in the table means not applicable, because the municipality does not accept that particular category for recycling. The subtotal percentages indicate the amount of diversion possible, as a percentage of total waste, if **all items** in that section are recyclable.

Table 6: Blue Box Recovery Rates

Table 6: Blue Box Recovery Rates																
Waste sort categories and descriptions	Bolton Winter	Bolton Summer	Brampton Winter	Brampton Summer	Mississauga Winter	Mississauga Summer	Durham Winter	Durham Fall	Simcoe Winter	Sudbury Winter	North Glengarry Summer	Etobicoke Fall	Scarborough Fall	York Fall	North York Fall	
1. PAPER FIBRES																
Newspaper	ONP, inserts	88%	86%	87%	80%	85%	82%	82%	89%	77%	74%	87%	74%	90%	77%	94%
Magazines & paperbacks	OMG, catalogues, soft covers	53%	79%	79%	66%	64%	77%	53%	83%	53%	79%	75%	59%	57%	80%	65%
Phone Books	OTB	100%	87%	87%	100%	100%	100%	0%	0%	66%	67%	0%	0%	0%	0%	40%
Cardboard	OCC	77%	67%	78%	76%	80%	78%	80%	68%	88%	81%	75%	23%	88%	65%	92%
Boxboard/Rolls	OBB	48%	45%	43%	29%	38%	31%	23%	38%	43%	43%	56%	36%	18%	42%	35%
Mixed Papers	junk mail, fine household papers	19%	38%	25%	43%	32%	45%	62%	54%	27%	19%	36%	46%	8%	43%	27%
Molded Pulp	egg cartons, drink trays	38%	32%	46%	40%	46%	19%	7%	7%	15%	44%	31%	29%	9%	19%	35%
Books	hard covered	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15%	75%	0%	0%	0%	0%
Kraft Paper	paper bags	17%	3%	18%	3%	14%	4%	N/A	N/A	8%	6%	31%	9%	3%	23%	32%
Spiral Wound	frozen juice, pringles type packaging	N/A	39%	57%	21%	13%	10%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tissue/Toweling	tissues, napkins, paper towels	N/A	N/A	N/A	N/A	0%	0%	6%	11%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Paper	multi-layered, waxed, wrapping, fast food	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gable Top Cartons	milk, juice	64%	58%	58%	33%	46%	31%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aseptic Containers	tetra type packaging	43%	0%	10%	7%	15%	0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sub-total Paper Fibres		61%	57%	63%	54%	61%	59%	54%	58%	53%	53%	62%	49%	53%	58%	70%
2. PLASTICS																
PETE Soft Drink	# 1 soft drink	54%	60%	75%	52%	53%	44%	41%	46%	69%	55%	69%	33%	67%	61%	62%
LCBO containers	alcoholic beverage containers	100%	100%	98%	0%	0%	44%	17%	0%	49%	64%	N/A	0%	33%	0%	0%
PETE Other	water, juice, food, dish soap, trays	65%	72%	71%	45%	58%	53%	53%	48%	26%	58%	N/A	N/A	N/A	N/A	N/A
HDPE bottles	# 2	51%	42%	58%	43%	51%	32%	N/A	N/A	45%	40%	54%	56%	67%	73%	39%
PVC	# 3, bottles, packaging	14%	19%	62%	18%	31%	9%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LDPE & PP Bottles	# 4 and # 5, squeezable	13%	0%	69%	56%	31%	13%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PS	# 6, trays, cups, packaging	21%	24%	35%	12%	16%	12%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Recyclable Film	shopping bags, milk pouches,	11%	12%	15%	8%	18%	4%	N/A	N/A	N/A	N/A	7%	N/A	N/A	N/A	N/A
Non-Recyclable Film	garbage bags, chip bags, shrink wrap	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wide Mouth Tubs & Lids	# 2, 4, 5 & 6	24%	29%	39%	29%	29%	16%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Containers	# 7, trays, bottles, unmarked plastics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Plastics	non-pkg, garden hose, VCR tape, toys	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sub-total Plastics		20%	21%	33%	19%	23%	14%	5%	8%	13%	16%	19%	15%	12%	20%	12%
3. METALS																
Aluminum Cans	food & beverage cans	73%	72%	79%	57%	79%	52%	43%	51%	71%	44%	74%	46%	76%	86%	72%
Aluminum Foil Trays	pie plates, etc	5%	3%	31%	4%	6%	0%	3%	0%	0%	9%	4%	12%	0%	0%	0%
Steel Cans	food & beverage cans	62%	54%	54%	41%	44%	36%	62%	55%	72%	58%	73%	72%	64%	42%	41%
Aerosol Cans	empty	0%	N/A	53%	N/A	27%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paint Cans	empty	0%	0%	0%	0%	28%	0%	N/A	N/A	N/A	9%	N/A	N/A	N/A	N/A	N/A
Other Metal	scrap metal, other containers, bikes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sub-total Metals		38%	34%	42%	34%	42%	26%	46%	41%	50%	39%	55%	52%	17%	35%	20%

