Seattle Public Utilities

2008 Commercial & Self-Haul Waste Streams Composition Study Final Report

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July 2008

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1 Overview

1.1 Introduction and Background

Seattle Public Utilities (SPU) provides for the collection, transfer, and disposal of municipal solid waste (MSW) from within the City of Seattle. As part of this responsibility, SPU designs and implements programs intended to achieve a 60% recycling goal by 2012. To better understand the types and quantities of MSW disposed, and to assess the city's recycling potential, SPU has conducted waste composition studies since 1988. These studies analyze the residential, commercial, and self-haul waste streams every four years. Table 1-1 shows the number of waste samples sorted from these three waste streams from 1988 through the current study in 2008.

Table 1-1. Samples per Study Period, by Substream

	(Number of Samples)			
Year	Commercial	Residential	Self-Haul	Total
1988-89	121	212	217	550
1990	0	114	203	317
1992	251	0	197	448
1994-95	0	368	0	368
1996	348	0	199	547
1998-99	0	360	0	360
2000	347	0	200	547
2002	0	309	0	309
2004	270	0	216	486
2006	0	356	0	356
2008	271	0	216	487

All of these studies share the following three common objectives:

- Obtaining information about the City's residential, commercial, and self-haul waste substreams in order to estimate the recycling potential for each;
- Understanding differences among these three substreams so that targeted recycling programs can be designed, implemented, and monitored for each; and
- Establishing a baseline for continued, long-term measurement of system performance.

This report, which consists of six sections, presents the results of the 2008 commercial and self-haul waste study. This section, Section 1, briefly introduces the project and the methodology, and Section 2 summarizes the findings. In Section 3, the 2008 commercial findings are compared with those from the 1988/89, 1992, 1996, 2000, and 2004 study periods. The same is done for the self-haul substream in Section 4.[1] Detailed results of the 2008 commercial and self-haul waste composition study are presented in Section 5 and Section 6, respectively. Appendices follow the main body of the report and provide material definitions, study methodology, comments on sampling events, waste composition calculations, year-to-year comparison calculations, and copies of field forms.

[1] The self-haul substream was sampled in 1990, while the commercial substream was not. Therefore, self-haul results are compared across six studies, and commercial results are compared across five.

1.2 Seattle's Commercial and Self-haul Waste Substreams

For any specific geographic area, the total waste stream is composed of various substreams. A substream is determined by the particular generation, collection, or composition characteristics that make it a unique portion of the total waste stream. This study targets two of three main substreams in Seattle: the commercial and self-haul substreams.[2] These are described in detail below.

1.2.1 Commercial Substream

The **commercial** substream comprises wastes that are both a) generated at businesses and institutions and b) collected by contracted hauling companies. The commercial substream is composed of 12 subpopulations as shown in Figure 1-1. Subpopulations are defined according to three groupings: service area (north or south), shift (day or night), and vehicle type (front loader, rear loader, or roll-off).

Figure 1-1. Commercial Subpopulations, by Service Area, Shift, and Vehicle Type

Shift	Service Area					
	North			South		
	Vehicle Type			Vehicle Type		
	Front loader	Rear loader	Roll-off	Front loader	Rear loader	Roll-off
Day	Day FL North	Day RL North	Day RO North	Day FL South	Day RL South	Day RO South
Night	Night FL North	Night RL North	Night RO North	Night FL South	Night RL South	Night RO South

The two service areas from which Seattle's commercial waste are collected, *north* and *south*, are divided by Royal Brougham Way and Jackson Street, located south of downtown.

Commercial waste from the north and south service areas is hauled by two private hauling companies. During the study period commercial waste was delivered to four facilities: the two City recycling and disposal stations, Eastmont (owned by Waste Management), and Third & Lander (owned by Rabanco). According to Seattle's 2008 Garbage Report, about 54% of the all waste collected was hauled to the City's two recycling and disposal stations.[3] Roughly 37% of all waste was hauled to Eastmont, and the remaining 9% was hauled to Rabanco's Third & Lander facility. Since this study characterized municipal solid waste (MSW) only, no samples were taken from construction, demolition, and landclearing waste (CDL) loads delivered to these facilities.[4]

[2] The residential substream was not included in this study. For the most recent analysis of Seattle's residential waste stream, please see the 2006 Residential Waste Stream Composition Study at http://www.seattle.gov/util/About_SPU/Garbage_System/Reports/Waste_Composition_Reports/index.asp

[3] Annual garbage reports are available on the Seattle Public Utilities website: http://www.seattle.gov/util/About_SPU/Garbage_System/Reports/Garbage_Reports/index.asp.

[4] For more detail regarding Seattle's CDL waste stream, please see the 2007 Construction, Demolition and Landclearing (CDL) Waste Composition Report at http://www.seattle.gov/util/About_SPU/Garbage_System/Reports/Waste_Composition_Reports/index.asp

1.2.2 Self-haul Substream

The **self-haul** substream comprises wastes that are a) generated at residences as well as businesses and institutions and b) hauled by the household or business that generated the waste. The self-haul substream is composed of four subpopulations as shown in Figure 1-2. Subpopulations are defined according to generator type and disposal station. Generator types are defined as follows.

- *Self-haul commercial*: Waste that is hauled to one of the two City-owned transfer stations: NRDS or SRDS (North and South Recycling and Disposal Stations, respectively) by a commercial enterprise (landscaper, contractor, etc.), including waste from residential dwellings.

- *Self-haul residential*: Waste that is hauled to the NRDS or SRDS by a resident from his or her home.

Figure 1-2. Self-haul Subpopulations, by Generator Type and Service Area

Disposal Station	Generator Type	
	Commercial	*Residential*
NRDS	Commercial NRDS	Residential NRDS
SRDS	Commercial SRDS	Residential SRDS

All self-haul waste included in the study is disposed at one of two City-owned transfer stations: NRDS or SRDS.

1.3 Study Methodology

The following section provides an overview of the 2008 study methodology. As shown, there were four major steps involved in conducting this waste composition study. The steps are presented according to the order in which they occurred during the course of the study. Please see Appendix B for a detailed description of the methodology.

Step 1: Develop Sampling Plan

- Commercial samples were evenly split between the north and south service areas and were allocated to shifts (day and night) and vehicle types according to tonnage data from 2007.
- A sampling schedule was constructed for the 2008 calendar year so that 31 days of sampling, split between 21 days of commercial and 10 days of self-haul, were generally scheduled for four to five consecutive sampling days every other month. Sampling days were randomly selected to assure a representative distribution across the days of the week and weeks of the month.
- A complete list of Seattle's commercial routes was assembled in conjunction with the City's contracted waste haulers.

Step 2: Schedule and Collect Waste Samples

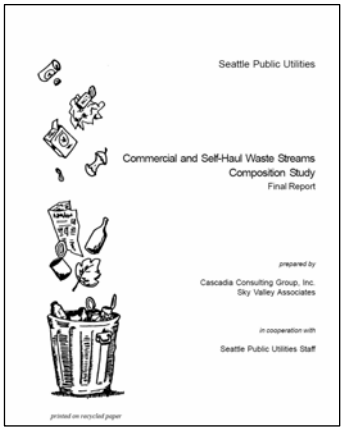
- *Commercial:*
  - Prior to each sampling event, commercial vehicle routes were randomly selected from each of the 12 subpopulations.
  - The haulers were sent a list of routes chosen for each sampling day. Waste was collected from designated routes and delivered to the appropriate transfer station for sampling.
- *Self-haul:*
  - Vehicles were systematically selected for sampling using a pre-determined frequency based on expected transfer station traffic for each sampling day.

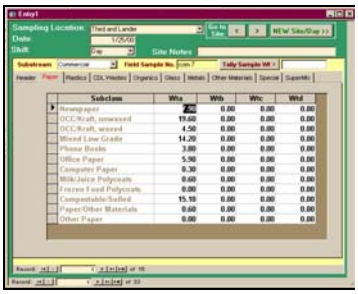
Step 3: Capture and Sort Samples

- As each selected commercial vehicle entered the facility, the sampling crew supervisor verified information with the driver about the waste collected and directed the front loader operator to scoop a portion of the waste being tipped out of the vehicle. About 250 pounds of this waste was placed on a tarpaulin for sorting.
- The sampling crew supervisor worked with selected self-haul drivers to unload their waste onto a tarpaulin. Samples from large (greater than 250 pounds) self-haul loads were either sorted in their entirety or a slice was selected. If the load was less than 250 pounds then the next vehicle of the same generator group (residential or commercial) was also selected so that the weight of the two samples together equaled at least 250 pounds.
- For this study, a total of 271 commercial and 216 self-haul samples were sorted into 92 distinct component categories, such as *office paper* or *PET bottles*. (Since the 2004 study, several materials were split apart. Please see Table 1-2 for an overview of how materials have changed.)

Step 4: Analyze Data and Prepare Report

- Following each sampling event, all sorting data were entered into a customized database and reviewed for data entry errors.
- At the conclusion of the study, waste composition estimates were calculated by aggregating sampling data using a *weighted average* procedure. SPU and haulers provided 2008 waste tonnage data estimates. These estimates were used to perform final calculations. The weighted average procedure is detailed in Appendix D.
- Once the data were analyzed, an accompanying report was prepared.





1.3.1 Changes in Waste Component Categories

Several changes were made to the list of components included in the 2006 study. These changes were made in part to reflect changes in the waste stream, recycling industry, and disposal regulations. An interest in increasing material specificity and worker safety was also taken into account.

A total of 92 components were included in this study, a net increase of nine components compared to the list of 83 that was used in the 2006 study. As detailed in Table 1-2, several individual components from the 2006 list were separated into two or more components.

Table 1-2. Changes to Waste Component Categories Since 2006

2006 Broad Material Category: Component	2008 Broad Material Category: Component
Paper: Compostable/Soiled	Paper: Single-use Food Service Paper: Compostable/Soiled
Plastic: Other Rigid Packaging	Plastic: Single-use Food Service Plastic: Other Rigid Packaging
Plastic: Expanded Polystyrene	Plastic: Expanded Poly. Food Grade Plastic: Expanded Polystyrene
Glass: Other Glass	Glass: Flat Glass Glass: Other Glass
CDL Wastes: Dimension Lumber	CDL Wastes: Clean Dimensional Lumber CDL Wastes: Clean Engineered Wood
CDL Wastes: Treated Wood	CDL Wastes: New Painted Wood CDL Wastes: Old Painted Wood CDL Wastes: Creosote-treated Wood CDL Wastes: Other Treated Wood
CDL Wastes: Asphaltic Roofing	CDL Wastes: Asphalt Shingles CDL Wastes: Other Asphaltic Roofing

Please reference Appendix A for a detailed description of the changes in broad material categories and component categories dating back to the original study in 1988-89.

2 Summary of Year 2008 Sampling Results

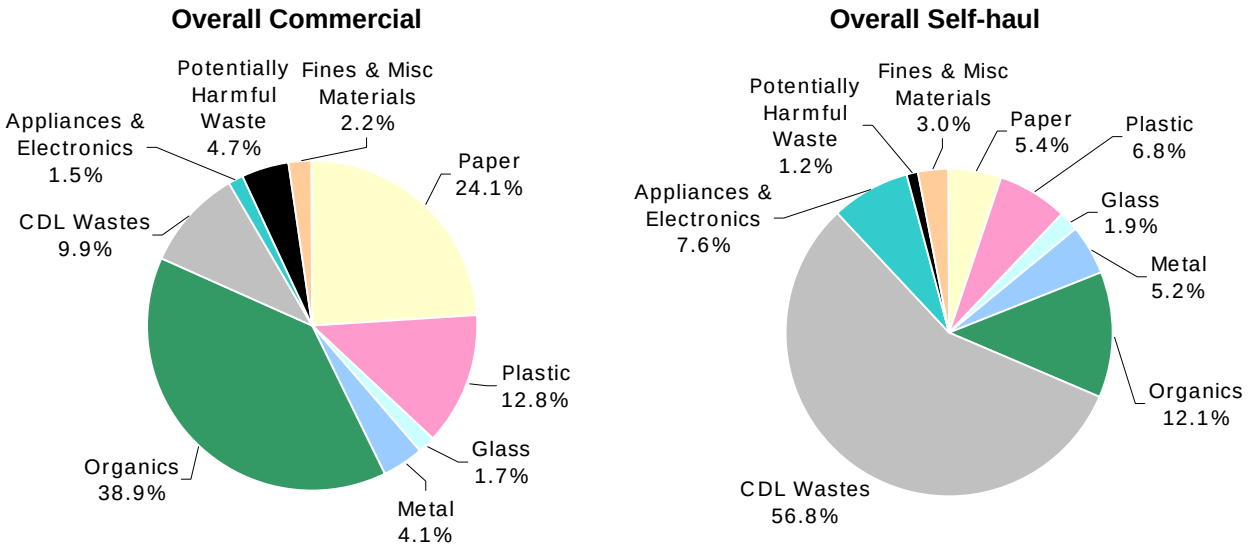
In 2008, Seattle's waste study focused on the commercial and self-haul substreams. Commercial samples were evenly split between the two service areas (north and south) and proportionally allocated by vehicle type and by shift (day or night), based upon the estimated tonnage of waste received. Because the amount of self-hauled waste that was received at the NRDS and SRDS was roughly equal, the number of self-haul samples was divided evenly between those two facilities.

The waste samples were sorted into nine broad material categories: **paper**, **plastic**, **glass**, **metal**, **organics**, **appliances & electronics**, **CDL wastes**, **potentially harmful waste**, and **fines and miscellaneous materials**. Each broad material category was then sorted into various components such as *newspaper* or *PET plastic bottles*. A total of 92 components were included in this study.

Composition results are presented in the following order in this report. First, a pie chart reflects the composition percentages of the nine broad material categories. A table that lists the top ten components, by weight, follows the pie charts. Lastly, a table depicting the full composition results of all 92 components is presented. Weighted averages were used to calculate composition estimates for the commercial and self-haul substreams. Please see Appendix D for more detail regarding these calculations.

Figure 2-1 summarizes the composition results. As shown, **paper** and **organics**, together, accounted for about 63% of the commercial tonnage, while **CDL wastes** composed more than half of the self-haul waste. **CDL wastes** (construction, demolition, and landclearing debris) include components such as *clean dimensional lumber*, *rock/concrete/bricks*, and *demolition gypsum*.

Figure 2-1. Overview of Composition Estimates: by Substream
(January – December 2008)



2.1 Overall Commercial Substream

A total of 271 loads were sampled from the commercial substream between January and December 2008. The commercial substream disposed of 176,777 tons of waste during the 2008 calendar year. The composition estimates for this substream were applied to the 176,777 tons to estimate the amount of waste disposed for each component category.

The top ten components disposed in the commercial substream are listed in Table 2-1. When summed, they accounted for approximately 65% of the overall commercial tonnage. Accounting for nearly 32%, *food* stood out as the largest single component of the commercial substream. *Compostable/soiled paper* and *plain OCC/Kraft paper* were large components (each more than 5%, by weight) of this substream as well. Table 2-2 lists the composition percentages, by weight, of each component in the overall commercial substream.[5]

Table 2-1. Top Ten Components: Overall Commercial
(January – December 2008)

Component	Mean	Cum. %	Tons
Food	31.6%	31.6%	55,914
Compostable/Soiled Paper	6.4%	38.0%	11,252
Plain OCC/Kraft	5.2%	43.2%	9,264
Other Plastic Film	4.6%	47.8%	8,059
Mixed Low Grade Paper	4.0%	51.8%	7,151
Medical Wastes	4.0%	55.8%	7,036
Mixed/Other Paper	2.6%	58.4%	4,566
Durable Plastic Products	2.3%	60.8%	4,152
Single-use Food Service Paper	2.1%	62.8%	3,671
Other Construction Debris	2.1%	64.9%	3,667
Total	**64.9%**		**114,731**

[5] All waste composition results were derived using a 90% confidence level. This means that there is a 90% certainty that the actual composition is within the calculated range. In charts throughout this report, the values graphed represent the mean component percentage, not the range.

Table 2-2. Composition by Weight: Overall Commercial
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**42,628**	**24.1%**		
Newspaper	2,642	1.5%	1.1%	1.8%
Plain OCC/Kraft	9,264	5.2%	4.3%	6.2%
Waxed OCC/Kraft	761	0.4%	0.3%	0.6%
High Grade	3,321	1.9%	1.4%	2.3%
Mixed Low Grade	7,151	4.0%	3.6%	4.5%
Compostable/Soiled	11,252	6.4%	5.6%	7.2%
Single-use Food Service	3,671	2.1%	1.7%	2.5%
Mixed/Other Paper	4,566	2.6%	2.0%	3.2%
Plastic	**22,700**	**12.8%**		
#1 PET Bottles	846	0.5%	0.4%	0.5%
#2 HDPE Natural Bottles	485	0.3%	0.2%	0.4%
#2 HDPE Colored Bottles	532	0.3%	0.1%	0.5%
Other Bottles	65	0.0%	0.0%	0.1%
Tubs	1,063	0.6%	0.4%	0.8%
Expanded Poly. Nonfood	1,064	0.6%	0.3%	0.9%
Expanded Poly. Food grade	516	0.3%	0.2%	0.4%
Single-use Food Service	924	0.5%	0.4%	0.6%
Other Rigid Packaging	554	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	273	0.2%	0.1%	0.2%
Clean PE Film	1,278	0.7%	0.5%	0.9%
Other Film	8,059	4.6%	4.2%	5.0%
Durable Plastic Products	4,152	2.3%	1.5%	3.2%
Plastic/Other Materials	2,892	1.6%	1.0%	2.3%
Glass	**3,010**	**1.7%**		
Clear Bottles	1,202	0.7%	0.4%	1.0%
Green Bottles	488	0.3%	0.2%	0.3%
Brown Bottles	586	0.3%	0.3%	0.4%
Container Glass	168	0.1%	0.1%	0.1%
Fluorescent Tubes	20	0.0%	0.0%	0.0%
Flat Glass	93	0.1%	0.0%	0.1%
Other Glass	455	0.3%	0.2%	0.4%
Metal	**7,310**	**4.1%**		
Alum. Beverage Cans	418	0.2%	0.2%	0.3%
Alum. Foil/Containers	169	0.1%	0.1%	0.1%
Other Aluminum	227	0.1%	0.0%	0.2%
Other Nonferrous	71	0.0%	0.0%	0.1%
Tin Food Cans	821	0.5%	0.4%	0.6%
Empty Aerosol Cans	124	0.1%	0.1%	0.1%
Other Ferrous	2,111	1.2%	0.9%	1.4%
Oil filters	67	0.0%	0.0%	0.1%
Mixed Metals/Material	3,303	1.9%	1.4%	2.4%
Organics	**68,788**	**38.9%**		
Leaves and Grass	2,682	1.5%	0.9%	2.2%
Prunings	1,067	0.6%	0.3%	0.9%
Food	55,914	31.6%	29.0%	34.3%
Textiles/Clothing	3,077	1.7%	1.3%	2.2%
Mixed Textiles	1,383	0.8%	0.5%	1.0%
Carpet	1,099	0.6%	0.1%	1.1%
Disposable Diapers	1,447	0.8%	0.6%	1.1%
Animal By-products	1,267	0.7%	0.4%	1.0%
Rubber Products	736	0.4%	0.2%	0.7%
Tires	116	0.1%	0.0%	0.1%

	Tons	Mean	Low	High
CDL Wastes	**17,466**	**9.9%**		
Clean Dimension Lumber	2,596	1.5%	1.1%	1.9%
Clean Engineered Wood	1,643	0.9%	0.6%	1.3%
Pallets	2,660	1.5%	0.9%	2.1%
Crates	554	0.3%	0.1%	0.5%
Other Untreated Wood	352	0.2%	0.0%	0.4%
New Painted Wood	994	0.6%	0.4%	0.8%
Old Painted Wood	336	0.2%	0.0%	0.3%
Creosote-treated Wood	70	0.0%	0.0%	0.1%
Other Treated Wood	156	0.1%	0.0%	0.2%
Contaminated Wood	1,330	0.8%	0.5%	1.0%
New Gypsum Scrap	16	0.0%	0.0%	0.0%
Demo Gypsum Scrap	638	0.4%	0.2%	0.6%
Fiberglass Insulation	190	0.1%	0.0%	0.2%
Rock/Concrete/Bricks	1,504	0.9%	0.3%	1.4%
Asphalt Shingles	155	0.1%	0.0%	0.2%
Other Asphaltic Roofing	239	0.1%	0.0%	0.3%
Ceramics	364	0.2%	0.1%	0.3%
Other Construction	3,667	2.1%	1.2%	3.0%
Appliances & Electronics	**2,705**	**1.5%**		
Furniture	695	0.4%	0.0%	0.7%
Mattresses	338	0.2%	0.0%	0.4%
Small Appliances	653	0.4%	0.1%	0.7%
Audio/Visual Equipment	688	0.4%	0.1%	0.6%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	62	0.0%	0.0%	0.1%
Other Computer Equipment	270	0.2%	0.0%	0.3%
Potentially Harmful Waste	**8,280**	**4.7%**		
Latex Paint	332	0.2%	0.0%	0.4%
Solvent-based Adhesives	4	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	156	0.1%	0.0%	0.2%
Caustic Cleaners	42	0.0%	0.0%	0.0%
Pesticides/Herbicides	9	0.0%	0.0%	0.0%
Dry-cell Batteries	111	0.1%	0.0%	0.1%
Wet-cell Batteries	206	0.1%	0.0%	0.3%
Gasoline/Kerosene	17	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	39	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	7,036	4.0%	2.4%	5.5%
Other Chemicals	264	0.1%	0.0%	0.3%
Other Potentially Harmful Waste	64	0.0%	0.0%	0.1%
Fines & Misc Materials	**3,891**	**2.2%**		
Sand/Soil/Dirt	2,228	1.3%	0.6%	1.9%
Non-distinct Fines	30	0.0%	0.0%	0.0%
Misc. Organics	1,631	0.9%	0.6%	1.2%
Misc. Inorganics	1	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**176,777**
Sample Count	**271**

2.2 Results by Commercial Subpopulation

Commercial waste composition estimates were calculated for the overall commercial substream as well as for each vehicle type, season, and generator type. The largest components for each subpopulation are shown in Table 2-3. The largest components are those that accounted for at least 5% of the subpopulation's total tonnage, by weight. *Food* was a large component disposed by all commercial subpopulations, except CDL. When the data are stratified, (e.g., according to generator type) the sample size for each analysis is smaller, which means that the calculations are subject to a more substantial range of error. Refer to Section 5 for more detail regarding the commercial substream.

Table 2-3. Largest Waste Components: by Commercial Subpopulation
(January – December 2008)

Subpopulation	Paper							Plastics				Metal	
	Newspaper	Plain OCC / Kraft	High Grade	Mixed Low Grade	Compost. / Soiled	Single-use Food Service	Mixed / Other Paper	Clean PE Film	Other Film	Durable Plastic Products	Plastic / Other Materials	Other Ferrous	Mixed Metals / Materials
Vehicle Type													
Front Loader					6.1%								
Rear Loader					7.1%								
Compactor Roll-off		6.3%			7.6%								
Loose Roll-off		8.1%					5.0%						5.1%
Season													
Spring					6.9%				5.1%	5.4%			
Summer		6.0%			6.9%				5.4%				
Autumn		5.7%			5.0%								
Winter					5.4%								
Generator Type, by Site													
CDL													
Education					15.9%	9.8%			5.6%				
Health Care					8.7%								
Hotel/Motel	14.2%			12.7%	5.8%				6.4%				
Manufacturing		20.5%						6.7%			9.2%		
Office			7.2%	6.1%	13.2%				5.4%				
Other Services		6.9%					6.4%						
Retail		9.2%							5.1%				
Transportation		9.3%								5.3%		6.6%	
Wholesale		5.1%			5.2%								
Mixed Generator Types					5.9%								
Overall Commercial		**5.2%**			**6.4%**								

Table 2-4. Continued Largest Waste Components: by Commercial Subpopulation
(January – December 2008)

Subpopulation	Organics			CDL Wastes						Pot. Harm. Wastes	Fines & Misc.
	Food	Textiles / Clothing	Carpet	Clean Dimen. Lumber	Pallets	Cont-aminated Wood	Demo Gypsum Scrap	Rock / Concrete / Bricks	Other Constr. Debris	Medical Wastes	Sand / Soil / Dirt
Vehicle Type											
Front Loader	32.2%										
Rear Loader	49.3%										
Compactor Roll-off	32.2%									9.3%	
Loose Roll-off	12.2%				6.2%						
Season											
Spring	29.3%										
Summer	31.1%										
Autumn	28.4%									5.5%	
Winter	30.1%										
Generator Type, by Site											
CDL			7.5%	5.7%				11.0%	16.5%		16.9%
Education	25.1%									7.4%	
Health Care	12.0%				8.6%					33.5%	
Hotel/Motel	27.5%	9.8%									
Manufacturing	21.8%				9.0%						
Office	28.8%										
Other Services	18.0%										
Retail	32.5%										
Transportation	10.6%					5.5%					
Wholesale	35.9%						5.2%				
Mixed Generator Types	34.2%										
Overall Commercial	**31.6%**										

2.3 Overall Self-haul Substream

A total of 216 self-haul loads were sampled in 2008. The self-haul substream disposed of 90,829 tons of waste during the 2008 calendar year. The composition estimates for this substream were applied to the 90,829 tons to estimate the amount of waste disposed for each component category. Table 2-5 lists the top ten components disposed by the self-haul substream. Together, these ten components accounted for approximately 58% of the entire self-haul tonnage. *New painted wood*, *other construction debris*, *clean dimensional lumber*, *contaminated wood*, *clean engineered wood*, *furniture*, and *rock/concrete/bricks* are all large components of this substream. The composition percentages, by weight, of each component in the self-haul substream, are listed in Table 2-6.

Table 2-5. Top Ten Components: Overall Self-haul
(January – December 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	11.0%	11.0%	10,024
Other Construction Debris	8.4%	19.5%	7,660
Clean Dimensional Lumber	6.5%	26.0%	5,912
Contaminated Wood	5.7%	31.7%	5,206
Clean Engineered Wood	5.5%	37.2%	4,961
Furniture	5.1%	42.3%	4,663
Rock/Concrete/Bricks	5.1%	47.4%	4,615
Carpet	4.0%	51.3%	3,598
Durable Plastic Products	3.6%	54.9%	3,252
Old Painted Wood	3.5%	58.4%	3,148
Total	**58.4%**		**53,040**

Table 2-6. Composition by Weight: Overall Self-haul
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**4,875**	**5.4%**		
Newspaper	66	0.1%	0.0%	0.1%
Plain OCC/Kraft	1,657	1.8%	1.4%	2.2%
Waxed OCC/Kraft	410	0.5%	0.0%	1.0%
High Grade	115	0.1%	0.1%	0.2%
Mixed Low Grade	1,168	1.3%	0.9%	1.6%
Compostable/Soiled	257	0.3%	0.2%	0.4%
Single-use Food Service	90	0.1%	0.1%	0.1%
Mixed/Other Paper	1,112	1.2%	0.8%	1.7%
Plastic	**6,220**	**6.8%**		
#1 PET Bottles	52	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	43	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	87	0.1%	0.1%	0.1%
Other Bottles	2	0.0%	0.0%	0.0%
Tubs	111	0.1%	0.1%	0.2%
Expanded Poly. Nonfood	421	0.5%	0.1%	0.8%
Expanded Poly. Food grade	14	0.0%	0.0%	0.0%
Single-use Food Service	37	0.0%	0.0%	0.1%
Other Rigid Packaging	112	0.1%	0.1%	0.2%
Store/Dry Cleaning Bags	7	0.0%	0.0%	0.0%
Clean PE Film	161	0.2%	0.1%	0.3%
Other Film	491	0.5%	0.4%	0.7%
Durable Plastic Products	3,252	3.6%	2.8%	4.4%
Plastic/Other Materials	1,430	1.6%	1.0%	2.2%
Glass	**1,689**	**1.9%**		
Clear Bottles	161	0.2%	0.1%	0.3%
Green Bottles	66	0.1%	0.0%	0.1%
Brown Bottles	187	0.2%	0.0%	0.4%
Container Glass	15	0.0%	0.0%	0.0%
Fluorescent Tubes	43	0.0%	0.0%	0.1%
Flat Glass	374	0.4%	0.2%	0.7%
Other Glass	844	0.9%	0.6%	1.2%
Metal	**4,692**	**5.2%**		
Alum. Beverage Cans	17	0.0%	0.0%	0.0%
Alum. Foil/Containers	5	0.0%	0.0%	0.0%
Other Aluminum	43	0.0%	0.0%	0.1%
Other Nonferrous	41	0.0%	0.0%	0.1%
Tin Food Cans	46	0.1%	0.0%	0.1%
Empty Aerosol Cans	22	0.0%	0.0%	0.0%
Other Ferrous	1,975	2.2%	1.6%	2.7%
Oil filters	6	0.0%	0.0%	0.0%
Mixed Metals/Material	2,537	2.8%	2.0%	3.6%
Organics	**11,014**	**12.1%**		
Leaves and Grass	1,086	1.2%	0.5%	1.8%
Prunings	190	0.2%	0.0%	0.4%
Food	2,004	2.2%	1.7%	2.7%
Textiles/Clothing	1,830	2.0%	1.1%	2.9%
Mixed Textiles	1,103	1.2%	0.5%	2.0%
Carpet	3,598	4.0%	2.3%	5.6%
Disposable Diapers	106	0.1%	0.0%	0.2%
Animal By-products	498	0.5%	0.2%	0.9%
Rubber Products	588	0.6%	0.2%	1.1%
Tires	10	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**51,575**	**56.8%**		
Clean Dimension Lumber	5,912	6.5%	5.1%	7.9%
Clean Engineered Wood	4,961	5.5%	4.2%	6.7%
Pallets	370	0.4%	0.2%	0.6%
Crates	279	0.3%	0.1%	0.6%
Other Untreated Wood	323	0.4%	0.1%	0.6%
New Painted Wood	10,024	11.0%	9.1%	13.0%
Old Painted Wood	3,148	3.5%	2.1%	4.8%
Creosote-treated Wood	396	0.4%	0.0%	0.9%
Other Treated Wood	1,335	1.5%	0.9%	2.0%
Contaminated Wood	5,206	5.7%	4.2%	7.3%
New Gypsum Scrap	1,416	1.6%	0.8%	2.3%
Demo Gypsum Scrap	2,806	3.1%	1.7%	4.5%
Fiberglass Insulation	199	0.2%	0.1%	0.4%
Rock/Concrete/Bricks	4,615	5.1%	3.2%	6.9%
Asphalt Shingles	1,243	1.4%	0.2%	2.5%
Other Asphaltic Roofing	367	0.4%	0.0%	0.9%
Ceramics	1,314	1.4%	0.9%	2.0%
Other Construction	7,660	8.4%	6.5%	10.4%
Appliances & Electronics	**6,901**	**7.6%**		
Furniture	4,663	5.1%	3.5%	6.8%
Mattresses	1,557	1.7%	0.4%	3.1%
Small Appliances	127	0.1%	0.0%	0.2%
Audio/Visual Equipment	508	0.6%	0.3%	0.8%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	46	0.1%	0.0%	0.1%
Potentially Harmful Waste	**1,135**	**1.2%**		
Latex Paint	267	0.3%	0.1%	0.5%
Solvent-based Adhesives	10	0.0%	0.0%	0.0%
Water-based Adhesives	122	0.1%	0.0%	0.3%
Oil-based Paint/Thinners	20	0.0%	0.0%	0.0%
Caustic Cleaners	99	0.1%	0.0%	0.2%
Pesticides/Herbicides	471	0.5%	0.0%	1.0%
Dry-cell Batteries	6	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	6	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	22	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	1	0.0%	0.0%	0.0%
Medical Wastes	19	0.0%	0.0%	0.0%
Other Chemicals	59	0.1%	0.0%	0.1%
Other Potentially Harmful Waste	32	0.0%	0.0%	0.1%
Fines & Misc Materials	**2,727**	**3.0%**		
Sand/Soil/Dirt	2,214	2.4%	1.5%	3.4%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	457	0.5%	0.3%	0.7%
Misc. Inorganics	56	0.1%	0.0%	0.1%

Total Percent	**100%**
Total Tons	**90,829**
Sample Count	**216**

2.4 Results by Self-haul Subpopulation

Waste composition estimates were calculated for the various subpopulations of the self-haul substream, including: transfer station, vehicle type, season, and generator type by transfer station.

The largest components (each accounting for more than 5% of the total tonnage) for each subpopulation are shown in Table 2-7. *New painted wood* and *other construction* were large components of all self-haul subpopulations. In addition, *clean dimensional lumber*, *clean engineered wood*, and *contaminated wood* were among the most prevalent materials in most self-haul subpopulations. When the data are stratified, (e.g., according to season) the sample size for each analysis is smaller, which means that the calculations are subject to a more substantial range of error. Please see Section 6 for more detail regarding the self-haul substream.

Table 2-7. Largest Waste Components: by Self-haul Subpopulation
(January – December 2008)

Subpopulation	CDL Wastes							Plastics	Appliances & Electronics	Organics
	New Painted Wood	Clean Dim. Lumber	Clean Eng. Wood	Contam. Wood	Old Painted Wood	Rock / Concrete / Bricks	Other Construction Debris	Durable Plastic Products	Furniture	Carpet
Transfer Station										
NRDS	10.3%	6.4%	5.4%	5.9%	5.5%	5.3%	9.7%			
SRDS	11.9%	6.6%	5.6%	5.6%			7.1%		7.4%	
Vehicle Type										
Car	9.0%			6.7%		15.2%	8.1%	7.9%		
Truck	11.2%	6.6%	5.6%	5.7%			8.5%		5.5%	
Season										
Spring	13.5%	5.0%	5.6%	9.7%		6.9%	6.2%		5.4%	
Summer	8.6%	9.0%	7.5%				10.9%			
Autumn	16.0%	6.7%					5.2%			
Winter	5.8%	5.0%		5.0%	8.4%		11.6%		8.1%	
Generator Type, by Site										
Residential, NRDS	13.7%		5.2%	7.4%		9.2%	8.6%			
Residential, SRDS	13.9%	6.8%	5.7%	5.8%			5.6%		12.2%	
Non-residential, NRDS	6.2%	8.4%	6.5%		8.5%		12.1%			5.4%
Non-residential, SRDS	9.6%	7.1%	6.1%	5.0%		5.2%	10.4%		5.0%	
Overall Self-Haul	**11.0%**	**6.5%**	**5.5%**	**5.7%**		**5.1%**	**8.4%**		**5.1%**	

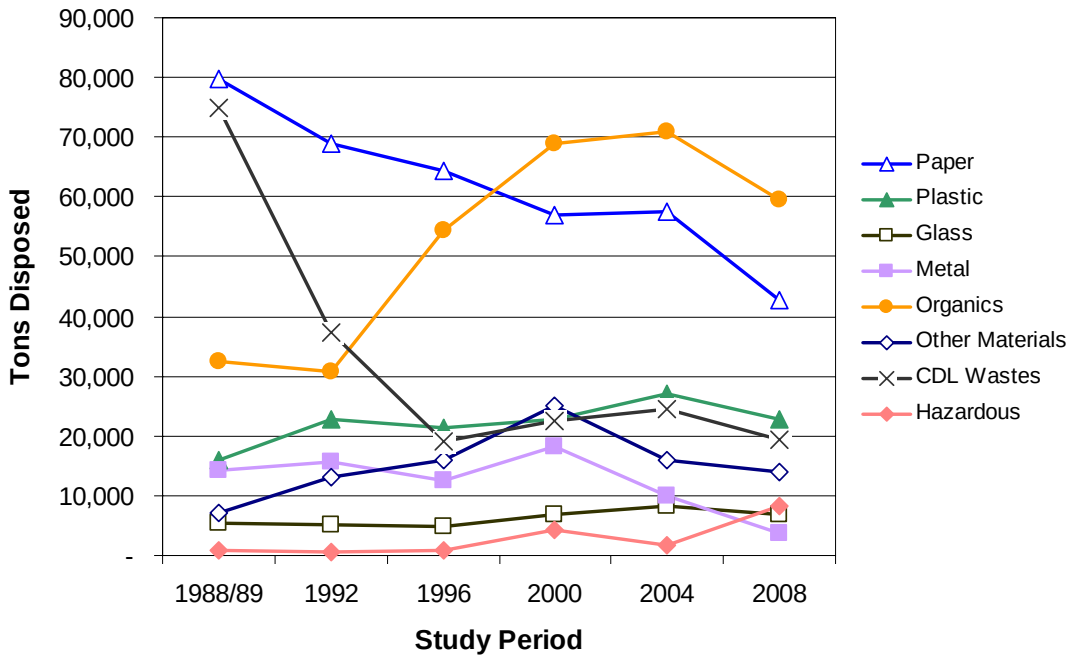
3 Commercial Results Compared to Previous Studies

In this section, the commercial results from the Year 2008 study are compared to the 1988/89, 1992, 1996, 2000, and 2004 findings. These studies followed the same basic methodology as the Year 2008 study. Changes in the composition percentages and the total amount of waste disposed of each broad waste category were analyzed to compare findings among study periods.[6] Section 3.1 provides an overview of the changes in the last 20 years. Sections 3.2 and 3.3 provide detailed results of the comparisons.

3.1 Trends in Disposed Commercial Waste

Figure 3-1 illustrates the changes in disposed commercial waste over the last 20 years. Overall, the quantity of disposed commercial waste decreased from about 230,780 tons in 1988/89 to about 194,338 in 1992. Disposal remained relatively steady from 1992 to 1996 (about 193,793 tons). In 2000, commercial loads disposed 225,435 tons (an increase of about 31,642 tons). By 2004, disposal decreased to 215,921 tons. In 2008, 176,777 tons were disposed of, a decrease from the last study and the lowest tonnage since these studies began. Overall, the **paper**, **organics**, and **CDL wastes** broad material categories showed the greatest changes since the 1988/89 study year.[7] While waste in the **Paper** and **CDL** broad material categories decreased since 1988/89, **Organics** waste showed a large increase.

Figure 3-1. Changes in Commercial Disposed Tons, 1988/89 to 2008



[6] The composition percentages used to analyze the differences in disposed tonnage, and to perform statistical tests were calculated using unweighted averages. Please see Appendix D for more detail.

[7] For the purposes of comparisons with previous studies, material components in this section are organized into eight broad component categories as defined in the 2000 study: **paper**, **plastic**, **glass**, **metal**, **organics**, **other materials**, **CDL wastes**, and **hazardous**. Because of changes in the category definitions since 2000, the numbers reported in this section differ slightly from those in other parts of this report. Appendix A shows the history of how materials have changed throughout the studies, and Appendix E lists material components included in the eight broad material categories.

3.2 Changes in Commercial Waste: 1988/89 to 2008

In Table 3-1, broad material categories that are bolded showed significant differences between the 1988/89 and 2008 study periods. **Paper**, **plastic**, **organics**, **other materials** (such as *textiles/clothing*, *carpet/upholstery and furniture*), **CDL wastes**, and **hazardous** all changed significantly.[8] The proportion of **CDL wastes** decreased from about 32.5% (75,004 tons) in 1988/89 to 11.0% (19,359 tons) in 2008. **Organics** displayed the largest increase in proportion from 14.1% (32,517 tons) in 1988/89 to 33.8% (59,663 tons) in 2008.

Table 3-1. Changes in Commercial Waste: 1988/89 to 2008*

	Percent		Change in	Disposed Tons	
	1988/89	2008	Composition %	1988/89	2008
Paper	**34.6%**	**24.1%**	**-10.5%** ↓	**79,827**	**42,628**
Plastic	**6.9%**	**12.8%**	**6.0%** ↑	**15,878**	**22,700**
Glass	2.3%	1.7%	-0.6% ↑	5,308	3,010
Metal	6.1%	4.1%	-2.0% ↓	14,170	7,310
Organics	**14.1%**	**33.8%**	**19.7%** ↑	**32,517**	**59,663**
Other Materials	**3.1%**	**7.8%**	**4.7%** ↑	**7,154**	**13,827**
CDL Wastes	**32.5%**	**11.0%**	**-21.5%** ↓	**75,004**	**19,359**
Hazardous	**0.4%**	**4.7%**	**4.3%** ↑	**923**	**8,280**
Total	100%	100%		230,780	176,777

* Bold type indicates statistically significant changes.

3.3 Changes in Commercial Waste: 2004 to 2008

Glass and *hazardous* categories experienced significant changes between the 2004 and 2008 study periods. As shown in Table 3-2, the proportion of **Glass** decreased from 3.8% (8,290 tons) in 2004 to 1.7% (3,010 tons) in 2008. In 2004, **Hazardous** made up 0.7% (1,596 tons) of the total commercial substream. This proportion increased to 4.7% (8,280 tons) in 2008.

Table 3-2. Changes in Commercial Waste: 2004 to 2008*

	Percent		Change in	Disposed Tons	
	2004	2008	Composition %	2004	2008
Paper	26.6%	24.1%	-2.5% ↓	57,401	42,628
Plastic	12.5%	12.8%	0.3% ↑	27,019	22,700
Glass	**3.8%**	**1.7%**	**-2.1%** ↓	**8,290**	**3,010**
Metal	4.7%	4.1%	-0.5% ↓	10,066	7,310
Organics	32.9%	33.8%	0.9% ↑	70,941	59,663
Other Materials	7.4%	7.8%	0.4% ↑	16,027	13,827
CDL Wastes	11.4%	11.0%	-0.4% ↓	24,581	19,359
Hazardous	**0.7%**	**4.7%**	**3.9%** ↑	**1,596**	**8,280**
Total	100%	100%		215,921	176,777

* Bold type indicates statistically significant changes.

[8] For the purposes of this study, only those calculation results with a p-value of less than 1.25% are considered to be statistically significant. For more detail about these calculations, please see Appendix D.

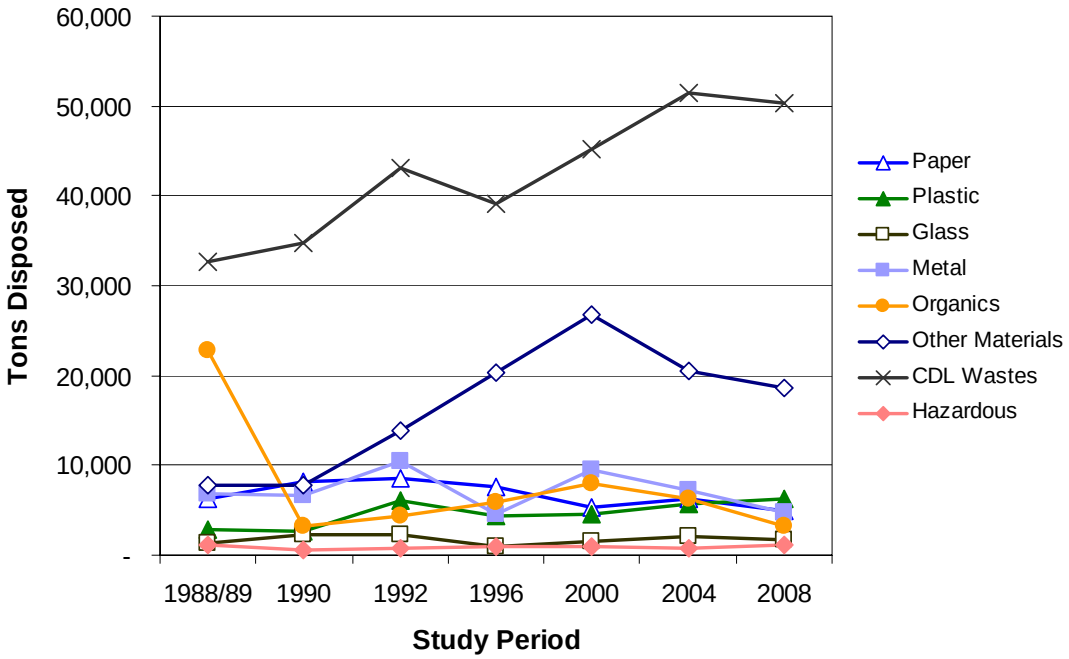
4 Self-haul Results Compared to Previous Studies

Self-haul results from 2008 are compared with the results of the 1988/89, 1990, 1992, 1996, 2000, and 2004 studies in this section. As with the commercial substream, both composition percentages and the total amount of waste disposed of each broad material category were analyzed for the self-haul substream.[9] Section 4.1 provides an overview of the changes in the last 20 years. Sections 4.2 and Section 4.3 provide the detailed results of the comparisons.

4.1 Trends in Disposed Self-haul Waste

Changes in the quantity of disposed self-haul waste over the last 20 years are depicted in Figure 4-1. The total amount of self-haul waste decreased from 81,475 tons in 1988/89 to 66,198 tons in 1990. Disposal then increased to 89,308 tons in 1992, followed by a slight decrease to 83,724 tons in 1996 and then increased to 101,882 tons in 2000. Disposal remained relatively stable in 2004, with a total of 99,980 tons. In 2008, the self-haul substream disposed of 90,829 tons. Overall, **organics**, **other materials**, and **CDL wastes** showed the greatest changes over the last 20 years.[10] Compared to 1988/89, self-haul vehicles disposed of more **other materials** and **CDL wastes** and less **organics** in 2008.

Figure 4-1. Changes in Self-haul Disposed Tons, 1988/89 to 2008



[9] As with the commercial substream comparisons in Section 3, the composition percentages used to analyze the differences in disposed tonnage, and to perform statistical tests were calculated using unweighted averages. Please Appendix D for more detail.

[10] For the purposes of comparisons with previous studies, material components in this section are organized into eight broad component categories as defined in the 2000 study: **paper**, **plastic**, **glass**, **metal**, **organics**, **other materials**, **CDL wastes**, and **hazardous**. Because of changes in the category definitions since 2000, the numbers reported in this section differ slightly from those in other parts of this report. Appendix A shows the history of how materials have changed throughout the studies, and Appendix E lists material components included in the eight broad material categories.

4.2 Changes in Self-haul Waste: 1988/89 to 2008

In Table 4-1, bolded broad material categories experienced significant differences between the 1988/89 and 2008 study periods. **Plastic**, **metal**, **organics**, **other materials**, and **CDL wastes** displayed a significant change. The proportion of **organics** decreased from about 27.9% (22,691 tons) in 1988/89 to 3.6% (3,280 tons) in 2008, while **CDL wastes** increased in proportion from 40.1% (32,639 tons) in 1988/89 to 55.3% (50,261 tons) in 2008.

Table 4-1. Changes in Self-haul Waste: 1988/89 to 2008*

	Percent		Change in	Disposed Tons	
	1988/89	2008	Composition %	1988/89	2008
Paper	7.8%	5.4%	-2.4% ↓	6,314	4,875
Plastic	**3.5%**	**6.8%**	**3.3%** ↑	**2,852**	**6,220**
Glass	1.7%	1.9%	0.1% ↑	1,401	1,689
Metal	**8.3%**	**5.2%**	**-3.2%** ↓	**6,787**	**4,692**
Organics	**27.9%**	**3.6%**	**-24.2%** ↓	**22,691**	**3,280**
Other Materials	**9.5%**	**20.6%**	**11.1%** ↑	**7,708**	**18,677**
CDL Wastes	**40.1%**	**55.3%**	**15.3%** ↑	**32,639**	**50,261**
Hazardous	1.3%	1.2%	-0.1% ↓	1,084	1,135
Total	**100%**	**100%**		**81,475**	**90,829**

* Bold type indicates statistically significant changes.

4.3 Changes in Self-haul Waste: 2004 to 2008

As shown in Table 4-2, **organics** showed a significant change in proportion from the 2004 study period to the 2008 study period. The proportion of **organics** decreased from 6.3% (6,254 tons) in 2004 to 3.6% (3,280 tons) in 2008.