Table 6: Blue Box Recovery Rates

Blue Box Recovery Rates																
Municipality																
Waste sort categories and descriptions	Bolton Winter	Bolton Summer	Brampton Winter	Brampton Summer	Mississauga Winter	Mississauga Summer	Durham Winter	Durham Fall	Simcoe Winter	Sudbury Winter	North Glengarry Summer	Etobicoke Fall	Scarborough Fall	York Fall	North York Fall	
4. GLASS																
LCBO Clear	clear glass alcoholic beverages	52%	100%	63%	75%	61%	50%	60%	53%	90%	72%	96%	37%	30%	95%	72%
LCBO Coloured	coloured glass alcoholic beverages	89%	81%	84%	71%	79%	61%	75%	35%	83%	78%	90%	94%	77%	100%	100%
Clear	food & beverage containers	56%	65%	65%	63%	65%	43%	40%	42%	68%	61%	57%	61%	41%	76%	69%
Coloured	food & beverage containers	83%	89%	82%	80%	71%	14%	96%	0%	N/A	12%	100%	94%	0%	91%	49%
Other Glass	lightbulbs, window glass, cups, ceramics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sub-total Glass		63%	70%	60%	64%	62%	39%	51%	40%	69%	56%	73%	59%	57%	75%	63%

5. WDO Residential Waste Audit Guide

Overall the RCWAG was well received. The only negative feedback from the municipalities concerns the methodology, in particular the small number of households suggested to be sampled. A few municipalities believe that 20 to 30 households is not a large enough sample set to be representative of the population. Some municipalities, therefore, increased the sample size significantly for their survey. Others performed audits on 30 households a day, five days a week, for four weeks, giving a sample set of 150 households. Consequently larger sample sets were obtained. However, how many households are surveyed is ultimately up to the individual municipality conducting the audit and pertains directly to the goal of the audit.

Gartner Lee Limited noticed a few errors that were consistently repeated by several municipalities. All of these errors are found in the waste audit results table (spreadsheet). Appendix B contains the revised audit guide and results table dated February 2001. The guide (July 2000) specifically states, on page 8, “Please do not alter the worksheet format or formulas”. This statement is required to ensure the consistency / validity of the data received. However, it overlooked one detail. The results table spreadsheet assumes a four week survey as described in the guide in order to calculate the kg/hh/yr column. In several cases the municipality involved did not conduct a four week survey and as a result are (unknowingly) reporting a kg/hh/yr value that is incorrect. Therefore, we suggest that, in addition to entering the number of households, the municipality should also enter the number of weeks the audit was conducted. All data received by GLL, except for the three anomalous surveys, have been reviewed and corrected to accurately reflect the number of weeks surveyed. The corrected results are contained in Appendix C.

In compiling the data, we noticed that the definition of the “number of households” surveyed was not always understood. For example, if there are 60 households sampled over a three week period with a pickup for garbage and blue box weekly, a common error in calculating the number of households surveyed was to multiply the number of households by the number of weeks surveyed. This gives the number of households surveyed to be 180. Confusion arises, we believe, because it is not clearly stated in the guide that the formulae in the spreadsheet take the number of weeks surveyed into account where necessary. The text and tables have been modified to correct these errors. The revised guideline clarifies these points.

Generally the notes shown at the bottom of the results table spreadsheet were either missed or not understood. This is particularly true of the note referring to placing a “BB” or “CO” in the “div” (diversion) column. The guide should inform the user that a “BB” indicates that this category is accepted by the municipality for recycling, and by entering a “BB” in this column the “recovery rate” column will automatically be calculated. Whereas, entering a “CO” indicates that this category of waste is accepted

by the municipality for organics pick up, and the “recovery rate” will automatically be calculated. Leaving the “div” column blank means that this category of waste is considered garbage. Several municipalities entered a “Y” in the diversion column and calculated the recovery rate for all items in Sections 1 through 4. It is, therefore, unclear which categories the municipality actually recycles.

The results table was completed consistently by all municipalities. However, the waste audit description was only occasionally submitted to GLL along with the results table.

6. Discussion

Overall the RCWAG enables a municipality to perform a waste audit and obtain comprehensive data from that audit. In addition, this study enables a municipality to compare itself to other municipalities within Ontario either by season or by population size. A few problems became evident upon reviewing the submitted data, but, these are minor and have been addressed in this report.

After the WDO had developed this RCWAG, a GAP (Generally Accepted Principles) document was prepared under the auspices of CSR (Companies Supporting Recycling). Its purpose was to standardize the measurement of waste diversion in municipal solid waste programs across Canada. GAP provides a uniform set of definitions and units of measurement. For example, tonnes is the standard unit of weight, and kg/ capita is the standard reporting unit.

Notwithstanding that the amounts of waste measured in RCWAG are very small in comparison with the amounts accounted for in municipalities using GAP, it is recommended that the WDO consider at future meetings the merits and efficacy of using the same units of measurement. There may be occasions in the future when it is advantageous to use RCWAG data and GAP data together.

7. Conclusion

The residential curbside waste audit guide provides a good basis for a municipality to conduct a waste audit. This study has verified and compiled all the data received and discussed general findings from the comparison of the audits. This is the first phase of the study. Hopefully with the inclusion of more waste audit data, it will be possible to build a waste audit database that is available to all Ontario municipalities. Consideration should be given to the benefits (and costs) of revising RCWAG to be compatible with GAP.

Revisions have been made to the text and the tables of the guide as shown in Appendix D. Future waste audits should follow the revised guide in Appendix D, dated March 2001.

8. References

2000 Association of Municipal Managers, Clerks and Treasurers of Ontario:
2000 Ontario Municipal Directory. AMCTO, Mississauga, 160pp.

Draft Report, 2000:

Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste System Flow. Unpublished, 32pp.