Table 4-2. Changes in Self-haul Waste: 2004 to 2008*

	Percent		Change in	Disposed Tons	
	2004	2008	Composition %	2004	2008
Paper	6.3%	5.4%	-0.9% ↓	6,257	4,875
Plastic	5.7%	6.8%	1.2% ↑	5,652	6,220
Glass	2.0%	1.9%	-0.2% ↓	2,018	1,689
Metal	7.2%	5.2%	-2.0% ↓	7,163	4,692
Organics	**6.3%**	**3.6%**	**-2.6%** ↓	**6,254**	**3,280**
Other Materials	20.4%	20.6%	0.1% ↑	20,414	18,677
CDL Wastes	51.5%	55.3%	3.8% ↑	51,520	50,261
Hazardous	0.7%	1.2%	0.5% ↑	704	1,135
Total	**100%**	**100%**		**99,980**	**90,829**

* Bold type indicates statistically significant changes.

5 Commercial Composition Results, by Subpopulation

A total of 271 loads from the commercial substream were sampled from January to December 2008. Table 5-1 summarizes the sample information for each commercial subpopulation. The average sample weight for the 271 commercial samples was approximately 255 pounds. The City and its two contracted haulers provided the total 2008 disposal tonnages presented in this section of the report.

As shown in Table 5-1, many of the generator-specific analyses are based on a very small number of samples and are thus subject to a relatively wide margin of error.[11]

Table 5-1. Description of Samples for each Commercial Subpopulation
(January – December 2008)

	(All Weights in pounds)		
Subpopulation	**SAMPLE COUNT**	**TOTAL SAMPLE**	**AVERAGE SAMPLE**
Vehicle Type			
Front Loader	140	35,712.1	255.1
Rear Loader	8	1,875.2	234.4
Compactor Roll-off	65	16,414.2	252.5
Loose Roll-off	58	15,131.8	260.9
Season			
Spring	45	11,722.7	260.5
Summer	60	15,073.3	251.2
Autumn	55	13,434.4	244.3
Winter	111	28,902.8	260.4
Generator Type			
CDL	3	808.5	269.5
Education	3	662.9	221.0
Health Care	14	3,527.8	252.0
Hotel/Motel	3	650.2	216.7
Manufacturing	11	2,746.3	249.7
Office	10	2,487.0	248.7
Other Services	26	6,680.7	256.9
Retail	25	6,240.7	249.6
Transportation	13	3,672.7	282.5
Wholesale	9	2,435.4	270.6
Mixed Generator Types	151	38,325.9	253.8
Overall Commercial	**271**	**69,133.3**	**255.1**

* A total of 3 samples were not categorized by generator type.

[11] There was no intent to capture a certain number of samples from any particular generator type. Sample selection was based on vehicle type; please refer to Appendix C for more detail.

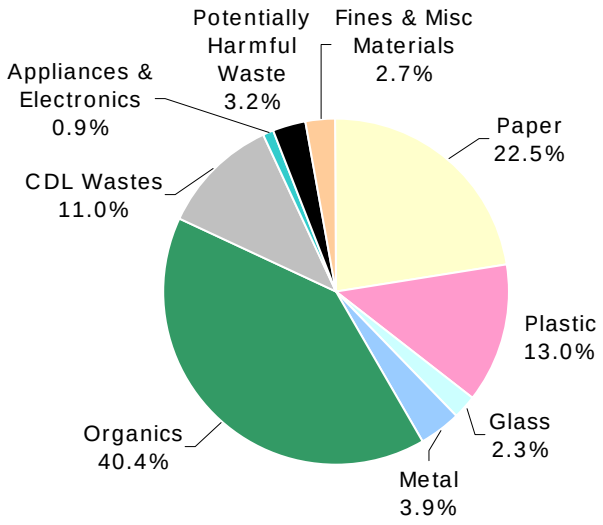
5.1 Commercial Composition by Vehicle Type

Figure 5-1 displays the overall composition results, by weight, of the waste disposed by front loaders, rear loaders, compactor roll-offs, and loose roll-offs. Combined, **paper** and **organics** accounted for between nearly 50% in loose roll-offs to almost 80% in rear loaders. The following sections examine each vehicle type's waste in more detail.

Figure 5-1. Commercial Composition Summary: by Vehicle Type
(January – December 2008)

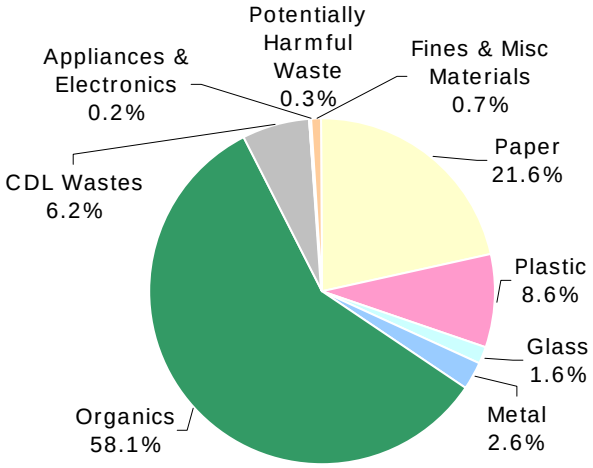
Front Loaders

(47% of commercial tons)



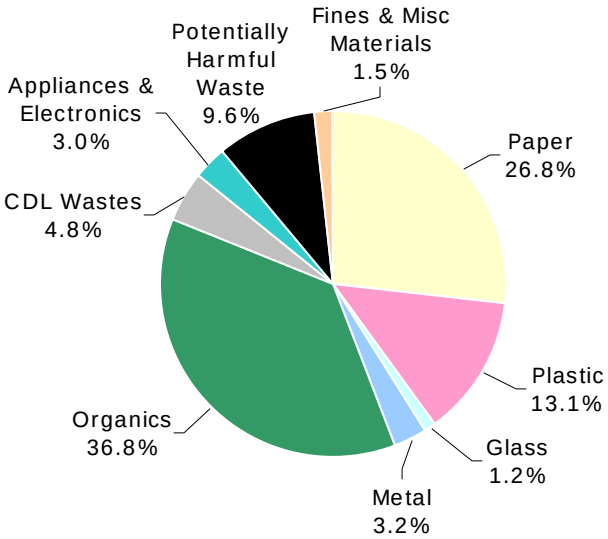
Rear Loaders

(10% of commercial tons)



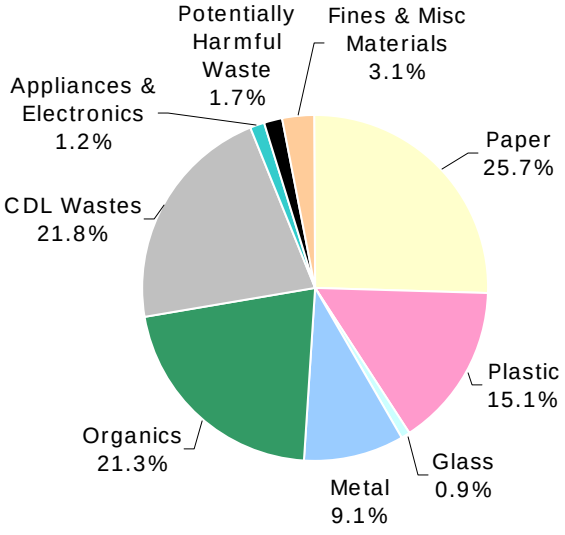
Compactor Roll-off

(31% of commercial tons)



Loose Roll-off

(12% of commercial tons)



5.1.1 Front Loaders

A total of 140 front loader packer truckloads were sampled during this study period. Commercial front loaders disposed approximately 83,067 tons of waste, or about 47% of the commercial waste stream, during the study period. The composition estimates for this subpopulation were applied to the 83,067 tons to estimate the amount of waste disposed for each component category. As shown in Table 5-2, *food* was the largest component, accounting for approximately 32% of the total tons disposed by front loaders in 2008. When added together, all of the top ten components summed to nearly 65% of the total, by weight. The full composition results for front loaders are presented in Table 5-6.

Table 5-2. Top Ten Components: Commercial Front Loaders
(January – December 2008)

Component	Mean	Cum. %	Tons
Food	32.2%	32.2%	26,721
Compostable/Soiled Paper	6.1%	38.3%	5,059
Other Plastic Film	4.8%	43.1%	4,021
Mixed Low Grade Paper	4.1%	47.2%	3,430
Plain OCC/Kraft	4.0%	51.2%	3,296
Other Construction Debris	3.1%	54.3%	2,541
Mixed/Other Paper	2.9%	57.2%	2,432
Durable Plastic Products	2.7%	59.9%	2,266
Leaves and Grass	2.7%	62.6%	2,250
Medical Wastes	2.4%	65.0%	1,995
Total	**65.0%**		**54,011**

5.1.2 Rear Loaders

Eight rear loaders were sampled from the commercial substream. Commercial rear loaders disposed approximately 18,593 tons of waste, or approximately 10% of the commercial waste stream. The composition estimates for this subpopulation were applied to the 18,593 tons to estimate the amount of waste disposed for each component category. Table 5-3 lists the top ten components disposed by rear loader trucks. *Food* alone accounted for approximately 49%, by weight. *Compostable/soiled paper* made up slightly more than 7% of the total. The top ten components listed in Table 5-3 summed to approximately 82% of the total waste disposed by rear loaders. The full composition results for rear loaders are listed in Table 5-7.

Table 5-3. Top Ten Components: Commercial Rear Loaders
(January – December 2008)

Component	Mean	Cum. %	Tons
Food	49.3%	49.3%	9,174
Compostable/Soiled Paper	7.1%	56.5%	1,326
Textiles/Clothing	4.7%	61.2%	877
Mixed Low Grade Paper	4.7%	65.9%	875
Other Plastic Film	4.6%	70.5%	854
Plain OCC/Kraft	4.5%	75.0%	838
High Grade Paper	2.3%	77.3%	419
Clean Dimensional Lumber	1.8%	79.1%	342
Clean Engineered Wood	1.5%	80.6%	279
Animal By-products	1.5%	82.1%	279
Total	**82.1%**		**15,265**

5.1.3 Compactor Roll-offs

There were a total of 65 samples taken from compactor roll-off boxes during this study period. Commercial compactor roll-offs disposed approximately 54,203 tons of waste (about 31% of the commercial waste stream) from January to December 2008. The composition estimates for this subpopulation were applied to the 54,203 tons to estimate the amount of waste disposed for each component category. As shown in Table 5-4, *food* was the largest component of waste hauled in compactors and accounted for about 32% of the total compactor tonnage, by weight. *Medical wastes*, *compostable/soiled paper*, and *plain OCC/Kraft paper* were also large components. Together, the top ten components made up approximately 74% of the total, by weight. Table 5-8 contains detailed composition results for compactor roll-offs.

Table 5-4. Top Ten Components: Commercial Compactor Roll-offs
(January – December 2008)

Component	Mean	Cum. %	Tons
Food	32.2%	32.2%	17,476
Medical Wastes	9.3%	41.5%	5,041
Compostable/Soiled Paper	7.6%	49.1%	4,096
Plain OCC/Kraft	6.3%	55.4%	3,433
Other Plastic Film	4.7%	60.2%	2,570
Mixed Low Grade Paper	4.2%	64.4%	2,299
Single-use Food Service Paper	2.8%	67.2%	1,497
Plastic/Other Materials	2.4%	69.6%	1,315
High Grade Paper	2.1%	71.8%	1,164
Mixed/Other Paper	1.7%	73.5%	928
Total	**73.5%**		**39,819**

5.1.4 Loose Roll-offs

A total of 58 commercial samples were captured from loose roll-off drop boxes. Commercial loose roll-offs disposed approximately 20,913 tons of waste during this period, making up approximately 12% of the commercial waste stream. The composition estimates for this subpopulation were applied to the 20,913 tons to estimate the amount of waste disposed for each component category. Table 5-5 lists the top ten components of waste hauled in loose roll-offs. *Food* was the largest component, accounting for about 12% of loose roll-off tonnage, by weight). When summed, the top ten components made up about 54% of all loose roll-off waste. Table 5-9 lists the complete composition results for loose roll-offs.

Table 5-5. Top Ten Components Commercial Loose Roll-offs
(January – December 2008)

Component	Mean	Cum. %	Tons
Food	12.2%	12.2%	2,543
Plain OCC/Kraft	8.1%	20.3%	1,697
Pallets	6.2%	26.4%	1,288
Mixed Metals/Material	5.1%	31.5%	1,067
Mixed/Other Paper	5.0%	36.6%	1,055
Durable Plastic Products	4.7%	41.3%	986
Compostable/Soiled Paper	3.7%	45.0%	770
Carpet	3.3%	48.3%	694
Other Ferrous Metal	3.1%	51.4%	644
Other Construction Debris	3.0%	54.4%	623
Total	**54.4%**		**11,369**

5.1.5 Comparisons among Vehicle Types

The wastes disposed by front loaders, rear loaders, compactor roll-offs, and loose roll-offs contain many of the same top ten components. *Food* was the largest component for waste hauled by all vehicle types. *Compostable/soiled paper* and *plain OCC/Kraft paper* were also top ten components for all vehicle types. *Other plastic film* and *mixed low grade paper* were top ten components for all vehicle types except loose roll-offs.

There were also differences among the top ten components in waste hauled by these vehicles. *Textiles/clothing*, *clean engineered wood*, and *animal by-products* were top ten components for rear loaders only while *pallets*, *carpet*, and *other ferrous metal* were top ten components for loose roll-offs only. *Leaves and grass* only appeared in the top ten component list for front loaders. *Plastic/other materials* and *single-use food service paper* were unique to compactor roll-offs.

Table 5-6. Composition by Weight: Commercial Front Loaders
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**18,689**	**22.5%**		
Newspaper	1,554	1.9%	1.3%	2.5%
Plain OCC/Kraft	3,296	4.0%	3.0%	4.9%
Waxed OCC/Kraft	205	0.2%	0.1%	0.4%
High Grade	1,288	1.6%	1.0%	2.1%
Mixed Low Grade	3,430	4.1%	3.4%	4.9%
Compostable/Soiled	5,059	6.1%	5.2%	7.0%
Single-use Food Service	1,425	1.7%	1.2%	2.2%
Mixed/Other Paper	2,432	2.9%	2.0%	3.9%
Plastic	**10,827**	**13.0%**		
#1 PET Bottles	360	0.4%	0.4%	0.5%
#2 HDPE Natural Bottles	206	0.2%	0.2%	0.3%
#2 HDPE Colored Bottles	166	0.2%	0.1%	0.3%
Other Bottles	35	0.0%	0.0%	0.1%
Tubs	672	0.8%	0.4%	1.2%
Expanded Poly. Nonfood	311	0.4%	0.2%	0.5%
Expanded Poly. Food grade	311	0.4%	0.3%	0.5%
Single-use Food Service	394	0.5%	0.4%	0.6%
Other Rigid Packaging	279	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	116	0.1%	0.1%	0.2%
Clean PE Film	394	0.5%	0.3%	0.7%
Other Film	4,021	4.8%	4.3%	5.4%
Durable Plastic Products	2,266	2.7%	1.1%	4.3%
Plastic/Other Materials	1,295	1.6%	0.7%	2.4%
Glass	**1,884**	**2.3%**		
Clear Bottles	817	1.0%	0.4%	1.6%
Green Bottles	338	0.4%	0.3%	0.5%
Brown Bottles	402	0.5%	0.3%	0.6%
Container Glass	75	0.1%	0.0%	0.1%
Fluorescent Tubes	12	0.0%	0.0%	0.0%
Flat Glass	76	0.1%	0.0%	0.2%
Other Glass	164	0.2%	0.1%	0.3%
Metal	**3,211**	**3.9%**		
Alum. Beverage Cans	184	0.2%	0.2%	0.3%
Alum. Foil/Containers	85	0.1%	0.1%	0.1%
Other Aluminum	108	0.1%	0.0%	0.3%
Other Nonferrous	2	0.0%	0.0%	0.0%
Tin Food Cans	426	0.5%	0.4%	0.7%
Empty Aerosol Cans	71	0.1%	0.1%	0.1%
Other Ferrous	963	1.2%	0.8%	1.5%
Oil filters	36	0.0%	0.0%	0.1%
Mixed Metals/Material	1,335	1.6%	1.0%	2.2%
Organics	**33,556**	**40.4%**		
Leaves and Grass	2,250	2.7%	1.4%	4.1%
Prunings	807	1.0%	0.3%	1.6%
Food	26,721	32.2%	28.4%	35.9%
Textiles/Clothing	1,269	1.5%	0.8%	2.2%
Mixed Textiles	379	0.5%	0.3%	0.6%
Carpet	330	0.4%	0.0%	0.9%
Disposable Diapers	662	0.8%	0.5%	1.1%
Animal By-products	827	1.0%	0.4%	1.6%
Rubber Products	194	0.2%	0.1%	0.3%
Tires	116	0.1%	0.0%	0.3%

	Tons	Mean	Low	High
CDL Wastes	**9,167**	**11.0%**		
Clean Dimension Lumber	1,637	2.0%	1.3%	2.7%
Clean Engineered Wood	976	1.2%	0.6%	1.7%
Pallets	738	0.9%	0.2%	1.6%
Crates	194	0.2%	0.0%	0.5%
Other Untreated Wood	146	0.2%	0.0%	0.5%
New Painted Wood	454	0.5%	0.3%	0.8%
Old Painted Wood	59	0.1%	0.0%	0.2%
Creosote-treated Wood	34	0.0%	0.0%	0.1%
Other Treated Wood	56	0.1%	0.0%	0.1%
Contaminated Wood	593	0.7%	0.3%	1.1%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	410	0.5%	0.1%	0.8%
Fiberglass Insulation	36	0.0%	0.0%	0.1%
Rock/Concrete/Bricks	959	1.2%	0.3%	2.0%
Asphalt Shingles	155	0.2%	0.0%	0.4%
Other Asphaltic Roofing	54	0.1%	0.0%	0.2%
Ceramics	124	0.1%	0.0%	0.3%
Other Construction	2,541	3.1%	1.3%	4.8%
Appliances & Electronics	**788**	**0.9%**		
Furniture	444	0.5%	0.0%	1.2%
Mattresses	0	0.0%	0.0%	0.0%
Small Appliances	28	0.0%	0.0%	0.1%
Audio/Visual Equipment	123	0.1%	0.0%	0.3%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	62	0.1%	0.0%	0.2%
Other Computer Equipment	131	0.2%	0.0%	0.3%
Potentially Harmful Waste	**2,683**	**3.2%**		
Latex Paint	292	0.4%	0.0%	0.8%
Solvent-based Adhesives	1	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	153	0.2%	0.0%	0.4%
Caustic Cleaners	11	0.0%	0.0%	0.0%
Pesticides/Herbicides	2	0.0%	0.0%	0.0%
Dry-cell Batteries	19	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	27	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	1,995	2.4%	1.0%	3.8%
Other Chemicals	119	0.1%	0.0%	0.4%
Other Potentially Harmful Waste	64	0.1%	0.0%	0.2%
Fines & Misc Materials	**2,263**	**2.7%**		
Sand/Soil/Dirt	1,368	1.6%	0.6%	2.7%
Non-distinct Fines	28	0.0%	0.0%	0.1%
Misc. Organics	865	1.0%	0.6%	1.5%
Misc. Inorganics	1	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**83,067**
Sample Count	**140**

Table 5-7. Composition by Weight: Commercial Rear Loaders
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**4,020**	**21.6%**		
Newspaper	242	1.3%	0.7%	1.9%
Plain OCC/Kraft	838	4.5%	3.1%	5.9%
Waxed OCC/Kraft	2	0.0%	0.0%	0.0%
High Grade	419	2.3%	0.8%	3.7%
Mixed Low Grade	875	4.7%	3.1%	6.3%
Compostable/Soiled	1,326	7.1%	4.5%	9.8%
Single-use Food Service	167	0.9%	0.2%	1.5%
Mixed/Other Paper	151	0.8%	0.4%	1.2%
Plastic	**1,603**	**8.6%**		
#1 PET Bottles	135	0.7%	0.5%	1.0%
#2 HDPE Natural Bottles	35	0.2%	0.0%	0.4%
#2 HDPE Colored Bottles	41	0.2%	0.1%	0.3%
Other Bottles	11	0.1%	0.0%	0.1%
Tubs	76	0.4%	0.3%	0.5%
Expanded Poly. Nonfood	23	0.1%	0.0%	0.2%
Expanded Poly. Food grade	43	0.2%	0.2%	0.3%
Single-use Food Service	44	0.2%	0.0%	0.4%
Other Rigid Packaging	69	0.4%	0.3%	0.4%
Store/Dry Cleaning Bags	71	0.4%	0.2%	0.5%
Clean PE Film	0	0.0%	0.0%	0.0%
Other Film	854	4.6%	3.2%	5.9%
Durable Plastic Products	127	0.7%	0.4%	1.0%
Plastic/Other Materials	74	0.4%	0.0%	0.9%
Glass	**301**	**1.6%**		
Clear Bottles	114	0.6%	0.2%	1.0%
Green Bottles	20	0.1%	0.1%	0.1%
Brown Bottles	63	0.3%	0.2%	0.5%
Container Glass	50	0.3%	0.1%	0.4%
Fluorescent Tubes	0	0.0%	0.0%	0.0%
Flat Glass	0	0.0%	0.0%	0.0%
Other Glass	54	0.3%	0.0%	0.6%
Metal	**478**	**2.6%**		
Alum. Beverage Cans	70	0.4%	0.2%	0.5%
Alum. Foil/Containers	40	0.2%	0.1%	0.3%
Other Aluminum	0	0.0%	0.0%	0.0%
Other Nonferrous	8	0.0%	0.0%	0.1%
Tin Food Cans	137	0.7%	0.3%	1.1%
Empty Aerosol Cans	35	0.2%	0.1%	0.3%
Other Ferrous	96	0.5%	0.2%	0.8%
Oil filters	16	0.1%	0.0%	0.2%
Mixed Metals/Material	77	0.4%	0.1%	0.7%
Organics	**10,807**	**58.1%**		
Leaves and Grass	53	0.3%	0.1%	0.5%
Prunings	64	0.3%	0.0%	1.0%
Food	9,174	49.3%	41.4%	57.3%
Textiles/Clothing	877	4.7%	2.4%	7.0%
Mixed Textiles	124	0.7%	0.0%	1.4%
Carpet	0	0.0%	0.0%	0.0%
Disposable Diapers	220	1.2%	0.3%	2.0%
Animal By-products	279	1.5%	0.3%	2.7%
Rubber Products	16	0.1%	0.0%	0.2%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**1,153**	**6.2%**		
Clean Dimension Lumber	342	1.8%	0.0%	3.6%
Clean Engineered Wood	279	1.5%	0.0%	3.0%
Pallets	0	0.0%	0.0%	0.0%
Crates	0	0.0%	0.0%	0.0%
Other Untreated Wood	197	1.1%	0.0%	2.3%
New Painted Wood	75	0.4%	0.0%	0.9%
Old Painted Wood	6	0.0%	0.0%	0.1%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	0	0.0%	0.0%	0.0%
Contaminated Wood	50	0.3%	0.0%	0.8%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0	0.0%	0.0%	0.0%
Fiberglass Insulation	0	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0	0.0%	0.0%	0.0%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	184	1.0%	0.0%	2.2%
Ceramics	21	0.1%	0.0%	0.2%
Other Construction	0	0.0%	0.0%	0.0%
Appliances & Electronics	**42**	**0.2%**		
Furniture	0	0.0%	0.0%	0.0%
Mattresses	0	0.0%	0.0%	0.0%
Small Appliances	42	0.2%	0.0%	0.5%
Audio/Visual Equipment	0	0.0%	0.0%	0.0%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	0	0.0%	0.0%	0.0%
Potentially Harmful Waste	**55**	**0.3%**		
Latex Paint	0	0.0%	0.0%	0.0%
Solvent-based Adhesives	0	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0	0.0%	0.0%	0.0%
Caustic Cleaners	13	0.1%	0.0%	0.2%
Pesticides/Herbicides	0	0.0%	0.0%	0.0%
Dry-cell Batteries	6	0.0%	0.0%	0.1%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	0	0.0%	0.0%	0.0%
Other Chemicals	36	0.2%	0.0%	0.4%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**134**	**0.7%**		
Sand/Soil/Dirt	0	0.0%	0.0%	0.0%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	134	0.7%	0.2%	1.2%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**18,593**
Sample Count	**8**

Table 5-8. Composition by Weight: Commercial Compactor Roll-offs
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**14,545**	**26.8%**		
Newspaper	694	1.3%	0.6%	2.0%
Plain OCC/Kraft	3,433	6.3%	3.8%	8.8%
Waxed OCC/Kraft	434	0.8%	0.4%	1.2%
High Grade	1,164	2.1%	1.2%	3.1%
Mixed Low Grade	2,299	4.2%	3.3%	5.2%
Compostable/Soiled	4,096	7.6%	5.6%	9.5%
Single-use Food Service	1,497	2.8%	1.8%	3.7%
Mixed/Other Paper	928	1.7%	1.1%	2.4%
Plastic	**7,106**	**13.1%**		
#1 PET Bottles	281	0.5%	0.4%	0.7%
#2 HDPE Natural Bottles	195	0.4%	0.1%	0.6%
#2 HDPE Colored Bottles	252	0.5%	0.0%	1.0%
Other Bottles	6	0.0%	0.0%	0.0%
Tubs	188	0.3%	0.2%	0.5%
Expanded Poly. Nonfood	353	0.7%	0.1%	1.2%
Expanded Poly. Food grade	104	0.2%	0.1%	0.3%
Single-use Food Service	418	0.8%	0.4%	1.1%
Other Rigid Packaging	183	0.3%	0.2%	0.5%
Store/Dry Cleaning Bags	70	0.1%	0.1%	0.2%
Clean PE Film	399	0.7%	0.4%	1.1%
Other Film	2,570	4.7%	3.9%	5.5%
Durable Plastic Products	772	1.4%	0.8%	2.0%
Plastic/Other Materials	1,315	2.4%	0.8%	4.0%
Glass	**633**	**1.2%**		
Clear Bottles	200	0.4%	0.2%	0.5%
Green Bottles	97	0.2%	0.1%	0.3%
Brown Bottles	88	0.2%	0.1%	0.3%
Container Glass	42	0.1%	0.0%	0.1%
Fluorescent Tubes	3	0.0%	0.0%	0.0%
Flat Glass	16	0.0%	0.0%	0.1%
Other Glass	186	0.3%	0.1%	0.6%
Metal	**1,715**	**3.2%**		
Alum. Beverage Cans	135	0.2%	0.2%	0.3%
Alum. Foil/Containers	36	0.1%	0.0%	0.1%
Other Aluminum	118	0.2%	0.0%	0.5%
Other Nonferrous	0	0.0%	0.0%	0.0%
Tin Food Cans	185	0.3%	0.2%	0.5%
Empty Aerosol Cans	10	0.0%	0.0%	0.0%
Other Ferrous	408	0.8%	0.4%	1.1%
Oil filters	0	0.0%	0.0%	0.0%
Mixed Metals/Material	824	1.5%	0.5%	2.5%
Organics	**19,966**	**36.8%**		
Leaves and Grass	221	0.4%	0.0%	0.9%
Prunings	84	0.2%	0.0%	0.3%
Food	17,476	32.2%	26.5%	37.9%
Textiles/Clothing	613	1.1%	0.5%	1.8%
Mixed Textiles	566	1.0%	0.5%	1.6%
Carpet	75	0.1%	0.0%	0.4%
Disposable Diapers	500	0.9%	0.3%	1.6%
Animal By-products	126	0.2%	0.0%	0.5%
Rubber Products	306	0.6%	0.0%	1.2%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**2,578**	**4.8%**		
Clean Dimension Lumber	183	0.3%	0.1%	0.5%
Clean Engineered Wood	39	0.1%	0.0%	0.2%
Pallets	634	1.2%	0.5%	1.9%
Crates	106	0.2%	0.0%	0.4%
Other Untreated Wood	1	0.0%	0.0%	0.0%
New Painted Wood	288	0.5%	0.1%	1.0%
Old Painted Wood	34	0.1%	0.0%	0.2%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	0	0.0%	0.0%	0.0%
Contaminated Wood	278	0.5%	0.1%	0.9%
New Gypsum Scrap	16	0.0%	0.0%	0.1%
Demo Gypsum Scrap	15	0.0%	0.0%	0.1%
Fiberglass Insulation	0	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	309	0.6%	0.0%	1.5%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0	0.0%	0.0%	0.0%
Ceramics	172	0.3%	0.0%	0.6%
Other Construction	503	0.9%	0.0%	2.2%
Appliances & Electronics	**1,632**	**3.0%**		
Furniture	107	0.2%	0.0%	0.5%
Mattresses	338	0.6%	0.0%	1.4%
Small Appliances	558	1.0%	0.1%	2.0%
Audio/Visual Equipment	494	0.9%	0.1%	1.7%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	135	0.2%	0.0%	0.5%
Potentially Harmful Waste	**5,189**	**9.6%**		
Latex Paint	1	0.0%	0.0%	0.0%
Solvent-based Adhesives	0	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0	0.0%	0.0%	0.0%
Caustic Cleaners	17	0.0%	0.0%	0.1%
Pesticides/Herbicides	5	0.0%	0.0%	0.0%
Dry-cell Batteries	40	0.1%	0.0%	0.2%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	11	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	5,041	9.3%	4.8%	13.8%
Other Chemicals	74	0.1%	0.0%	0.3%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**839**	**1.5%**		
Sand/Soil/Dirt	257	0.5%	0.0%	1.2%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	582	1.1%	0.5%	1.7%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**54,203**
Sample Count	**65**

Table 5-9. Composition by Weight: Commercial Loose Roll-offs
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**5,373**	**25.7%**		
Newspaper	152	0.7%	0.5%	1.0%
Plain OCC/Kraft	1,697	8.1%	5.4%	10.8%
Waxed OCC/Kraft	120	0.6%	0.2%	1.0%
High Grade	449	2.1%	0.7%	3.6%
Mixed Low Grade	547	2.6%	1.6%	3.7%
Compostable/Soiled	770	3.7%	2.5%	4.9%
Single-use Food Service	583	2.8%	2.2%	3.4%
Mixed/Other Paper	1,055	5.0%	2.7%	7.4%
Plastic	**3,164**	**15.1%**		
#1 PET Bottles	70	0.3%	0.2%	0.4%
#2 HDPE Natural Bottles	50	0.2%	0.2%	0.3%
#2 HDPE Colored Bottles	72	0.3%	0.0%	0.7%
Other Bottles	12	0.1%	0.0%	0.1%
Tubs	127	0.6%	0.2%	1.0%
Expanded Poly. Nonfood	376	1.8%	0.2%	3.4%
Expanded Poly. Food grade	58	0.3%	0.1%	0.4%
Single-use Food Service	68	0.3%	0.2%	0.4%
Other Rigid Packaging	23	0.1%	0.1%	0.1%
Store/Dry Cleaning Bags	16	0.1%	0.0%	0.1%
Clean PE Film	485	2.3%	0.9%	3.7%
Other Film	613	2.9%	2.0%	3.8%
Durable Plastic Products	986	4.7%	2.7%	6.7%
Plastic/Other Materials	209	1.0%	0.5%	1.5%
Glass	**192**	**0.9%**		
Clear Bottles	71	0.3%	0.2%	0.5%
Green Bottles	33	0.2%	0.0%	0.3%
Brown Bottles	32	0.2%	0.1%	0.2%
Container Glass	0	0.0%	0.0%	0.0%
Fluorescent Tubes	5	0.0%	0.0%	0.1%
Flat Glass	0	0.0%	0.0%	0.0%
Other Glass	52	0.2%	0.1%	0.4%
Metal	**1,905**	**9.1%**		
Alum. Beverage Cans	30	0.1%	0.1%	0.2%
Alum. Foil/Containers	8	0.0%	0.0%	0.1%
Other Aluminum	0	0.0%	0.0%	0.0%
Other Nonferrous	61	0.3%	0.0%	0.6%
Tin Food Cans	73	0.3%	0.1%	0.6%
Empty Aerosol Cans	7	0.0%	0.0%	0.1%
Other Ferrous	644	3.1%	1.9%	4.3%
Oil filters	15	0.1%	0.0%	0.2%
Mixed Metals/Material	1,067	5.1%	2.7%	7.5%
Organics	**4,459**	**21.3%**		
Leaves and Grass	158	0.8%	0.0%	1.7%
Prunings	112	0.5%	0.0%	1.2%
Food	2,543	12.2%	8.1%	16.2%
Textiles/Clothing	317	1.5%	0.9%	2.2%
Mixed Textiles	314	1.5%	0.4%	2.6%
Carpet	694	3.3%	0.0%	7.0%
Disposable Diapers	65	0.3%	0.1%	0.5%
Animal By-products	35	0.2%	0.0%	0.4%
Rubber Products	220	1.1%	0.2%	2.0%
Tires	0	0.0%	0.0%	0.0%

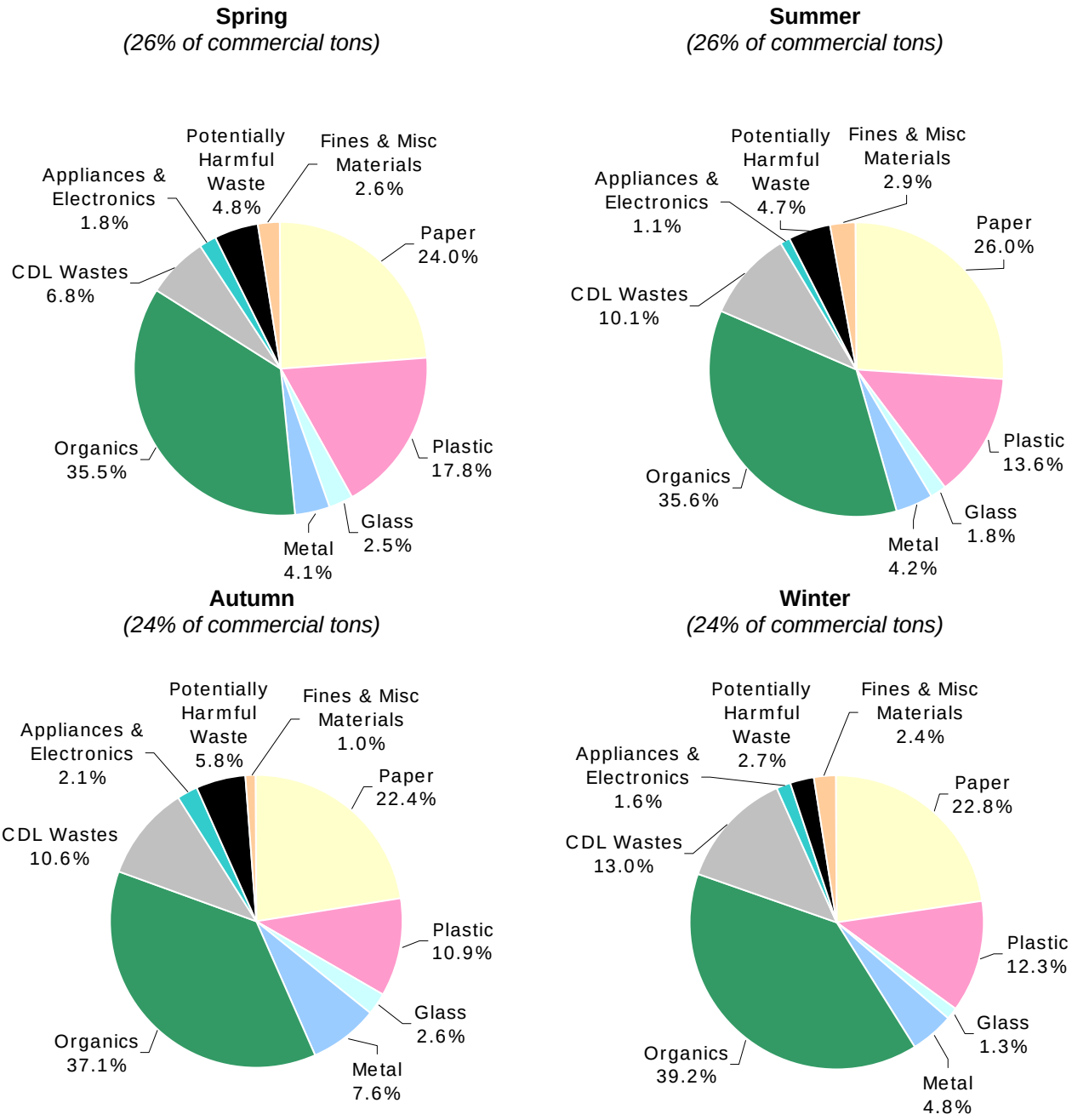
	Tons	Mean	Low	High
CDL Wastes	**4,568**	**21.8%**		
Clean Dimension Lumber	434	2.1%	0.9%	3.2%
Clean Engineered Wood	349	1.7%	0.5%	2.9%
Pallets	1,288	6.2%	2.1%	10.3%
Crates	254	1.2%	0.0%	2.4%
Other Untreated Wood	8	0.0%	0.0%	0.1%
New Painted Wood	178	0.9%	0.3%	1.4%
Old Painted Wood	237	1.1%	0.0%	2.3%
Creosote-treated Wood	36	0.2%	0.0%	0.4%
Other Treated Wood	101	0.5%	0.0%	1.1%
Contaminated Wood	409	2.0%	0.9%	3.0%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	213	1.0%	0.0%	2.1%
Fiberglass Insulation	154	0.7%	0.1%	1.3%
Rock/Concrete/Bricks	236	1.1%	0.0%	2.6%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	1	0.0%	0.0%	0.0%
Ceramics	47	0.2%	0.0%	0.4%
Other Construction	623	3.0%	1.4%	4.5%
Appliances & Electronics	**243**	**1.2%**		
Furniture	143	0.7%	0.0%	1.5%
Mattresses	0	0.0%	0.0%	0.0%
Small Appliances	26	0.1%	0.0%	0.3%
Audio/Visual Equipment	71	0.3%	0.0%	0.8%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	4	0.0%	0.0%	0.0%
Potentially Harmful Waste	**354**	**1.7%**		
Latex Paint	39	0.2%	0.0%	0.4%
Solvent-based Adhesives	3	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	3	0.0%	0.0%	0.0%
Caustic Cleaners	1	0.0%	0.0%	0.0%
Pesticides/Herbicides	2	0.0%	0.0%	0.0%
Dry-cell Batteries	46	0.2%	0.0%	0.5%
Wet-cell Batteries	206	1.0%	0.0%	2.5%
Gasoline/Kerosene	6	0.0%	0.0%	0.1%
Motor Oil/Diesel Oil	12	0.1%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	0	0.0%	0.0%	0.0%
Other Chemicals	35	0.2%	0.0%	0.4%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**655**	**3.1%**		
Sand/Soil/Dirt	602	2.9%	0.3%	5.4%
Non-distinct Fines	3	0.0%	0.0%	0.0%
Misc. Organics	50	0.2%	0.0%	0.5%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**20,913**
Sample Count	**58**

5.2 Commercial Composition by Season

Waste composition results were examined for seasonal variations. Samples were classified into four seasons according to the month in which they were captured: March, April, and May are spring months; June, July, and August are summer; September, October, and November are autumn; and December, January, and February are winter. Figure 5-2 summarizes the results of the broad material categories by season. When summed together, **paper** and **organics** accounted for at least 59% of the total tonnage for each of the four seasons.

Figure 5-2. Commercial Composition Summary: by Season



5.2.1 Spring

A total of 45 samples were captured from commercial loads between the months of March and May 2008. During spring 2008, commercial loads disposed of approximately 45,630 tons of waste, or about 26% of the commercial waste disposed during the entire study period. The composition estimates for this subpopulation were applied to the 45,630 tons to estimate the amount of waste disposed for each component category. *Food* accounted for approximately 29% of the total tons disposed in the spring. *Compostable/soiled paper*, *durable plastic products*, and *other plastic film* were also large components (each more than 5%, by weight). The top ten components, which are listed in Table 5-10, sum to approximately 67% of the total, by weight. Table 5-14 lists the full composition results for commercial waste during this season.

Table 5-10. Top Ten Components: Commercial in Spring
(March – May 2008)

Component	Mean	Cum. %	Tons
Food	29.3%	29.3%	13,369
Compostable/Soiled Paper	6.9%	36.2%	3,150
Durable Plastic Products	5.4%	41.6%	2,470
Other Plastic Film	5.1%	46.7%	2,308
Plain OCC/Kraft	4.7%	51.3%	2,127
Mixed Low Grade Paper	4.5%	55.9%	2,069
Medical Wastes	4.3%	60.1%	1,943
Plastic/Other Materials	2.6%	62.7%	1,171
Textiles/Clothing	2.3%	65.0%	1,038
Single-use Food Service Paper	2.1%	67.1%	967
Total	**67.1%**		**30,612**

5.2.2 Summer

In the summer, 60 samples were taken from the commercial substream. Commercial loads disposed of approximately 45,445 tons waste (about 26% of total commercial waste) during the summer of 2008. The composition estimates for this subpopulation were applied to the 45,445 tons to estimate the amount of waste disposed for each component category. As shown in Table 5-11, *food* was the single largest component, followed by *compostable/soiled paper*, *plain OCC/Kraft paper*, and *other plastic film*. See Table 5-15 for a complete list of the summer composition results.

Table 5-11. Top Ten Components: Commercial in Summer
(June – August 2008)

Component	Mean	Cum. %	Tons
Food	31.1%	31.1%	14,126
Compostable/Soiled Paper	6.9%	38.0%	3,139
Plain OCC/Kraft	6.0%	44.0%	2,732
Other Plastic Film	5.4%	49.4%	2,435
Mixed Low Grade Paper	3.8%	53.2%	1,739
Medical Wastes	3.7%	56.9%	1,699
High Grade Paper	2.6%	59.5%	1,183
Mixed/Other Paper	2.5%	62.0%	1,140
Other Construction Debris	2.2%	64.2%	999
Pallets	2.2%	66.4%	996
Total	**66.4%**		**30,187**

5.2.3 Autumn

Between September and November of 2008, a total of 55 samples were captured from commercial loads. Approximately 24% of the commercial waste disposed during the study period, about 43,316 tons, was disposed during the autumn of 2008. Table 5-12 lists the top ten components of waste disposed in the autumn. *Food* composed about 28% of the total, while *plain OCC/Kraft paper* and *medical wastes* accounted for 5.7% and 5.5%, respectively. When summed together, the top ten components made up nearly 64% of the total waste disposed in the autumn of 2008. Table 5-16 lists the composition results for this season in detail.

Table 5-12. Top Ten Components: Commercial in Autumn
(September – November 2008)

Component	Mean	Cum. %	Tons
Food	28.4%	28.4%	12,283
Plain OCC/Kraft	5.7%	34.1%	2,485
Medical Wastes	5.5%	39.6%	2,366
Compostable/Soiled Paper	5.0%	44.6%	2,186
Mixed Low Grade Paper	3.6%	48.2%	1,556
Mixed Metals/Material	3.4%	51.6%	1,465
Pallets	3.3%	54.8%	1,418
Other Ferrous Metal	3.1%	57.9%	1,325
Mixed/Other Paper	2.9%	60.8%	1,260
Other Plastic Film	2.8%	63.6%	1,223
Total	**63.6%**		**27,566**

5.2.4 Winter

A total of 111 samples were sorted from commercial waste disposed during January, February, and December of 2008. Commercial waste disposed during this season, about 42,386 tons, made up roughly 24% of the commercial waste disposed during the year-long study period. The top ten components are listed in Table 5-13 and sum to approximately 62% of the total, by weight. *Food* was the largest component, making up approximately 30% of the total, followed by *compostable/soiled paper* at more than 5%, by weight. Table 5-17 details the full composition results of commercial waste for winter 2008.

Table 5-13. Top Ten Components: Commercial in Winter
(January, February, and December 2008)

Component	Mean	Cum. %	Tons
Food	30.1%	30.1%	12,754
Compostable/Soiled Paper	5.4%	35.5%	2,286
Other Plastic Film	4.4%	39.9%	1,863
Plain OCC/Kraft	4.3%	44.2%	1,831
Mixed Low Grade Paper	4.0%	48.2%	1,693
Mixed/Other Paper	3.6%	51.8%	1,524
Other Construction Debris	2.7%	54.5%	1,149
Leaves and Grass	2.6%	57.1%	1,117
Durable Plastic Products	2.6%	59.7%	1,093
Mixed Metals/Material	2.2%	61.9%	943
Total	**61.9%**		**26,254**

5.2.5 Comparisons among Seasons

Food was the largest component of commercial waste disposed in each of the four seasons. *Compostable/soiled paper* was one of the four largest components in all seasons. There were many common components making up the top ten components among the four seasons, such as *food*, *compostable/soiled paper*, *mixed low grade paper*, *plain OCC/Kraft paper*, and *other plastic film*. Several components were specific to the top ten components for individual seasons: *other ferrous metal* in the autumn, *leaves and grass* in the winter, *high grade paper* in the summer, and *plastic/other materials* in the spring.

Table 5-14. Composition by Weight: Commercial in Spring
(March – May 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**10,963**	**24.0%**		
Newspaper	614	1.3%	0.8%	1.9%
Plain OCC/Kraft	2,127	4.7%	3.3%	6.1%
Waxed OCC/Kraft	319	0.7%	0.2%	1.2%
High Grade	751	1.6%	0.8%	2.4%
Mixed Low Grade	2,069	4.5%	3.0%	6.0%
Compostable/Soiled	3,150	6.9%	4.6%	9.2%
Single-use Food Service	967	2.1%	1.2%	3.1%
Mixed/Other Paper	966	2.1%	1.2%	3.1%
Plastic	**8,124**	**17.8%**		
#1 PET Bottles	272	0.6%	0.4%	0.8%
#2 HDPE Natural Bottles	206	0.5%	0.1%	0.8%
#2 HDPE Colored Bottles	256	0.6%	0.0%	1.2%
Other Bottles	12	0.0%	0.0%	0.1%
Tubs	216	0.5%	0.0%	0.9%
Expanded Poly. Nonfood	91	0.2%	0.0%	0.4%
Expanded Poly. Food grade	247	0.5%	0.2%	0.9%
Single-use Food Service	276	0.6%	0.4%	0.8%
Other Rigid Packaging	141	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	31	0.1%	0.0%	0.1%
Clean PE Film	428	0.9%	0.5%	1.4%
Other Film	2,308	5.1%	4.0%	6.1%
Durable Plastic Products	2,470	5.4%	0.0%	11.1%
Plastic/Other Materials	1,171	2.6%	0.3%	4.8%
Glass	**1,156**	**2.5%**		
Clear Bottles	337	0.7%	0.4%	1.1%
Green Bottles	178	0.4%	0.1%	0.7%
Brown Bottles	277	0.6%	0.2%	1.0%
Container Glass	34	0.1%	0.0%	0.1%
Fluorescent Tubes	0	0.0%	0.0%	0.0%
Flat Glass	123	0.3%	0.0%	0.7%
Other Glass	207	0.5%	0.0%	0.9%
Metal	**1,863**	**4.1%**		
Alum. Beverage Cans	127	0.3%	0.1%	0.4%
Alum. Foil/Containers	37	0.1%	0.0%	0.1%
Other Aluminum	1	0.0%	0.0%	0.0%
Other Nonferrous	1	0.0%	0.0%	0.0%
Tin Food Cans	293	0.6%	0.3%	0.9%
Empty Aerosol Cans	32	0.1%	0.0%	0.1%
Other Ferrous	347	0.8%	0.4%	1.1%
Oil filters	95	0.2%	0.0%	0.5%
Mixed Metals/Material	929	2.0%	0.2%	3.9%
Organics	**16,208**	**35.5%**		
Leaves and Grass	44	0.1%	0.0%	0.2%
Prunings	130	0.3%	0.0%	0.7%
Food	13,369	29.3%	21.4%	37.2%
Textiles/Clothing	1,038	2.3%	0.7%	3.9%
Mixed Textiles	445	1.0%	0.2%	1.8%
Carpet	77	0.2%	0.0%	0.5%
Disposable Diapers	469	1.0%	0.2%	1.9%
Animal By-products	387	0.8%	0.1%	1.6%
Rubber Products	193	0.4%	0.1%	0.7%
Tires	55	0.1%	0.0%	0.3%

	Tons	Mean	Low	High
CDL Wastes	**3,117**	**6.8%**		
Clean Dimension Lumber	485	1.1%	0.4%	1.7%
Clean Engineered Wood	357	0.8%	0.1%	1.5%
Pallets	174	0.4%	0.0%	0.9%
Crates	16	0.0%	0.0%	0.1%
Other Untreated Wood	0	0.0%	0.0%	0.0%
New Painted Wood	279	0.6%	0.0%	1.2%
Old Painted Wood	19	0.0%	0.0%	0.1%
Creosote-treated Wood	88	0.2%	0.0%	0.5%
Other Treated Wood	7	0.0%	0.0%	0.0%
Contaminated Wood	445	1.0%	0.2%	1.8%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	18	0.0%	0.0%	0.1%
Fiberglass Insulation	449	1.0%	0.0%	2.2%
Rock/Concrete/Bricks	79	0.2%	0.0%	0.4%
Asphalt Shingles	8	0.0%	0.0%	0.0%
Other Asphaltic Roofing	38	0.1%	0.0%	0.2%
Ceramics	103	0.2%	0.0%	0.5%
Other Construction	553	1.2%	0.2%	2.2%
Appliances & Electronics	**843**	**1.8%**		
Furniture	0	0.0%	0.0%	0.0%
Mattresses	0	0.0%	0.0%	0.0%
Small Appliances	487	1.1%	0.0%	2.8%
Audio/Visual Equipment	254	0.6%	0.0%	1.3%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	102	0.2%	0.0%	0.5%
Potentially Harmful Waste	**2,175**	**4.8%**		
Latex Paint	2	0.0%	0.0%	0.0%
Solvent-based Adhesives	0	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0	0.0%	0.0%	0.0%
Caustic Cleaners	3	0.0%	0.0%	0.0%
Pesticides/Herbicides	0	0.0%	0.0%	0.0%
Dry-cell Batteries	98	0.2%	0.0%	0.6%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	2	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	1,943	4.3%	0.0%	8.9%
Other Chemicals	127	0.3%	0.0%	0.7%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**1,181**	**2.6%**		
Sand/Soil/Dirt	751	1.6%	0.4%	2.9%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	431	0.9%	0.0%	2.1%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**45,630**
Sample Count	**45**

Table 5-15. Composition by Weight: Commercial in Summer
(June – August 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**11,838**	**26.0%**		
Newspaper	490	1.1%	0.7%	1.5%
Plain OCC/Kraft	2,732	6.0%	3.6%	8.5%
Waxed OCC/Kraft	498	1.1%	0.3%	1.9%
High Grade	1,183	2.6%	1.3%	3.9%
Mixed Low Grade	1,739	3.8%	3.0%	4.6%
Compostable/Soiled	3,139	6.9%	5.5%	8.3%
Single-use Food Service	917	2.0%	1.3%	2.8%
Mixed/Other Paper	1,140	2.5%	1.0%	4.0%
Plastic	**6,163**	**13.6%**		
#1 PET Bottles	241	0.5%	0.4%	0.6%
#2 HDPE Natural Bottles	94	0.2%	0.1%	0.3%
#2 HDPE Colored Bottles	71	0.2%	0.1%	0.2%
Other Bottles	7	0.0%	0.0%	0.0%
Tubs	504	1.1%	0.0%	2.4%
Expanded Poly. Nonfood	400	0.9%	0.2%	1.5%
Expanded Poly. Food grade	161	0.4%	0.2%	0.5%
Single-use Food Service	265	0.6%	0.4%	0.7%
Other Rigid Packaging	72	0.2%	0.0%	0.3%
Store/Dry Cleaning Bags	71	0.2%	0.1%	0.2%
Clean PE Film	590	1.3%	0.4%	2.2%
Other Film	2,435	5.4%	4.1%	6.6%
Durable Plastic Products	526	1.2%	0.5%	1.8%
Plastic/Other Materials	726	1.6%	1.1%	2.1%
Glass	**823**	**1.8%**		
Clear Bottles	248	0.5%	0.4%	0.7%
Green Bottles	139	0.3%	0.2%	0.5%
Brown Bottles	179	0.4%	0.2%	0.6%
Container Glass	40	0.1%	0.0%	0.1%
Fluorescent Tubes	4	0.0%	0.0%	0.0%
Flat Glass	19	0.0%	0.0%	0.1%
Other Glass	194	0.4%	0.1%	0.7%
Metal	**1,925**	**4.2%**		
Alum. Beverage Cans	121	0.3%	0.2%	0.3%
Alum. Foil/Containers	47	0.1%	0.0%	0.2%
Other Aluminum	103	0.2%	0.0%	0.5%
Other Nonferrous	3	0.0%	0.0%	0.0%
Tin Food Cans	249	0.5%	0.4%	0.7%
Empty Aerosol Cans	13	0.0%	0.0%	0.0%
Other Ferrous	508	1.1%	0.5%	1.7%
Oil filters	1	0.0%	0.0%	0.0%
Mixed Metals/Material	880	1.9%	0.9%	3.0%
Organics	**16,177**	**35.6%**		
Leaves and Grass	348	0.8%	0.1%	1.4%
Prunings	257	0.6%	0.0%	1.1%
Food	14,126	31.1%	25.7%	36.5%
Textiles/Clothing	483	1.1%	0.6%	1.5%
Mixed Textiles	235	0.5%	0.2%	0.8%
Carpet	28	0.1%	0.0%	0.2%
Disposable Diapers	273	0.6%	0.3%	0.9%
Animal By-products	329	0.7%	0.1%	1.4%
Rubber Products	99	0.2%	0.1%	0.4%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**4,573**	**10.1%**		
Clean Dimension Lumber	648	1.4%	0.7%	2.2%
Clean Engineered Wood	353	0.8%	0.3%	1.3%
Pallets	996	2.2%	0.7%	3.7%
Crates	61	0.1%	0.0%	0.4%
Other Untreated Wood	6	0.0%	0.0%	0.0%
New Painted Wood	213	0.5%	0.1%	0.8%
Old Painted Wood	64	0.1%	0.0%	0.3%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	41	0.1%	0.0%	0.2%
Contaminated Wood	452	1.0%	0.5%	1.5%
New Gypsum Scrap	11	0.0%	0.0%	0.1%
Demo Gypsum Scrap	5	0.0%	0.0%	0.0%
Fiberglass Insulation	0	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	592	1.3%	0.0%	2.7%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0	0.0%	0.0%	0.0%
Ceramics	132	0.3%	0.0%	0.6%
Other Construction	999	2.2%	0.7%	3.7%
Appliances & Electronics	**483**	**1.1%**		
Furniture	108	0.2%	0.0%	0.6%
Mattresses	0	0.0%	0.0%	0.0%
Small Appliances	148	0.3%	0.0%	0.7%
Audio/Visual Equipment	163	0.4%	0.0%	0.9%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	64	0.1%	0.0%	0.3%
Potentially Harmful Waste	**2,136**	**4.7%**		
Latex Paint	299	0.7%	0.0%	1.5%
Solvent-based Adhesives	0	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	89	0.2%	0.0%	0.5%
Caustic Cleaners	15	0.0%	0.0%	0.1%
Pesticides/Herbicides	5	0.0%	0.0%	0.0%
Dry-cell Batteries	8	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	20	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	1,699	3.7%	1.3%	6.1%
Other Chemicals	1	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**1,325**	**2.9%**		
Sand/Soil/Dirt	709	1.6%	0.2%	2.9%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	609	1.3%	0.6%	2.0%
Misc. Inorganics	8	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**45,445**
Sample Count	**60**

Table 5-16. Composition by Weight: Commercial in Autumn
(September – November 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**9,700**	**22.4%**		
Newspaper	832	1.9%	0.7%	3.1%
Plain OCC/Kraft	2,485	5.7%	3.9%	7.6%
Waxed OCC/Kraft	335	0.8%	0.3%	1.2%
High Grade	349	0.8%	0.5%	1.1%
Mixed Low Grade	1,556	3.6%	2.4%	4.7%
Compostable/Soiled	2,186	5.0%	3.3%	6.8%
Single-use Food Service	697	1.6%	0.5%	2.7%
Mixed/Other Paper	1,260	2.9%	1.6%	4.2%
Plastic	**4,716**	**10.9%**		
#1 PET Bottles	183	0.4%	0.2%	0.7%
#2 HDPE Natural Bottles	127	0.3%	0.2%	0.4%
#2 HDPE Colored Bottles	100	0.2%	0.1%	0.3%
Other Bottles	1	0.0%	0.0%	0.0%
Tubs	279	0.6%	0.3%	1.0%
Expanded Poly. Nonfood	518	1.2%	0.0%	2.8%
Expanded Poly. Food grade	102	0.2%	0.1%	0.4%
Single-use Food Service	105	0.2%	0.2%	0.3%
Other Rigid Packaging	132	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	56	0.1%	0.0%	0.2%
Clean PE Film	385	0.9%	0.3%	1.4%
Other Film	1,223	2.8%	2.0%	3.6%
Durable Plastic Products	1,066	2.5%	1.4%	3.6%
Plastic/Other Materials	437	1.0%	0.4%	1.6%
Glass	**1,113**	**2.6%**		
Clear Bottles	609	1.4%	0.0%	3.0%
Green Bottles	171	0.4%	0.2%	0.6%
Brown Bottles	165	0.4%	0.2%	0.6%
Container Glass	67	0.2%	0.0%	0.3%
Fluorescent Tubes	7	0.0%	0.0%	0.0%
Flat Glass	0	0.0%	0.0%	0.0%
Other Glass	95	0.2%	0.1%	0.3%
Metal	**3,295**	**7.6%**		
Alum. Beverage Cans	80	0.2%	0.1%	0.2%
Alum. Foil/Containers	26	0.1%	0.0%	0.1%
Other Aluminum	144	0.3%	0.0%	0.9%
Other Nonferrous	1	0.0%	0.0%	0.0%
Tin Food Cans	232	0.5%	0.2%	0.8%
Empty Aerosol Cans	22	0.1%	0.0%	0.1%
Other Ferrous	1,325	3.1%	1.4%	4.7%
Oil filters	0	0.0%	0.0%	0.0%
Mixed Metals/Material	1,465	3.4%	1.2%	5.5%
Organics	**16,080**	**37.1%**		
Leaves and Grass	520	1.2%	0.2%	2.2%
Prunings	269	0.6%	0.0%	1.2%
Food	12,283	28.4%	22.4%	34.4%
Textiles/Clothing	1,198	2.8%	0.9%	4.6%
Mixed Textiles	321	0.7%	0.3%	1.2%
Carpet	119	0.3%	0.0%	0.6%
Disposable Diapers	419	1.0%	0.3%	1.6%
Animal By-products	469	1.1%	0.0%	2.4%
Rubber Products	482	1.1%	0.0%	2.5%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**4,577**	**10.6%**		
Clean Dimension Lumber	232	0.5%	0.2%	0.9%
Clean Engineered Wood	347	0.8%	0.3%	1.3%
Pallets	1,418	3.3%	1.4%	5.2%
Crates	399	0.9%	0.0%	2.0%
Other Untreated Wood	0	0.0%	0.0%	0.0%
New Painted Wood	507	1.2%	0.4%	1.9%
Old Painted Wood	8	0.0%	0.0%	0.0%
Creosote-treated Wood	22	0.1%	0.0%	0.1%
Other Treated Wood	0	0.0%	0.0%	0.0%
Contaminated Wood	930	2.1%	0.9%	3.4%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	176	0.4%	0.0%	0.8%
Fiberglass Insulation	51	0.1%	0.0%	0.3%
Rock/Concrete/Bricks	75	0.2%	0.0%	0.4%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	1	0.0%	0.0%	0.0%
Ceramics	23	0.1%	0.0%	0.1%
Other Construction	387	0.9%	0.1%	1.6%
Appliances & Electronics	**895**	**2.1%**		
Furniture	403	0.9%	0.0%	2.0%
Mattresses	198	0.5%	0.0%	1.2%
Small Appliances	193	0.4%	0.0%	1.0%
Audio/Visual Equipment	96	0.2%	0.0%	0.5%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	5	0.0%	0.0%	0.0%
Potentially Harmful Waste	**2,517**	**5.8%**		
Latex Paint	42	0.1%	0.0%	0.2%
Solvent-based Adhesives	2	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	60	0.1%	0.0%	0.3%
Caustic Cleaners	11	0.0%	0.0%	0.1%
Pesticides/Herbicides	3	0.0%	0.0%	0.0%
Dry-cell Batteries	8	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	2	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	21	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	2,366	5.5%	0.6%	10.3%
Other Chemicals	3	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0	0.0%	0.0%	0.0%
Fines & Misc Materials	**422**	**1.0%**		
Sand/Soil/Dirt	127	0.3%	0.0%	0.6%
Non-distinct Fines	37	0.1%	0.0%	0.2%
Misc. Organics	257	0.6%	0.2%	1.0%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**43,316**
Sample Count	**55**

Table 5-17. Composition by Weight: Commercial in Winter
(January, February, and December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**9,676**	**22.8%**		
Newspaper	727	1.7%	1.1%	2.3%
Plain OCC/Kraft	1,831	4.3%	3.4%	5.2%
Waxed OCC/Kraft	72	0.2%	0.0%	0.3%
High Grade	779	1.8%	1.3%	2.4%
Mixed Low Grade	1,693	4.0%	3.3%	4.7%
Compostable/Soiled	2,286	5.4%	4.4%	6.4%
Single-use Food Service	765	1.8%	1.3%	2.3%
Mixed/Other Paper	1,524	3.6%	2.4%	4.8%
Plastic	**5,201**	**12.3%**		
#1 PET Bottles	174	0.4%	0.3%	0.5%
#2 HDPE Natural Bottles	85	0.2%	0.1%	0.3%
#2 HDPE Colored Bottles	126	0.3%	0.1%	0.5%
Other Bottles	26	0.1%	0.0%	0.1%
Tubs	225	0.5%	0.4%	0.7%
Expanded Poly. Nonfood	219	0.5%	0.3%	0.7%
Expanded Poly. Food grade	110	0.3%	0.2%	0.3%
Single-use Food Service	233	0.5%	0.3%	0.8%
Other Rigid Packaging	137	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	65	0.2%	0.1%	0.2%
Clean PE Film	301	0.7%	0.4%	1.0%
Other Film	1,863	4.4%	3.8%	5.0%
Durable Plastic Products	1,093	2.6%	1.8%	3.4%
Plastic/Other Materials	545	1.3%	0.4%	2.1%
Glass	**555**	**1.3%**		
Clear Bottles	198	0.5%	0.3%	0.6%
Green Bottles	121	0.3%	0.2%	0.4%
Brown Bottles	107	0.3%	0.1%	0.4%
Container Glass	26	0.1%	0.0%	0.1%
Fluorescent Tubes	5	0.0%	0.0%	0.0%
Flat Glass	14	0.0%	0.0%	0.1%
Other Glass	85	0.2%	0.1%	0.3%
Metal	**2,020**	**4.8%**		
Alum. Beverage Cans	83	0.2%	0.2%	0.2%
Alum. Foil/Containers	35	0.1%	0.1%	0.1%
Other Aluminum	19	0.0%	0.0%	0.1%
Other Nonferrous	44	0.1%	0.0%	0.2%
Tin Food Cans	142	0.3%	0.2%	0.4%
Empty Aerosol Cans	39	0.1%	0.1%	0.1%
Other Ferrous	687	1.6%	1.1%	2.1%
Oil filters	28	0.1%	0.0%	0.1%
Mixed Metals/Material	943	2.2%	1.5%	3.0%
Organics	**16,600**	**39.2%**		
Leaves and Grass	1,117	2.6%	1.5%	3.8%
Prunings	204	0.5%	0.2%	0.8%
Food	12,754	30.1%	25.9%	34.2%
Textiles/Clothing	473	1.1%	0.8%	1.5%
Mixed Textiles	492	1.2%	0.7%	1.6%
Carpet	786	1.9%	0.1%	3.6%
Disposable Diapers	286	0.7%	0.4%	1.0%
Animal By-products	243	0.6%	0.2%	0.9%
Rubber Products	185	0.4%	0.2%	0.7%
Tires	59	0.1%	0.0%	0.3%

	Tons	Mean	Low	High
CDL Wastes	**5,516**	**13.0%**		
Clean Dimension Lumber	842	2.0%	1.1%	2.8%
Clean Engineered Wood	518	1.2%	0.5%	1.9%
Pallets	555	1.3%	0.5%	2.1%
Crates	222	0.5%	0.2%	0.9%
Other Untreated Wood	48	0.1%	0.0%	0.2%
New Painted Wood	286	0.7%	0.3%	1.1%
Old Painted Wood	261	0.6%	0.0%	1.2%
Creosote-treated Wood	20	0.0%	0.0%	0.1%
Other Treated Wood	124	0.3%	0.0%	0.6%
Contaminated Wood	350	0.8%	0.3%	1.4%
New Gypsum Scrap	0	0.0%	0.0%	0.0%
Demo Gypsum Scrap	492	1.2%	0.4%	1.9%
Fiberglass Insulation	35	0.1%	0.0%	0.1%
Rock/Concrete/Bricks	376	0.9%	0.3%	1.5%
Asphalt Shingles	92	0.2%	0.0%	0.5%
Other Asphaltic Roofing	43	0.1%	0.0%	0.2%
Ceramics	102	0.2%	0.1%	0.4%
Other Construction	1,149	2.7%	1.0%	4.4%
Appliances & Electronics	**669**	**1.6%**		
Furniture	195	0.5%	0.0%	0.9%
Mattresses	112	0.3%	0.0%	0.7%
Small Appliances	7	0.0%	0.0%	0.0%
Audio/Visual Equipment	177	0.4%	0.1%	0.7%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	89	0.2%	0.0%	0.6%
Other Computer Equipment	89	0.2%	0.0%	0.4%
Potentially Harmful Waste	**1,138**	**2.7%**		
Latex Paint	51	0.1%	0.0%	0.2%
Solvent-based Adhesives	2	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	5	0.0%	0.0%	0.0%
Caustic Cleaners	4	0.0%	0.0%	0.0%
Pesticides/Herbicides	1	0.0%	0.0%	0.0%
Dry-cell Batteries	46	0.1%	0.0%	0.2%
Wet-cell Batteries	88	0.2%	0.0%	0.5%
Gasoline/Kerosene	7	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	9	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	726	1.7%	0.6%	2.8%
Other Chemicals	144	0.3%	0.0%	0.7%
Other Potentially Toxic	54	0.1%	0.0%	0.3%
Fines & Misc Materials	**1,011**	**2.4%**		
Sand/Soil/Dirt	734	1.7%	0.5%	3.0%
Non-distinct Fines	11	0.0%	0.0%	0.0%
Misc. Organics	266	0.6%	0.4%	0.9%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**42,386**
Sample Count	**111**

5.3 Commercial Composition by Generator Type

As discussed at the beginning of this section, drivers were asked to identify from which type of business they had collected the sample load.[12] Since commercial garbage trucks often haul waste from a variety of different business types, most samples are of the *mixed generator type*. The remaining generator-specific analyses are based on a very small number of samples and are thus subject to a relatively wide margin of error. These results provide rough estimates only.

This section first presents the top ten components for each of the 11 commercial generator types.[13] The detailed composition tables for each commercial generator group follow the top ten tables.

5.3.1 Construction, Demolition, & Landclearing

A total of three *CDL* loads were sampled. As shown in Table 5-18, the top ten components accounted for an estimated 77% of the tonnage. The two largest components, *sand/soil/dirt* and *other construction debris*, each accounted for almost 17% of the total. Table 5-29 shows the detailed composition results for the samples taken from *CDL* generators.

Table 5-18. Top Ten Components: Construction, Demolition, & Landclearing
(January – December 2008)

Component	Mean	Cum. %
Sand/Soil/Dirt	16.9%	16.9%
Other Construction Debris	16.5%	33.4%
Rock/Concrete/Bricks	11.0%	44.3%
Carpet	7.5%	51.8%
Clean Dimensional Lumber	5.7%	57.5%
Clean Polyethylene Film	4.7%	62.2%
Mixed Metals/Material	4.6%	66.8%
Other Ferrous Metal	3.9%	70.6%
Audio/Visual Equipment	3.4%	74.0%
Other Plastic Film	3.3%	77.4%
Total	**77.4%**	

[12] These generator types are defined by Standard Industry Codes (SIC) in Appendix B.
[13] In this study, *restaurant* and o*ther non-residential* were combined with *mixed generator types* because of their small sample size. Results for *mixed generator types* are presented in Table 5-28 and Table 5-39.

5.3.2 Education

A total of three loads from *educational* institutions were sampled. As shown in Table 5-19, *food* accounted for approximately one-fourth of this waste. Table 5-30 shows the detailed composition results for the samples taken from educational institutions.

Table 5-19. Top Ten Components: Education
(January – December 2008)

Component	Mean	Cum. %
Food	25.1%	25.1%
Compostable/Soiled Paper	15.9%	41.0%
Single-use Food Service Paper	9.8%	50.8%
Medical Wastes	7.4%	58.2%
Other Plastic Film	5.6%	63.8%
Small Appliances	4.8%	68.6%
Mixed Low Grade Paper	4.6%	73.2%
Mixed Metals/Material	4.3%	77.5%
Durable Plastic Products	2.7%	80.3%
Animal By-products	2.4%	82.7%
Total	**82.7%**	

5.3.3 Health Care

A total of 14 loads from *health care* facilities were sampled. As shown in Table 5-20, the top ten components accounted for a combined total of 78% of the *health care* waste. Table 5-31 shows the detailed composition results for the samples taken from *health care* facilities.

Table 5-20. Top Ten Components: Health Care
(January – December 2008)

Component	Mean	Cum. %
Medical Wastes	33.5%	33.5%
Food	12.0%	45.4%
Compostable/Soiled Paper	8.7%	54.1%
Pallets	8.6%	62.8%
Other Plastic Film	3.7%	66.5%
Mixed Low Grade Paper	3.0%	69.5%
Mixed/Other Paper	2.6%	72.1%
Single-use Food Service Paper	2.6%	74.7%
Crates	1.9%	76.5%
Plain OCC/Kraft	1.7%	78.2%
Total	**78.2%**	

5.3.4 Hotel/Motel

A total of three loads were sampled from *hotel/motel* generators. As shown in Table 5-21, *Food* made up nearly 28% of this waste, by weight. Table 5-32 shows the detailed composition results for the samples taken from *hotel/motel* generators.

Table 5-21. Top Ten Components: Hotel/Motel
(January – December 2008)

Component	Mean	Cum. %
Food	27.5%	27.5%
Newspaper	14.2%	41.8%
Mixed Low Grade Paper	12.7%	54.4%
Textiles/Clothing	9.8%	64.3%
Other Plastic Film	6.4%	70.6%
Compostable/Soiled Paper	5.8%	76.5%
Mixed/Other Paper	4.4%	80.9%
Plain OCC/Kraft	2.8%	83.7%
#1 PET Bottles	2.6%	86.3%
Disposable Diapers	2.2%	88.4%
Total	**88.4%**	

5.3.5 Manufacturing

A total of 11 loads from *manufacturing* businesses were sampled. As shown in Table 5-22, the top ten components accounted for a combined total of 83% of the tonnage. *Food* and *plain OCC/Kraft paper* each made up slightly more than 20% of this waste, by weight. Table 5-33 shows the detailed composition results for the samples taken from *manufacturing* businesses.

Table 5-22. Top Ten Components: Manufacturing
(January – December 2008)

Component	Mean	Cum. %
Food	21.8%	21.8%
Plain OCC/Kraft	20.5%	42.3%
Plastic/Other Materials	9.2%	51.5%
Pallets	9.0%	60.5%
Clean Polyethylene Film	6.7%	67.2%
Other Construction Debris	3.8%	71.0%
#2 HDPE Colored Bottles	3.4%	74.5%
Other Plastic Film	3.4%	77.9%
Mixed/Other Paper	2.7%	80.6%
Waxed OCC/Kraft	2.2%	82.8%
Total	**82.8%**	

5.3.6 Office

A total of ten samples were taken from *office* waste loads. As shown in Table 5-23, the top ten components accounted for a combined total of about 76% of the tonnage. Table 5-34 shows the detailed composition results for the samples taken from *office* waste loads.

Table 5-23. Top Ten Components: Office
(January – December 2008)

Component	Mean	Cum. %
Food	28.8%	28.8%
Compostable/Soiled Paper	13.2%	42.0%
High Grade Paper	7.2%	49.2%
Mixed Low Grade Paper	6.1%	55.3%
Other Plastic Film	5.4%	60.7%
Plain OCC/Kraft	3.5%	64.2%
Sand/Soil/Dirt	3.4%	67.5%
Disposable Diapers	2.8%	70.4%
Pallets	2.6%	73.0%
Durable Plastic Products	2.5%	75.5%
Total	**75.5%**	

5.3.7 Other Services

A total of 26 samples were taken from *other services* loads. As shown in Table 5-24, the top ten components accounted for a combined total of 57% of the tonnage. Table 5-35 shows the detailed composition results for the samples taken from *other services* loads.

Table 5-24. Top Ten Components: Other Services
(January – December 2008)

Component	Mean	Cum. %
Food	18.0%	18.0%
Plain OCC/Kraft	6.9%	24.9%
Mixed/Other Paper	6.4%	31.2%
Durable Plastic Products	4.9%	36.2%
Compostable/Soiled Paper	4.2%	40.4%
Other Plastic Film	3.9%	44.3%
Mixed Low Grade Paper	3.4%	47.7%
Carpet	3.4%	51.1%
Single-use Food Service Paper	3.1%	54.3%
Textiles/Clothing	2.7%	57.0%
Total	**57.0%**	

5.3.8 Retail

A total of 25 samples were taken from *retail* business loads. As shown in Table 5-25, the top ten components accounted for a combined total of nearly 69% of the tonnage. *Food* made up nearly one-third of retail waste, by weight. Table 5-36 shows the detailed composition results for the samples taken from *retail* loads.

Table 5-25. Top Ten Components: Retail
(January – December 2008)

Component	Mean	Cum. %
Food	32.5%	32.5%
Plain OCC/Kraft	9.2%	41.7%
Other Plastic Film	5.1%	46.8%
Mixed Metals/Material	4.9%	51.7%
Mixed/Other Paper	3.5%	55.2%
Contaminated Wood	3.4%	58.7%
Mixed Low Grade Paper	2.8%	61.5%
Furniture	2.4%	63.9%
Other Ferrous Metal	2.4%	66.2%
Compostable/Soiled Paper	2.3%	68.5%
Total	**68.5%**	

5.3.9 Transportation

A total of 13 samples were taken from the *transportation* industry. As shown in Table 5-26, the top ten components accounted for a combined total of nearly 59% of the tonnage. Table 5-37 shows the detailed composition results for the samples taken from the *transportation* loads.

Table 5-26. Top Ten Components: Transportation
(January – December 2008)

Component	Mean	Cum. %
Food	10.6%	10.6%
Plain OCC/Kraft	9.3%	19.9%
Other Ferrous Metal	6.6%	26.5%
Contaminated Wood	5.5%	32.0%
Durable Plastic Products	5.3%	37.3%
Pallets	4.6%	41.9%
Mixed Metals/Material	4.5%	46.3%
Compostable/Soiled Paper	4.4%	50.7%
Plastic/Other Materials	4.1%	54.8%
Fiberglass Insulation	4.0%	58.8%
Total	**58.8%**	

5.3.10 Wholesale

A total of nine samples were taken from *wholesale* establishments. As shown in Table 5-27, *food* accounted for nearly 36% of the *wholesale* waste. Table 5-38 shows the detailed composition results for the samples taken from *wholesale* establishments.

Table 5-27. Top Ten Components: Wholesale
(January – December 2008)

Component	Mean	Cum. %
Food	35.9%	35.9%
Compostable/Soiled Paper	5.2%	41.1%
Demo Gypsum Scrap	5.2%	46.2%
Plain OCC/Kraft	5.1%	51.3%
Plastic Tubs	4.7%	56.0%
Sand/Soil/Dirt	4.4%	60.4%
Other Plastic Film	4.1%	64.5%
Mixed/Other Paper	3.9%	68.5%
Mixed Metals/Material	3.7%	72.1%
Mixed Low Grade Paper	3.1%	75.2%
Total	**75.2%**	

5.3.11 Mixed Commercial Generators

A total of 151 samples were taken from *mixed commercial generator* loads. Also included in this generator type is one *other non-residential* and one *restaurant* sample. As shown in Table 5-28, *Food* accounted for approximately 34% of this waste, by weight. Table 5-39 shows the detailed composition results for the samples taken from *mixed commercial generator* loads.

Table 5-28. Top Ten Components: Mixed Commercial Generators
(January – December 2008)

Component	Mean	Cum. %
Food	34.2%	34.2%
Compostable/Soiled Paper	5.9%	40.2%
Other Plastic Film	4.9%	45.0%
Mixed Low Grade Paper	4.1%	49.1%
Plain OCC/Kraft	3.6%	52.7%
Leaves and Grass	2.6%	55.3%
Mixed/Other Paper	2.5%	57.9%
Durable Plastic Products	2.1%	60.0%
Other Construction Debris	2.1%	62.1%
Medical Wastes	1.9%	64.0%
Total	**64.0%**	

5.3.12 Comparisons among Generator Types

Food was the largest waste component disposed by all generator types, except *CDL* and *health care* generators. On the other hand, *animal by-products* from *education* generators, and *plastic tubs* from *wholesale* generators were among the top ten components only from these generator groups.

Table 5-29. Composition by Weight: Construction, Demolition & Landclearing
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**6.9%**		
Newspaper	0.0%	0.0%	0.0%
Plain OCC/Kraft	1.4%	0.3%	2.5%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	0.0%	0.0%	0.0%
Mixed Low Grade	2.0%	0.0%	5.0%
Compostable/Soiled	0.5%	0.0%	1.2%
Single-use Food Service	0.1%	0.0%	0.2%
Mixed/Other Paper	2.9%	0.0%	7.2%
Plastic	**10.8%**		
#1 PET Bottles	0.1%	0.1%	0.2%
#2 HDPE Natural Bottles	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	0.0%	0.0%	0.0%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.0%	0.0%	0.1%
Expanded Poly. Nonfood	0.9%	0.0%	2.2%
Expanded Poly. Food grade	0.0%	0.0%	0.0%
Single-use Food Service	0.1%	0.0%	0.4%
Other Rigid Packaging	0.0%	0.0%	0.0%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	4.7%	0.0%	11.1%
Other Film	3.3%	1.2%	5.4%
Durable Plastic Products	1.0%	0.0%	2.2%
Plastic/Other Materials	0.5%	0.2%	0.8%
Glass	**0.3%**		
Clear Bottles	0.1%	0.0%	0.2%
Green Bottles	0.0%	0.0%	0.0%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.1%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.1%	0.0%	0.4%
Metal	**10.3%**		
Alum. Beverage Cans	0.1%	0.0%	0.2%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.1%	0.0%	0.2%
Other Nonferrous	1.5%	0.0%	3.7%
Tin Food Cans	0.1%	0.0%	0.3%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	3.9%	0.0%	9.6%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	4.6%	0.0%	11.3%
Organics	**11.0%**		
Leaves and Grass	0.0%	0.0%	0.0%
Prunings	0.0%	0.0%	0.1%
Food	0.9%	0.0%	2.2%
Textiles/Clothing	0.9%	0.1%	1.7%
Mixed Textiles	0.0%	0.0%	0.0%
Carpet	7.5%	0.0%	18.4%
Disposable Diapers	0.0%	0.0%	0.0%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	1.8%	0.0%	4.3%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**39.3%**		
Clean Dimension Lumber	5.7%	0.0%	14.8%
Clean Engineered Wood	1.7%	0.0%	3.5%
Pallets	2.7%	0.0%	7.3%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.0%	0.0%	0.0%
Old Painted Wood	0.8%	0.0%	2.3%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	0.0%	0.0%	0.0%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.4%	0.0%	1.0%
Fiberglass Insulation	0.1%	0.0%	0.3%
Rock/Concrete/Bricks	11.0%	0.0%	29.6%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.3%	0.0%	0.9%
Ceramics	0.1%	0.0%	0.3%
Other Construction	16.5%	0.2%	32.8%
Appliances & Electronics	**3.4%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	3.4%	0.0%	8.4%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**1.2%**		
Latex Paint	0.0%	0.0%	0.1%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	1.1%	0.0%	2.8%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**16.9%**		
Sand/Soil/Dirt	16.9%	0.0%	33.9%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.0%	0.0%	0.0%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**3**		

Table 5-30. Composition by Weight: Education
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**33.8%**		
Newspaper	0.3%	0.0%	0.8%
Plain OCC/Kraft	2.1%	1.4%	2.9%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	0.4%	0.1%	0.7%
Mixed Low Grade	4.6%	2.2%	7.0%
Compostable/Soiled	15.9%	3.6%	28.2%
Single-use Food Service	9.8%	2.6%	17.0%
Mixed/Other Paper	0.7%	0.0%	1.6%
Plastic	**13.5%**		
#1 PET Bottles	0.9%	0.3%	1.4%
#2 HDPE Natural Bottles	0.3%	0.0%	0.7%
#2 HDPE Colored Bottles	0.1%	0.0%	0.2%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.7%	0.0%	1.4%
Expanded Poly. Nonfood	0.1%	0.0%	0.2%
Expanded Poly. Food grade	0.3%	0.0%	0.6%
Single-use Food Service	1.2%	0.4%	1.9%
Other Rigid Packaging	0.4%	0.0%	0.7%
Store/Dry Cleaning Bags	0.5%	0.0%	1.2%
Clean PE Film	0.1%	0.0%	0.2%
Other Film	5.6%	5.1%	6.1%
Durable Plastic Products	2.7%	0.0%	5.9%
Plastic/Other Materials	0.7%	0.0%	1.4%
Glass	**1.5%**		
Clear Bottles	0.5%	0.2%	0.7%
Green Bottles	0.0%	0.0%	0.0%
Brown Bottles	0.0%	0.0%	0.1%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	1.0%	0.0%	2.4%
Metal	**6.3%**		
Alum. Beverage Cans	0.3%	0.1%	0.5%
Alum. Foil/Containers	0.1%	0.0%	0.2%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.4%	0.0%	0.9%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	1.2%	0.0%	3.0%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	4.3%	0.0%	11.3%
Organics	**30.5%**		
Leaves and Grass	0.2%	0.0%	0.6%
Prunings	0.0%	0.0%	0.0%
Food	25.1%	20.2%	30.1%
Textiles/Clothing	0.5%	0.2%	0.8%
Mixed Textiles	0.2%	0.0%	0.5%
Carpet	1.6%	0.0%	4.0%
Disposable Diapers	0.3%	0.0%	0.9%
Animal By-products	2.4%	0.0%	6.2%
Rubber Products	0.1%	0.0%	0.2%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**1.9%**		
Clean Dimension Lumber	0.1%	0.0%	0.3%
Clean Engineered Wood	0.0%	0.0%	0.0%
Pallets	0.0%	0.0%	0.0%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.0%	0.0%	0.0%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	1.8%	0.0%	4.6%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	0.0%	0.0%	0.0%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.0%	0.0%	0.0%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.0%	0.0%	0.0%
Other Construction	0.0%	0.0%	0.0%
Appliances & Electronics	**5.0%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	4.8%	0.0%	13.1%
Audio/Visual Equipment	0.2%	0.0%	0.5%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**7.4%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	7.4%	0.0%	19.2%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**0.2%**		
Sand/Soil/Dirt	0.0%	0.0%	0.0%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.2%	0.0%	0.4%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**3**		

Table 5-31. Composition by Weight: Health Care
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**20.6%**		
Newspaper	0.9%	0.3%	1.5%
Plain OCC/Kraft	1.7%	0.8%	2.5%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	1.1%	0.1%	2.1%
Mixed Low Grade	3.0%	1.8%	4.3%
Compostable/Soiled	8.7%	5.1%	12.3%
Single-use Food Service	2.6%	0.9%	4.3%
Mixed/Other Paper	2.6%	0.4%	4.8%
Plastic	**8.4%**		
#1 PET Bottles	0.3%	0.2%	0.4%
#2 HDPE Natural Bottles	0.2%	0.0%	0.3%
#2 HDPE Colored Bottles	0.2%	0.0%	0.5%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.3%	0.1%	0.5%
Expanded Poly. Nonfood	0.5%	0.1%	0.8%
Expanded Poly. Food grade	0.2%	0.1%	0.3%
Single-use Food Service	0.9%	0.0%	2.0%
Other Rigid Packaging	0.0%	0.0%	0.1%
Store/Dry Cleaning Bags	0.0%	0.0%	0.1%
Clean PE Film	0.1%	0.0%	0.3%
Other Film	3.7%	2.0%	5.5%
Durable Plastic Products	1.2%	0.6%	1.8%
Plastic/Other Materials	0.7%	0.2%	1.3%
Glass	**1.4%**		
Clear Bottles	0.5%	0.1%	0.9%
Green Bottles	0.3%	0.0%	0.9%
Brown Bottles	0.3%	0.0%	0.8%
Container Glass	0.1%	0.0%	0.3%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.1%	0.0%	0.2%
Metal	**2.0%**		
Alum. Beverage Cans	0.3%	0.1%	0.5%
Alum. Foil/Containers	0.0%	0.0%	0.1%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.3%	0.1%	0.6%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	0.4%	0.0%	1.0%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	1.0%	0.0%	2.0%
Organics	**16.2%**		
Leaves and Grass	0.0%	0.0%	0.1%
Prunings	0.0%	0.0%	0.0%
Food	12.0%	6.2%	17.8%
Textiles/Clothing	0.6%	0.1%	1.2%
Mixed Textiles	1.5%	0.0%	3.1%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	1.6%	0.1%	3.1%
Animal By-products	0.4%	0.0%	1.0%
Rubber Products	0.2%	0.0%	0.3%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**14.1%**		
Clean Dimension Lumber	0.3%	0.0%	0.6%
Clean Engineered Wood	0.5%	0.0%	1.3%
Pallets	8.6%	0.0%	17.5%
Crates	1.9%	0.0%	5.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.6%	0.0%	1.6%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	1.2%	0.0%	2.5%
New Gypsum Scrap	0.1%	0.0%	0.2%
Demo Gypsum Scrap	0.3%	0.0%	0.9%
Fiberglass Insulation	0.3%	0.0%	0.8%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.0%	0.0%	0.0%
Other Construction	0.2%	0.0%	0.6%
Appliances & Electronics	**2.3%**		
Furniture	1.1%	0.0%	2.9%
Mattresses	1.2%	0.0%	3.2%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**33.5%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.1%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	33.5%	20.7%	46.3%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**1.5%**		
Sand/Soil/Dirt	0.0%	0.0%	0.0%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	1.5%	0.0%	3.3%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**14**		

Table 5-32. Composition by Weight: Hotel/Motel
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**42.3%**		
Newspaper	14.2%	1.1%	27.4%
Plain OCC/Kraft	2.8%	2.4%	3.2%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	1.6%	0.0%	3.4%
Mixed Low Grade	12.7%	6.1%	19.2%
Compostable/Soiled	5.8%	0.8%	10.9%
Single-use Food Service	0.7%	0.0%	1.5%
Mixed/Other Paper	4.4%	0.0%	11.5%
Plastic	**11.4%**		
#1 PET Bottles	2.6%	0.0%	5.4%
#2 HDPE Natural Bottles	0.5%	0.4%	0.7%
#2 HDPE Colored Bottles	0.3%	0.1%	0.5%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.3%	0.1%	0.6%
Expanded Poly. Nonfood	0.0%	0.0%	0.0%
Expanded Poly. Food grade	0.0%	0.0%	0.1%
Single-use Food Service	0.3%	0.0%	0.6%
Other Rigid Packaging	0.3%	0.2%	0.4%
Store/Dry Cleaning Bags	0.2%	0.1%	0.4%
Clean PE Film	0.0%	0.0%	0.1%
Other Film	6.4%	6.0%	6.7%
Durable Plastic Products	0.3%	0.0%	0.7%
Plastic/Other Materials	0.1%	0.0%	0.2%
Glass	**2.6%**		
Clear Bottles	0.8%	0.0%	1.5%
Green Bottles	0.9%	0.0%	2.4%
Brown Bottles	0.5%	0.0%	1.3%
Container Glass	0.2%	0.0%	0.5%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.3%	0.0%	0.7%
Metal	**1.2%**		
Alum. Beverage Cans	0.3%	0.0%	0.7%
Alum. Foil/Containers	0.1%	0.0%	0.2%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.2%	0.0%	0.3%
Empty Aerosol Cans	0.1%	0.0%	0.3%
Other Ferrous	0.4%	0.0%	1.1%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	0.1%	0.0%	0.2%
Organics	**40.7%**		
Leaves and Grass	0.0%	0.0%	0.0%
Prunings	0.0%	0.0%	0.0%
Food	27.5%	13.4%	41.7%
Textiles/Clothing	9.8%	0.0%	25.1%
Mixed Textiles	1.1%	0.0%	2.8%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	2.2%	0.0%	5.7%
Animal By-products	0.0%	0.0%	0.1%
Rubber Products	0.1%	0.0%	0.2%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**0.4%**		
Clean Dimension Lumber	0.0%	0.0%	0.0%
Clean Engineered Wood	0.0%	0.0%	0.0%
Pallets	0.0%	0.0%	0.0%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.0%	0.0%	0.0%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	0.0%	0.0%	0.0%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.0%	0.0%	0.0%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.4%	0.0%	1.1%
Other Construction	0.0%	0.0%	0.0%
Appliances & Electronics	**0.0%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**0.1%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.1%	0.0%	0.2%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**1.2%**		
Sand/Soil/Dirt	0.0%	0.0%	0.0%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	1.2%	0.1%	2.3%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**3**		

Table 5-33. Composition by Weight: Manufacturing
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**31.6%**		
Newspaper	1.3%	0.0%	2.8%
Plain OCC/Kraft	20.5%	12.7%	28.3%
Waxed OCC/Kraft	2.2%	0.0%	5.8%
High Grade	1.0%	0.0%	2.4%
Mixed Low Grade	1.7%	0.7%	2.8%
Compostable/Soiled	1.9%	0.1%	3.6%
Single-use Food Service	0.2%	0.0%	0.4%
Mixed/Other Paper	2.7%	1.0%	4.5%
Plastic	**27.0%**		
#1 PET Bottles	0.2%	0.0%	0.5%
#2 HDPE Natural Bottles	1.6%	0.0%	3.9%
#2 HDPE Colored Bottles	3.4%	0.0%	8.6%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.0%	0.0%	0.0%
Expanded Poly. Nonfood	1.4%	0.0%	3.3%
Expanded Poly. Food grade	0.0%	0.0%	0.0%
Single-use Food Service	0.0%	0.0%	0.0%
Other Rigid Packaging	0.1%	0.0%	0.2%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	6.7%	2.4%	10.9%
Other Film	3.4%	0.4%	6.3%
Durable Plastic Products	0.9%	0.2%	1.6%
Plastic/Other Materials	9.2%	0.0%	20.2%
Glass	**0.1%**		
Clear Bottles	0.1%	0.0%	0.1%
Green Bottles	0.0%	0.0%	0.0%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.1%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.0%	0.0%	0.0%
Metal	**3.3%**		
Alum. Beverage Cans	0.0%	0.0%	0.1%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.3%	0.0%	0.9%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.0%	0.0%	0.1%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	0.8%	0.0%	1.8%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	2.2%	0.0%	5.7%
Organics	**23.8%**		
Leaves and Grass	0.0%	0.0%	0.0%
Prunings	0.0%	0.0%	0.0%
Food	21.8%	4.5%	39.2%
Textiles/Clothing	0.0%	0.0%	0.0%
Mixed Textiles	1.5%	0.0%	3.1%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	0.3%	0.0%	0.8%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	0.3%	0.0%	0.7%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**13.5%**		
Clean Dimension Lumber	0.1%	0.0%	0.2%
Clean Engineered Wood	0.4%	0.0%	1.0%
Pallets	9.0%	1.2%	16.9%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.2%	0.0%	0.4%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	0.0%	0.0%	0.0%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.0%	0.0%	0.0%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.0%	0.0%	0.0%
Other Construction	3.8%	0.0%	8.0%
Appliances & Electronics	**0.0%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**0.2%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.2%	0.0%	0.6%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**0.4%**		
Sand/Soil/Dirt	0.4%	0.0%	1.0%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.0%	0.0%	0.0%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**11**		

Table 5-34. Composition by Weight: Office
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**35.9%**		
Newspaper	1.4%	0.1%	2.8%
Plain OCC/Kraft	3.5%	1.0%	5.9%
Waxed OCC/Kraft	1.3%	0.0%	3.2%
High Grade	7.2%	0.3%	14.2%
Mixed Low Grade	6.1%	1.9%	10.3%
Compostable/Soiled	13.2%	9.0%	17.4%
Single-use Food Service	1.8%	0.5%	3.1%
Mixed/Other Paper	1.3%	0.0%	2.8%
Plastic	**14.7%**		
#1 PET Bottles	0.8%	0.3%	1.3%
#2 HDPE Natural Bottles	0.1%	0.1%	0.2%
#2 HDPE Colored Bottles	0.1%	0.0%	0.2%
Other Bottles	0.0%	0.0%	0.1%
Tubs	0.3%	0.1%	0.4%
Expanded Poly. Nonfood	2.3%	0.0%	6.1%
Expanded Poly. Food grade	0.5%	0.1%	0.9%
Single-use Food Service	0.8%	0.5%	1.2%
Other Rigid Packaging	0.0%	0.0%	0.1%
Store/Dry Cleaning Bags	0.2%	0.1%	0.3%
Clean PE Film	0.7%	0.0%	1.4%
Other Film	5.4%	2.5%	8.3%
Durable Plastic Products	2.5%	0.0%	6.0%
Plastic/Other Materials	0.8%	0.3%	1.4%
Glass	**1.5%**		
Clear Bottles	0.6%	0.2%	1.0%
Green Bottles	0.3%	0.0%	0.5%
Brown Bottles	0.4%	0.1%	0.7%
Container Glass	0.1%	0.0%	0.2%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.1%	0.0%	0.3%
Metal	**2.7%**		
Alum. Beverage Cans	0.4%	0.2%	0.6%
Alum. Foil/Containers	0.1%	0.0%	0.2%
Other Aluminum	0.0%	0.0%	0.1%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.4%	0.1%	0.6%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	1.1%	0.0%	2.1%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	0.8%	0.0%	2.0%
Organics	**33.9%**		
Leaves and Grass	0.0%	0.0%	0.0%
Prunings	0.3%	0.0%	0.7%
Food	28.8%	16.3%	41.2%
Textiles/Clothing	0.7%	0.0%	1.6%
Mixed Textiles	0.9%	0.0%	1.8%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	2.8%	0.0%	7.5%
Animal By-products	0.0%	0.0%	0.1%
Rubber Products	0.3%	0.0%	0.6%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**6.7%**		
Clean Dimension Lumber	1.3%	0.2%	2.3%
Clean Engineered Wood	0.4%	0.0%	1.1%
Pallets	2.6%	0.0%	5.5%
Crates	0.9%	0.0%	2.3%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	0.6%	0.0%	1.7%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	0.8%	0.0%	2.1%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.0%	0.0%	0.0%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.1%	0.0%	0.3%
Other Construction	0.0%	0.0%	0.0%
Appliances & Electronics	**0.0%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**0.8%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.1%	0.0%	0.2%
Dry-cell Batteries	0.1%	0.0%	0.3%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.1%	0.0%	0.2%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.5%	0.0%	1.4%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**3.8%**		
Sand/Soil/Dirt	3.4%	0.0%	8.9%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.5%	0.0%	1.0%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**10**		

Table 5-35. Composition by Weight: Other Services
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**27.2%**		
Newspaper	0.8%	0.5%	1.2%
Plain OCC/Kraft	6.9%	3.5%	10.4%
Waxed OCC/Kraft	0.5%	0.0%	1.2%
High Grade	1.8%	0.7%	2.9%
Mixed Low Grade	3.4%	1.9%	5.0%
Compostable/Soiled	4.2%	2.2%	6.2%
Single-use Food Service	3.1%	1.5%	4.8%
Mixed/Other Paper	6.4%	2.4%	10.3%
Plastic	**13.8%**		
#1 PET Bottles	0.5%	0.3%	0.8%
#2 HDPE Natural Bottles	0.2%	0.1%	0.2%
#2 HDPE Colored Bottles	0.1%	0.0%	0.2%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.2%	0.1%	0.4%
Expanded Poly. Nonfood	0.7%	0.1%	1.2%
Expanded Poly. Food grade	0.6%	0.0%	1.4%
Single-use Food Service	0.7%	0.3%	1.2%
Other Rigid Packaging	0.1%	0.1%	0.2%
Store/Dry Cleaning Bags	0.1%	0.1%	0.2%
Clean PE Film	1.0%	0.3%	1.8%
Other Film	3.9%	2.8%	5.1%
Durable Plastic Products	4.9%	2.2%	7.6%
Plastic/Other Materials	0.6%	0.2%	1.0%
Glass	**1.4%**		
Clear Bottles	0.5%	0.3%	0.7%
Green Bottles	0.3%	0.1%	0.5%
Brown Bottles	0.2%	0.1%	0.4%
Container Glass	0.1%	0.0%	0.3%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.3%	0.0%	0.6%
Metal	**5.6%**		
Alum. Beverage Cans	0.2%	0.1%	0.3%
Alum. Foil/Containers	0.0%	0.0%	0.1%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.2%	0.0%	0.6%
Tin Food Cans	0.4%	0.2%	0.6%
Empty Aerosol Cans	0.0%	0.0%	0.1%
Other Ferrous	2.2%	0.6%	3.7%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	2.5%	0.7%	4.2%
Organics	**29.9%**		
Leaves and Grass	1.2%	0.0%	2.6%
Prunings	0.6%	0.0%	1.5%
Food	18.0%	11.5%	24.4%
Textiles/Clothing	2.7%	1.6%	3.9%
Mixed Textiles	2.6%	1.0%	4.2%
Carpet	3.4%	0.0%	8.5%
Disposable Diapers	0.4%	0.1%	0.6%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	1.0%	0.0%	2.2%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**17.7%**		
Clean Dimension Lumber	2.5%	0.8%	4.1%
Clean Engineered Wood	1.5%	0.2%	2.8%
Pallets	1.5%	0.0%	3.1%
Crates	0.6%	0.0%	1.3%
Other Untreated Wood	0.1%	0.0%	0.1%
New Painted Wood	1.4%	0.0%	3.2%
Old Painted Wood	1.6%	0.0%	3.3%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.7%	0.0%	1.5%
Contaminated Wood	1.7%	0.0%	3.7%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.9%	0.0%	2.4%
Fiberglass Insulation	1.4%	0.0%	3.4%
Rock/Concrete/Bricks	1.4%	0.0%	3.6%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.7%	0.0%	1.7%
Other Construction	1.9%	0.3%	3.5%
Appliances & Electronics	**1.7%**		
Furniture	0.1%	0.0%	0.2%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	1.0%	0.0%	2.5%
Audio/Visual Equipment	0.4%	0.0%	1.1%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.2%	0.0%	0.5%
Potentially Harmful Waste	**1.6%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.1%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	1.4%	0.0%	3.7%
Gasoline/Kerosene	0.0%	0.0%	0.1%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.0%	0.0%	0.1%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**1.0%**		
Sand/Soil/Dirt	0.6%	0.0%	1.2%
Non-distinct Fines	0.0%	0.0%	0.1%
Misc. Organics	0.4%	0.1%	0.8%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**26**		

Table 5-36. Composition by Weight: Retail
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**22.9%**		
Newspaper	0.2%	0.0%	0.4%
Plain OCC/Kraft	9.2%	4.2%	14.2%
Waxed OCC/Kraft	2.2%	0.7%	3.6%
High Grade	1.4%	0.4%	2.4%
Mixed Low Grade	2.8%	1.8%	3.8%
Compostable/Soiled	2.3%	1.1%	3.5%
Single-use Food Service	1.4%	0.3%	2.4%
Mixed/Other Paper	3.5%	0.4%	6.6%
Plastic	**14.1%**		
#1 PET Bottles	0.2%	0.1%	0.4%
#2 HDPE Natural Bottles	0.2%	0.1%	0.4%
#2 HDPE Colored Bottles	0.2%	0.0%	0.5%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.5%	0.2%	0.9%
Expanded Poly. Nonfood	1.9%	0.0%	4.2%
Expanded Poly. Food grade	0.1%	0.0%	0.1%
Single-use Food Service	0.4%	0.2%	0.6%
Other Rigid Packaging	0.3%	0.0%	0.6%
Store/Dry Cleaning Bags	0.1%	0.0%	0.1%
Clean PE Film	1.6%	0.8%	2.4%
Other Film	5.1%	2.7%	7.5%
Durable Plastic Products	2.1%	1.0%	3.2%
Plastic/Other Materials	1.3%	0.5%	2.2%
Glass	**0.8%**		
Clear Bottles	0.1%	0.1%	0.2%
Green Bottles	0.1%	0.0%	0.1%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.0%	0.0%	0.1%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.1%
Other Glass	0.4%	0.0%	0.9%
Metal	**7.7%**		
Alum. Beverage Cans	0.1%	0.1%	0.2%
Alum. Foil/Containers	0.1%	0.0%	0.1%
Other Aluminum	0.0%	0.0%	0.1%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.1%	0.0%	0.2%
Empty Aerosol Cans	0.0%	0.0%	0.1%
Other Ferrous	2.4%	0.9%	3.8%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	4.9%	1.6%	8.2%
Organics	**36.2%**		
Leaves and Grass	0.9%	0.0%	2.3%
Prunings	0.4%	0.0%	0.9%
Food	32.5%	22.1%	43.0%
Textiles/Clothing	1.2%	0.4%	2.1%
Mixed Textiles	0.2%	0.0%	0.5%
Carpet	0.3%	0.0%	0.7%
Disposable Diapers	0.3%	0.0%	0.8%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	0.2%	0.0%	0.4%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**11.2%**		
Clean Dimension Lumber	0.5%	0.1%	0.8%
Clean Engineered Wood	1.1%	0.0%	2.7%
Pallets	0.8%	0.1%	1.6%
Crates	0.4%	0.0%	1.0%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	1.1%	0.1%	2.1%
Old Painted Wood	0.1%	0.0%	0.4%
Creosote-treated Wood	0.1%	0.0%	0.2%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	3.4%	0.3%	6.6%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.0%	0.0%	0.0%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	1.2%	0.0%	3.2%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.7%	0.1%	1.3%
Other Construction	1.8%	0.0%	4.4%
Appliances & Electronics	**4.6%**		
Furniture	2.4%	0.0%	5.5%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.9%	0.0%	1.9%
Audio/Visual Equipment	1.0%	0.0%	2.4%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.3%	0.0%	0.8%
Potentially Harmful Waste	**0.7%**		
Latex Paint	0.2%	0.0%	0.5%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.1%	0.0%	0.2%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.1%	0.0%	0.3%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.1%	0.0%	0.3%
Other Chemicals	0.2%	0.0%	0.6%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**1.9%**		
Sand/Soil/Dirt	1.7%	0.0%	4.4%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.2%	0.0%	0.4%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**25**		

Table 5-37. Composition by Weight: Transportation
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**26.0%**		
Newspaper	1.5%	0.4%	2.7%
Plain OCC/Kraft	9.3%	2.7%	15.9%
Waxed OCC/Kraft	0.3%	0.0%	0.7%
High Grade	3.1%	0.2%	5.9%
Mixed Low Grade	3.8%	1.2%	6.4%
Compostable/Soiled	4.4%	0.4%	8.4%
Single-use Food Service	1.2%	0.1%	2.2%
Mixed/Other Paper	2.3%	0.5%	4.2%
Plastic	**13.6%**		
#1 PET Bottles	0.4%	0.1%	0.6%
#2 HDPE Natural Bottles	0.1%	0.0%	0.3%
#2 HDPE Colored Bottles	0.7%	0.0%	1.6%
Other Bottles	0.1%	0.0%	0.3%
Tubs	0.2%	0.0%	0.4%
Expanded Poly. Nonfood	0.2%	0.0%	0.3%
Expanded Poly. Food grade	0.2%	0.1%	0.3%
Single-use Food Service	0.2%	0.0%	0.4%
Other Rigid Packaging	0.2%	0.0%	0.4%
Store/Dry Cleaning Bags	0.1%	0.0%	0.1%
Clean PE Film	0.2%	0.0%	0.5%
Other Film	1.6%	0.9%	2.3%
Durable Plastic Products	5.3%	1.1%	9.5%
Plastic/Other Materials	4.1%	0.2%	8.0%
Glass	**1.6%**		
Clear Bottles	0.3%	0.1%	0.5%
Green Bottles	0.1%	0.0%	0.3%
Brown Bottles	0.1%	0.0%	0.3%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	1.1%	0.0%	2.4%
Metal	**12.9%**		
Alum. Beverage Cans	0.1%	0.1%	0.2%
Alum. Foil/Containers	0.1%	0.0%	0.1%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.7%	0.1%	1.3%
Empty Aerosol Cans	0.0%	0.0%	0.1%
Other Ferrous	6.6%	0.0%	14.1%
Oil filters	0.9%	0.0%	2.5%
Mixed Metals/Material	4.5%	1.4%	7.6%
Organics	**15.2%**		
Leaves and Grass	0.2%	0.0%	0.7%
Prunings	0.0%	0.0%	0.0%
Food	10.6%	1.6%	19.6%
Textiles/Clothing	0.9%	0.0%	1.7%
Mixed Textiles	2.0%	0.0%	4.2%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	0.9%	0.0%	2.3%
Animal By-products	0.1%	0.0%	0.2%
Rubber Products	0.4%	0.0%	0.8%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**25.1%**		
Clean Dimension Lumber	0.6%	0.0%	1.3%
Clean Engineered Wood	1.6%	0.0%	3.7%
Pallets	4.6%	0.0%	9.7%
Crates	2.5%	0.0%	6.5%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	2.4%	0.0%	5.4%
Old Painted Wood	0.0%	0.0%	0.0%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	5.5%	0.7%	10.2%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.1%	0.0%	0.2%
Fiberglass Insulation	4.0%	0.0%	10.6%
Rock/Concrete/Bricks	0.0%	0.0%	0.0%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.0%	0.0%	0.1%
Other Construction	3.9%	0.3%	7.4%
Appliances & Electronics	**0.1%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.1%	0.0%	0.2%
Potentially Harmful Waste	**3.4%**		
Latex Paint	0.0%	0.0%	0.0%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	1.3%	0.0%	3.5%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.1%	0.0%	0.3%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	1.9%	0.0%	5.1%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**2.2%**		
Sand/Soil/Dirt	1.2%	0.0%	3.3%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.9%	0.0%	2.5%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**13**		

Table 5-38. Composition by Weight: Wholesale
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**21.4%**		
Newspaper	0.5%	0.0%	1.0%
Plain OCC/Kraft	5.1%	2.7%	7.4%
Waxed OCC/Kraft	0.8%	0.1%	1.5%
High Grade	2.4%	0.5%	4.2%
Mixed Low Grade	3.1%	1.2%	5.1%
Compostable/Soiled	5.2%	0.0%	11.3%
Single-use Food Service	0.4%	0.0%	1.0%
Mixed/Other Paper	3.9%	0.0%	8.3%
Plastic	**14.9%**		
#1 PET Bottles	0.3%	0.1%	0.5%
#2 HDPE Natural Bottles	0.0%	0.0%	0.0%
#2 HDPE Colored Bottles	0.1%	0.0%	0.3%
Other Bottles	0.0%	0.0%	0.0%
Tubs	4.7%	0.0%	11.7%
Expanded Poly. Nonfood	0.3%	0.0%	0.6%
Expanded Poly. Food grade	0.2%	0.0%	0.5%
Single-use Food Service	0.2%	0.0%	0.5%
Other Rigid Packaging	0.1%	0.0%	0.3%
Store/Dry Cleaning Bags	0.0%	0.0%	0.1%
Clean PE Film	1.4%	0.0%	3.2%
Other Film	4.1%	1.1%	7.2%
Durable Plastic Products	2.4%	0.0%	5.0%
Plastic/Other Materials	0.9%	0.0%	2.0%
Glass	**0.3%**		
Clear Bottles	0.2%	0.0%	0.5%
Green Bottles	0.0%	0.0%	0.1%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.0%	0.0%	0.0%
Other Glass	0.0%	0.0%	0.0%
Metal	**5.7%**		
Alum. Beverage Cans	0.1%	0.0%	0.2%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.2%	0.0%	0.5%
Tin Food Cans	0.1%	0.0%	0.1%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	1.7%	0.4%	3.1%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	3.7%	0.0%	8.4%
Organics	**36.9%**		
Leaves and Grass	0.0%	0.0%	0.1%
Prunings	0.0%	0.0%	0.0%
Food	35.9%	16.0%	55.7%
Textiles/Clothing	0.9%	0.0%	2.3%
Mixed Textiles	0.0%	0.0%	0.0%
Carpet	0.0%	0.0%	0.0%
Disposable Diapers	0.0%	0.0%	0.0%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	0.1%	0.0%	0.1%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**15.1%**		
Clean Dimension Lumber	2.0%	0.0%	4.7%
Clean Engineered Wood	0.2%	0.0%	0.4%
Pallets	1.4%	0.0%	3.1%
Crates	0.3%	0.0%	0.7%
Other Untreated Wood	0.0%	0.0%	0.0%
New Painted Wood	1.4%	0.0%	3.8%
Old Painted Wood	0.1%	0.0%	0.3%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.0%	0.0%	0.0%
Contaminated Wood	2.6%	0.0%	5.8%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	5.2%	0.0%	13.8%
Fiberglass Insulation	0.2%	0.0%	0.5%
Rock/Concrete/Bricks	0.1%	0.0%	0.4%
Asphalt Shingles	0.0%	0.0%	0.0%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.0%	0.0%	0.0%
Other Construction	1.5%	0.0%	4.0%
Appliances & Electronics	**0.0%**		
Furniture	0.0%	0.0%	0.0%
Mattresses	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.0%	0.0%	0.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**1.2%**		
Latex Paint	1.2%	0.0%	3.1%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.0%	0.0%	0.0%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.1%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**4.5%**		
Sand/Soil/Dirt	4.4%	0.0%	11.5%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.2%	0.0%	0.5%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**9**		

Table 5-39. Composition by Weight: Mixed Commercial Generators
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**21.8%**		
Newspaper	1.7%	1.4%	2.1%
Plain OCC/Kraft	3.6%	3.0%	4.1%
Waxed OCC/Kraft	0.4%	0.1%	0.6%
High Grade	1.7%	1.3%	2.0%
Mixed Low Grade	4.1%	3.5%	4.6%
Compostable/Soiled	5.9%	5.3%	6.6%
Single-use Food Service	1.9%	1.5%	2.3%
Mixed/Other Paper	2.5%	1.9%	3.2%
Plastic	**12.4%**		
#1 PET Bottles	0.5%	0.4%	0.6%
#2 HDPE Natural Bottles	0.2%	0.2%	0.3%
#2 HDPE Colored Bottles	0.2%	0.2%	0.3%
Other Bottles	0.0%	0.0%	0.1%
Tubs	0.6%	0.4%	0.8%
Expanded Poly. Nonfood	0.5%	0.3%	0.7%
Expanded Poly. Food grade	0.4%	0.3%	0.5%
Single-use Food Service	0.5%	0.4%	0.6%
Other Rigid Packaging	0.4%	0.3%	0.5%
Store/Dry Cleaning Bags	0.2%	0.1%	0.2%
Clean PE Film	0.6%	0.3%	0.9%
Other Film	4.9%	4.3%	5.4%
Durable Plastic Products	2.1%	1.1%	3.1%
Plastic/Other Materials	1.2%	0.7%	1.8%
Glass	**2.2%**		
Clear Bottles	0.8%	0.4%	1.2%
Green Bottles	0.4%	0.3%	0.4%
Brown Bottles	0.5%	0.3%	0.7%
Container Glass	0.1%	0.1%	0.1%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.1%	0.0%	0.2%
Other Glass	0.3%	0.1%	0.4%
Metal	**4.4%**		
Alum. Beverage Cans	0.2%	0.2%	0.3%
Alum. Foil/Containers	0.1%	0.1%	0.1%
Other Aluminum	0.2%	0.0%	0.3%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.6%	0.4%	0.7%
Empty Aerosol Cans	0.1%	0.1%	0.1%
Other Ferrous	1.3%	1.0%	1.7%
Oil filters	0.1%	0.0%	0.2%
Mixed Metals/Material	1.8%	1.2%	2.4%
Organics	**42.8%**		
Leaves and Grass	2.6%	1.7%	3.6%
Prunings	0.7%	0.3%	1.1%
Food	34.2%	31.2%	37.3%
Textiles/Clothing	1.9%	0.9%	2.9%
Mixed Textiles	0.6%	0.3%	0.8%
Carpet	0.3%	0.0%	0.6%
Disposable Diapers	0.7%	0.5%	1.0%
Animal By-products	1.0%	0.6%	1.5%
Rubber Products	0.5%	0.2%	0.9%
Tires	0.1%	0.0%	0.3%

	Mean	Low	High
CDL Wastes	**9.8%**		
Clean Dimension Lumber	1.6%	1.1%	2.1%
Clean Engineered Wood	1.0%	0.5%	1.5%
Pallets	1.2%	0.5%	1.9%
Crates	0.3%	0.0%	0.5%
Other Untreated Wood	0.1%	0.0%	0.2%
New Painted Wood	0.7%	0.4%	1.0%
Old Painted Wood	0.1%	0.0%	0.2%
Creosote-treated Wood	0.0%	0.0%	0.1%
Other Treated Wood	0.1%	0.0%	0.1%
Contaminated Wood	0.7%	0.4%	1.0%
New Gypsum Scrap	0.0%	0.0%	0.0%
Demo Gypsum Scrap	0.7%	0.2%	1.1%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	0.8%	0.4%	1.2%
Asphalt Shingles	0.1%	0.0%	0.3%
Other Asphaltic Roofing	0.1%	0.0%	0.2%
Ceramics	0.2%	0.0%	0.3%
Other Construction	2.1%	1.0%	3.2%
Appliances & Electronics	**1.4%**		
Furniture	0.5%	0.0%	1.0%
Mattresses	0.1%	0.0%	0.4%
Small Appliances	0.0%	0.0%	0.1%
Audio/Visual Equipment	0.2%	0.1%	0.4%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.3%	0.0%	0.7%
Other Computer Equipment	0.2%	0.0%	0.3%
Potentially Harmful Waste	**2.6%**		
Latex Paint	0.3%	0.0%	0.6%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.1%	0.0%	0.3%
Caustic Cleaners	0.0%	0.0%	0.1%
Pesticides/Herbicides	0.0%	0.0%	0.0%
Dry-cell Batteries	0.0%	0.0%	0.1%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.1%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	1.9%	0.9%	2.9%
Other Chemicals	0.1%	0.0%	0.2%
Other Potentially Harmful Waste	0.1%	0.0%	0.2%
Fines & Misc Materials	**2.7%**		
Sand/Soil/Dirt	1.6%	0.8%	2.4%
Non-distinct Fines	0.0%	0.0%	0.1%
Misc. Organics	1.0%	0.7%	1.4%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**151**		

6 Self-haul Composition Results, by Subpopulation

A total of 216 self-haul loads were sampled from January to December 2008. Descriptive data about samples from each subpopulation are summarized in Table 6-1. As shown, many of the analyses are based on a very small number of samples. Consequently, these calculations are subject to a relatively wide margin of error. For example, a 90% confidence level for components in the spring sampling period (based on only 44 samples) results in an error range of up to plus or minus five percentage points. See Table 6-15 for details. The sampling plan was designed to provide statistically valid results for the overall self-haul substream. The more detailed composition results are provided as rough estimates only.

Table 6-1. Description of Samples for each Self-haul Subpopulation
(January – December 2008)

		(All Weights in pounds)		
Subpopulation	**SAMPLE COUNT**	**TOTAL SAMPLE**	**AVERAGE SAMPLE**	**AVERAGE NET LOAD WEIGHT**
Transfer Station				
NRDS	110	32,873.3	298.8	582.0
SRDS	106	33,360.0	314.7	707.1
Vehicle Type				
Car	21	6,437.2	306.5	480.8
Truck	195	59,796.1	306.6	660.9
Season				
Spring	44	13,966.8	317.4	527.4
Summer	88	25,620.5	291.1	651.9
Autumn	22	6,526.7	296.7	355.7
Winter	62	20,119.4	324.5	815.6
Generator Type, by Site*				
Residential, NRDS	50	14,791.9	295.8	436.2
Residential, SRDS	39	12,004.8	307.8	586.2
Non-residential, NRDS	51	15,319.9	300.4	690.2
Non-residential, SRDS	49	15,358.3	313.4	862.8
Overall Self-Haul	**216**	**66,233.4**	**306.6**	**643.4**

* A total of 27 samples were not categorized by generator type.

Seattle Public Utilities provided total disposal quantities for the study period for the following waste populations: 1) total self-haul, 2) self-haul by vehicle type, 3) self-haul by season, and 4) self-haul by transfer station. One of the purposes of this study was to determine the ratio of residential to non-residential self-haul waste. The 2008 disposal quantities were calculated from the sampling results: 1) residential and non-residential self-haul waste, 2) residential and non-residential passenger vehicle self-haul waste, and 3) residential and non-residential truck self-haul waste.

Table 6-2 illustrates the split between self-haul wastes generated by residential and non-residential generators. The vehicle net weights and trip counts collected during 2008 sampling

days were applied to the annual self-haul tonnage and trips.[14] As shown in the table, approximately 36% of 2008 self-haul waste was residential, while the remaining 64% was from non-residential sources. About 78% of residential trips and 88% of residential tons were delivered by self-haul trucks in 2008. Self-haul trucks also disposed of most of the non-residential waste (approximately 93% of trips and 97% of tons).

Table 6-2. Self-haul Waste Tons and Trips, by Residential and Non-residential Generators
(January – December 2008)

Subpopulation	Tons		Trips	
	Count	Percent	Count	Percent
Residential				
Passenger Vehicles	3,833	11.6%	22,368	22.0%
Self-haul Trucks	29,129	88.4%	79,302	78.0%
Residential Subtotal	*32,963*	*36.3%*	*101,671*	*48.4%*
Non-residential				
Passenger Vehicles	1,916	3.3%	7,989	7.4%
Self-haul Trucks	55,950	96.7%	100,450	92.6%
Non-residential Subtotal	*57,866*	*63.7%*	*108,438*	*51.6%*
Total	**90,829**		**210,109**	

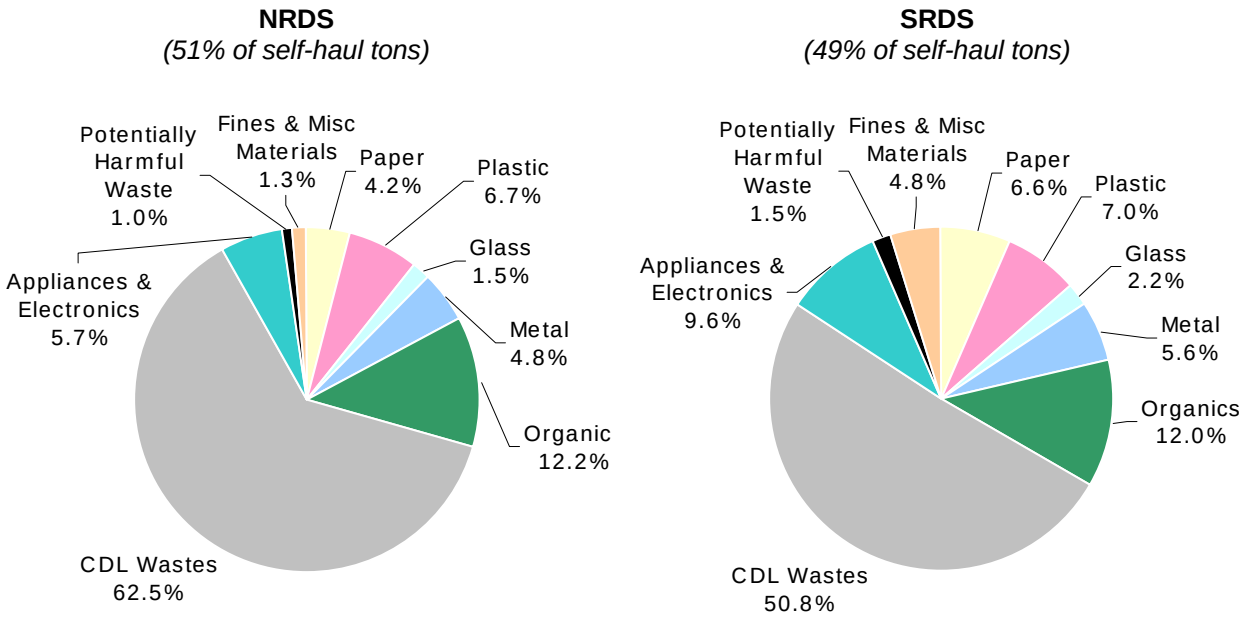
In the following sections, self-haul waste composition results are presented by transfer station, vehicle type, season, and generator type, by site. Results are depicted in three ways: a pie chart reflects composition by the nine broad material categories; then, a table lists the top ten components, by weight; and finally, the full composition results are presented in a detailed table. Following the top ten tables in Sections 6.1, 6.2, and 6.3 composition results from the relevant subpopulations are compared.

6.1 Self-haul Composition by Transfer Station

This section examines the composition of wastes self-hauled to the North and South Recycling and Disposal Stations (NRDS and SRDS). Figure 6-1 summarizes the results on a broad material category level. **CDL wastes** composed a relatively large percentage of the waste hauled to both of the transfer stations. When combined, **CDL wastes** and **organics** accounted for a large percentage of waste hauled to both transfer stations (approximately 75% at the NRDS and 63% at the SRDS). **CDL wastes** (construction, demolition, and landclearing) includes components such as *clean dimensional lumber*, *other treated wood*, and *rock/concrete/bricks*, while **organics** includes components such as *carpet*, *food*, and *leaves and grass*. The following sections examine self-hauled waste from each transfer station in more detail.

[14] Data and statistics on daily incoming trips and tons at the City of Seattle's North and South Recycling & Disposal Stations can be found on the web at http://www.seattle.gov/util/About_SPU/Garbage_System/Reports/SPU01_002096.asp

Figure 6-1. Self-haul Composition Summary: by Transfer Station
(January – December 2008)



6.1.1 North Recycling and Disposal Station (NRDS)

A total of 110 samples were taken from loads that were delivered to the NRDS during the year 2008. Self-haul vehicles delivered 46,393 tons of waste to the NRDS during the 2008 calendar year. The composition estimates for this subpopulation were applied to the 46,393 tons to estimate the amount of waste disposed for each component category. Of the top ten components listed in Table 6-3, *new painted wood*, *other construction debris*, *clean dimensional lumber*, *contaminated wood*, *old painted wood*, *clean engineered wood*, and *rock/concrete/bricks* composed more than 5% of the total tonnage. Please see Table 6-5 for a detailed listing of the full composition results for waste sampled at the NRDS.

Table 6-3. Top Ten Components: North Recycling and Disposal Station
(January – December 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	10.3%	10.3%	4,756
Other Construction Debris	9.7%	19.9%	4,492
Clean Dimensional Lumber	6.4%	26.4%	2,990
Contaminated Wood	5.9%	32.3%	2,731
Old Painted Wood	5.5%	37.8%	2,562
Clean Engineered Wood	5.4%	43.1%	2,484
Rock/Concrete/Bricks	5.3%	48.5%	2,470
Carpet	4.8%	53.3%	2,228
Demo Gypsum Scrap	3.6%	56.9%	1,686
Durable Plastic Products	3.3%	60.2%	1,545
Total	**60.2%**		**27,944**

6.1.2 South Recycling and Disposal Station (SRDS)

A total of 106 samples from the SRDS were examined during this study period. In 2008, 44,436 tons of self-haul waste was disposed at the SRDS. The composition estimates for this subpopulation were applied to the 44,436 tons to estimate the amount of waste disposed for each component category. As shown in Table 6-4, *new painted wood*, *furniture*, *other construction debris*, *clean dimensional lumber*, *clean engineered wood*, and *contaminated wood* each accounted for greater than 5%, by weight of the self-haul waste disposed at the SRDS. The top ten components accounted for about 61% of the total, by weight. Please see Table 6-6 for a full list of the composition results for the SRDS.

Table 6-4. Top Ten Components: South Recycling and Disposal Station
(January – December 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	11.9%	11.9%	5,268
Furniture	7.4%	19.2%	3,279
Other Construction Debris	7.1%	26.4%	3,168
Clean Dimensional Lumber	6.6%	32.9%	2,922
Clean Engineered Wood	5.6%	38.5%	2,477
Contaminated Wood	5.6%	44.1%	2,475
Rock/Concrete/Bricks	4.8%	48.9%	2,145
Sand/Soil/Dirt	4.1%	53.0%	1,831
Durable Plastic Products	3.8%	56.9%	1,707
Food	3.7%	60.6%	1,663
Total	**60.6%**		**26,935**

6.1.3 Comparisons between Transfer Stations

Several of the top ten components for both the NRDS and the SRDS were types of **CDL wastes**, including *clean dimensional lumber*, *contaminated wood*, *rock/concrete/bricks*, *new painted wood*, *other construction debris*, and *clean engineered wood*. Another top ten component shared between the self-haul waste streams at the two transfer stations was *durable plastic products*.

On the other hand, *demolition gypsum scrap*, *old painted wood*, and *carpet* were among the top ten components of the NRDS waste, but not among the top ten components of the SRDS waste. *Food*, *furniture*, and *sand/soil/dirt* were top ten components of the SRDS waste stream, but not of the NRDS.

Table 6-5. Composition by Weight: Self-haul at the NRDS
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**1,942**	**4.2%**		
Newspaper	30	0.1%	0.0%	0.1%
Plain OCC/Kraft	545	1.2%	0.8%	1.6%
Waxed OCC/Kraft	0	0.0%	0.0%	0.0%
High Grade	23	0.0%	0.0%	0.1%
Mixed Low Grade	512	1.1%	0.6%	1.6%
Compostable/Soiled	101	0.2%	0.1%	0.4%
Single-use Food Service	21	0.0%	0.0%	0.1%
Mixed/Other Paper	711	1.5%	0.7%	2.4%
Plastic	**3,128**	**6.7%**		
#1 PET Bottles	18	0.0%	0.0%	0.1%
#2 HDPE Natural Bottles	9	0.0%	0.0%	0.0%
#2 HDPE Colored Bottles	30	0.1%	0.0%	0.1%
Other Bottles	0	0.0%	0.0%	0.0%
Tubs	39	0.1%	0.0%	0.2%
Expanded Poly. Nonfood	268	0.6%	0.0%	1.2%
Expanded Poly. Food grade	1	0.0%	0.0%	0.0%
Single-use Food Service	3	0.0%	0.0%	0.0%
Other Rigid Packaging	53	0.1%	0.0%	0.2%
Store/Dry Cleaning Bags	3	0.0%	0.0%	0.0%
Clean PE Film	75	0.2%	0.0%	0.3%
Other Film	215	0.5%	0.3%	0.6%
Durable Plastic Products	1,545	3.3%	2.1%	4.6%
Plastic/Other Materials	870	1.9%	0.8%	2.9%
Glass	**715**	**1.5%**		
Clear Bottles	35	0.1%	0.0%	0.1%
Green Bottles	22	0.0%	0.0%	0.1%
Brown Bottles	62	0.1%	0.0%	0.3%
Container Glass	2	0.0%	0.0%	0.0%
Fluorescent Tubes	20	0.0%	0.0%	0.1%
Flat Glass	211	0.5%	0.0%	0.9%
Other Glass	363	0.8%	0.3%	1.3%
Metal	**2,205**	**4.8%**		
Alum. Beverage Cans	6	0.0%	0.0%	0.0%
Alum. Foil/Containers	1	0.0%	0.0%	0.0%
Other Aluminum	23	0.1%	0.0%	0.1%
Other Nonferrous	9	0.0%	0.0%	0.0%
Tin Food Cans	9	0.0%	0.0%	0.0%
Empty Aerosol Cans	15	0.0%	0.0%	0.1%
Other Ferrous	1,115	2.4%	1.5%	3.3%
Oil filters	4	0.0%	0.0%	0.0%
Mixed Metals/Material	1,022	2.2%	1.2%	3.2%
Organics	**5,681**	**12.2%**		
Leaves and Grass	617	1.3%	0.2%	2.4%
Prunings	142	0.3%	0.0%	0.6%
Food	342	0.7%	0.3%	1.2%
Textiles/Clothing	1,154	2.5%	0.9%	4.1%
Mixed Textiles	773	1.7%	0.2%	3.1%
Carpet	2,228	4.8%	1.9%	7.7%
Disposable Diapers	6	0.0%	0.0%	0.0%
Animal By-products	254	0.5%	0.0%	1.1%
Rubber Products	165	0.4%	0.1%	0.6%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**29,015**	**62.5%**		
Clean Dimension Lumber	2,990	6.4%	4.7%	8.2%
Clean Engineered Wood	2,484	5.4%	3.5%	7.2%
Pallets	24	0.1%	0.0%	0.1%
Crates	275	0.6%	0.1%	1.1%
Other Untreated Wood	231	0.5%	0.1%	0.9%
New Painted Wood	4,756	10.3%	7.4%	13.1%
Old Painted Wood	2,562	5.5%	3.0%	8.1%
Creosote-treated Wood	396	0.9%	0.0%	1.8%
Other Treated Wood	551	1.2%	0.5%	1.9%
Contaminated Wood	2,731	5.9%	3.3%	8.5%
New Gypsum Scrap	784	1.7%	0.4%	3.0%
Demo Gypsum Scrap	1,686	3.6%	1.2%	6.1%
Fiberglass Insulation	171	0.4%	0.1%	0.7%
Rock/Concrete/Bricks	2,470	5.3%	2.8%	7.8%
Asphalt Shingles	1,075	2.3%	0.1%	4.6%
Other Asphaltic Roofing	360	0.8%	0.0%	1.7%
Ceramics	976	2.1%	1.1%	3.1%
Other Construction	4,492	9.7%	6.5%	12.9%
Appliances & Electronics	**2,647**	**5.7%**		
Furniture	1,384	3.0%	0.7%	5.3%
Mattresses	947	2.0%	0.0%	4.6%
Small Appliances	89	0.2%	0.0%	0.4%
Audio/Visual Equipment	219	0.5%	0.1%	0.8%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	8	0.0%	0.0%	0.0%
Potentially Harmful Waste	**471**	**1.0%**		
Latex Paint	164	0.4%	0.1%	0.6%
Solvent-based Adhesives	1	0.0%	0.0%	0.0%
Water-based Adhesives	121	0.3%	0.0%	0.7%
Oil-based Paint/Thinners	20	0.0%	0.0%	0.1%
Caustic Cleaners	19	0.0%	0.0%	0.1%
Pesticides/Herbicides	80	0.2%	0.0%	0.4%
Dry-cell Batteries	6	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	3	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	19	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	0	0.0%	0.0%	0.0%
Other Chemicals	34	0.1%	0.0%	0.2%
Other Potentially Harmful Waste	1	0.0%	0.0%	0.0%
Fines & Misc Materials	**588**	**1.3%**		
Sand/Soil/Dirt	383	0.8%	0.2%	1.4%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	186	0.4%	0.1%	0.7%
Misc. Inorganics	19	0.0%	0.0%	0.1%

Total Percent	**100%**
Total Tons	**46,393**
Sample Count	**110**

Table 6-6. Composition by Weight: Self-haul at the SRDS
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**2,933**	**6.6%**		
Newspaper	36	0.1%	0.0%	0.1%
Plain OCC/Kraft	1,111	2.5%	1.9%	3.2%
Waxed OCC/Kraft	410	0.9%	0.0%	2.1%
High Grade	92	0.2%	0.1%	0.3%
Mixed Low Grade	655	1.5%	1.0%	1.9%
Compostable/Soiled	156	0.4%	0.2%	0.5%
Single-use Food Service	69	0.2%	0.1%	0.2%
Mixed/Other Paper	401	0.9%	0.7%	1.1%
Plastic	**3,091**	**7.0%**		
#1 PET Bottles	34	0.1%	0.1%	0.1%
#2 HDPE Natural Bottles	34	0.1%	0.1%	0.1%
#2 HDPE Colored Bottles	57	0.1%	0.1%	0.2%
Other Bottles	2	0.0%	0.0%	0.0%
Tubs	72	0.2%	0.1%	0.2%
Expanded Poly. Nonfood	153	0.3%	0.2%	0.5%
Expanded Poly. Food grade	13	0.0%	0.0%	0.0%
Single-use Food Service	35	0.1%	0.0%	0.1%
Other Rigid Packaging	58	0.1%	0.1%	0.2%
Store/Dry Cleaning Bags	4	0.0%	0.0%	0.0%
Clean PE Film	86	0.2%	0.1%	0.3%
Other Film	276	0.6%	0.4%	0.8%
Durable Plastic Products	1,707	3.8%	2.9%	4.8%
Plastic/Other Materials	560	1.3%	0.8%	1.7%
Glass	**974**	**2.2%**		
Clear Bottles	126	0.3%	0.0%	0.5%
Green Bottles	43	0.1%	0.0%	0.2%
Brown Bottles	125	0.3%	0.0%	0.6%
Container Glass	12	0.0%	0.0%	0.1%
Fluorescent Tubes	24	0.1%	0.0%	0.1%
Flat Glass	163	0.4%	0.3%	0.4%
Other Glass	481	1.1%	0.8%	1.3%
Metal	**2,488**	**5.6%**		
Alum. Beverage Cans	11	0.0%	0.0%	0.0%
Alum. Foil/Containers	4	0.0%	0.0%	0.0%
Other Aluminum	20	0.0%	0.0%	0.1%
Other Nonferrous	32	0.1%	0.0%	0.2%
Tin Food Cans	37	0.1%	0.0%	0.1%
Empty Aerosol Cans	7	0.0%	0.0%	0.0%
Other Ferrous	860	1.9%	1.4%	2.5%
Oil filters	2	0.0%	0.0%	0.0%
Mixed Metals/Material	1,515	3.4%	2.1%	4.7%
Organics	**5,333**	**12.0%**		
Leaves and Grass	469	1.1%	0.4%	1.7%
Prunings	48	0.1%	0.0%	0.2%
Food	1,663	3.7%	2.8%	4.7%
Textiles/Clothing	676	1.5%	1.0%	2.1%
Mixed Textiles	330	0.7%	0.5%	1.0%
Carpet	1,371	3.1%	1.6%	4.5%
Disposable Diapers	100	0.2%	0.0%	0.5%
Animal By-products	244	0.5%	0.1%	1.0%
Rubber Products	423	1.0%	0.0%	1.9%
Tires	10	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**22,560**	**50.8%**		
Clean Dimension Lumber	2,922	6.6%	4.5%	8.7%
Clean Engineered Wood	2,477	5.6%	3.8%	7.4%
Pallets	346	0.8%	0.4%	1.2%
Crates	4	0.0%	0.0%	0.0%
Other Untreated Wood	92	0.2%	0.0%	0.4%
New Painted Wood	5,268	11.9%	9.2%	14.5%
Old Painted Wood	586	1.3%	0.7%	1.9%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	783	1.8%	0.9%	2.6%
Contaminated Wood	2,475	5.6%	4.0%	7.2%
New Gypsum Scrap	632	1.4%	0.7%	2.1%
Demo Gypsum Scrap	1,119	2.5%	1.4%	3.6%
Fiberglass Insulation	28	0.1%	0.0%	0.1%
Rock/Concrete/Bricks	2,145	4.8%	2.1%	7.5%
Asphalt Shingles	168	0.4%	0.0%	0.8%
Other Asphaltic Roofing	7	0.0%	0.0%	0.0%
Ceramics	338	0.8%	0.3%	1.2%
Other Construction	3,168	7.1%	5.0%	9.2%
Appliances & Electronics	**4,255**	**9.6%**		
Furniture	3,279	7.4%	5.1%	9.7%
Mattresses	610	1.4%	0.5%	2.2%
Small Appliances	38	0.1%	0.0%	0.2%
Audio/Visual Equipment	289	0.7%	0.3%	1.0%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	38	0.1%	0.0%	0.2%
Potentially Harmful Waste	**664**	**1.5%**		
Latex Paint	103	0.2%	0.1%	0.3%
Solvent-based Adhesives	9	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0	0.0%	0.0%	0.0%
Caustic Cleaners	80	0.2%	0.0%	0.3%
Pesticides/Herbicides	391	0.9%	0.0%	1.9%
Dry-cell Batteries	1	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	3	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	2	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	1	0.0%	0.0%	0.0%
Medical Wastes	19	0.0%	0.0%	0.1%
Other Chemicals	25	0.1%	0.0%	0.1%
Other Potentially Harmful Waste	30	0.1%	0.0%	0.1%
Fines & Misc Materials	**2,139**	**4.8%**		
Sand/Soil/Dirt	1,831	4.1%	2.3%	5.9%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	271	0.6%	0.3%	0.9%
Misc. Inorganics	37	0.1%	0.0%	0.1%

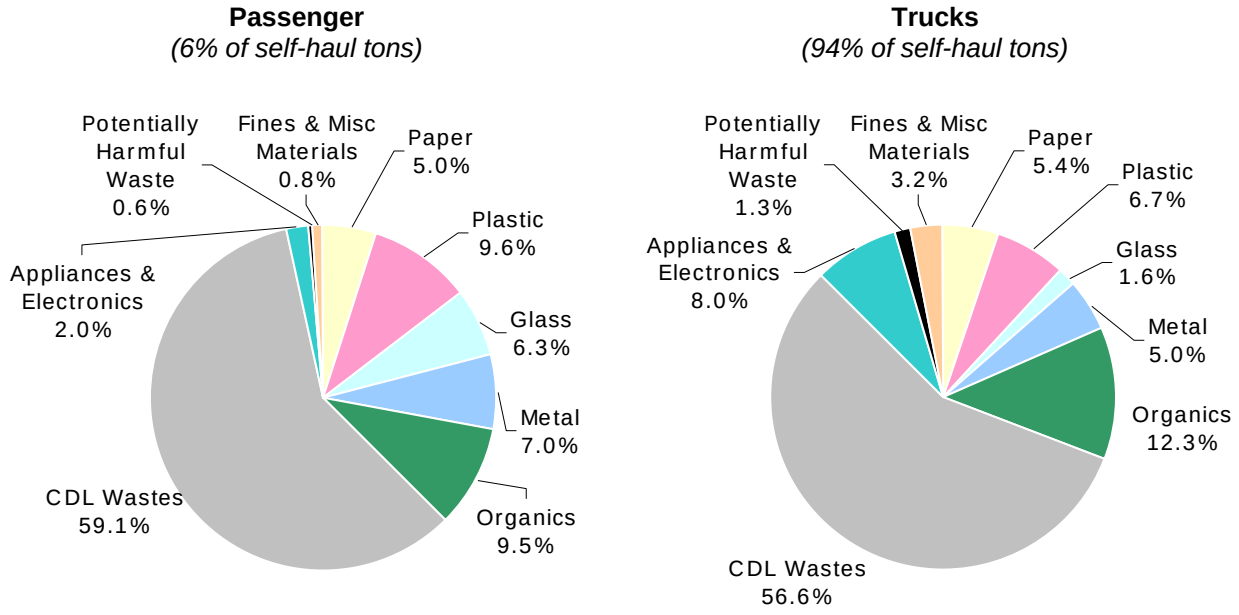
Total Percent	**100%**
Total Tons	**44,436**
Sample Count	**106**

6.2 Self-haul Composition by Vehicle Type

Wastes are self-hauled to Seattle's transfer stations in a variety of vehicles that can be categorized into two primary subpopulations: passenger vehicles and trucks. Passenger vehicles include cars, station wagons, and sport utility vehicles (all without trailers); all others (mostly pick-up trucks, vans, and vehicles with trailers) are classified as trucks.

Figure 6-2 provides an overview of waste disposed by both vehicle types. This figure illustrates that **CDL wastes** accounted for a relatively large percentage of the total tonnage both for passenger vehicles and trucks, about 59% and 57%, respectively. **CDL wastes** includes components such as *clean dimensional lumber*, *rock/concrete/brick*, and *demolition gypsum scrap*. **Organics** were largely prevalent both in passenger vehicles and truck waste, composing approximately 10% and 12% of the total tonnage respectively. **Organics** includes components such as *textiles/clothing*, *carpet,* and *food*.

Figure 6-2. Self-haul Composition Summary: by Vehicle Type
(January – December 2008)



6.2.1 Passenger Vehicles

Twenty-one passenger vehicle samples were characterized during the year 2008. Passenger vehicles disposed 5,750 tons of self-haul waste during this time. The composition estimates for this subpopulation were applied to the 5,750 tons to estimate the amount of waste disposed for each component category. *Rock/concrete/bricks* was the largest component, accounting for approximately 15% of the total. *New painted wood*, *other construction debris*, *durable plastic products*, and *contaminated wood* were other large components of waste disposed by passenger vehicles (each accounting for more than 5%, by weight). As shown in Table 6-7, summed together, the top ten components equal approximately 69% of the total tonnage. The full composition results for passenger vehicles are listed in Table 6-9.

Table 6-7. Top Ten Components: Self-haul Passenger Vehicles
(January – December 2008)

Component	Mean	Cum. %	Tons
Rock/Concrete/Bricks	15.2%	15.2%	872
New Painted Wood	9.0%	24.2%	517
Other Construction Debris	8.1%	32.3%	469
Durable Plastic Products	7.9%	40.2%	455
Contaminated Wood	6.7%	46.9%	386
Clean Dimensional Lumber	4.7%	51.6%	269
Other Ferrous Metal	4.5%	56.1%	260
Demo Gypsum Scrap	4.5%	60.6%	256
Other Glass	4.1%	64.7%	237
Carpet	4.1%	68.8%	237
Total	**68.8%**		**3,958**

6.2.2 Trucks

A total of 195 self-haul truck loads were sampled during this study period. Trucks disposed 85,079 tons of self-haul waste during the 2008 calendar year. The composition estimates for this subpopulation were applied to the 85,079 tons to estimate the amount of waste disposed for each component category. As shown in Table 6-8, *new painted wood* (11.2%) was the single largest component of this waste, followed by *other construction debris* (8.5%). These large components accounted for approximately 58% of the total waste disposed by self-haul trucks in 2008. Please see Table 6-10 to view the full composition results for self-haul trucks.

Table 6-8. Top Ten Components: Self-haul Trucks
(January – December 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	11.2%	11.2%	9,507
Other Construction Debris	8.5%	19.6%	7,191
Clean Dimensional Lumber	6.6%	26.3%	5,643
Contaminated Wood	5.7%	31.9%	4,820
Clean Engineered Wood	5.6%	37.5%	4,768
Furniture	5.5%	43.0%	4,663
Rock/Concrete/Bricks	4.4%	47.4%	3,743
Carpet	4.0%	51.4%	3,362
Old Painted Wood	3.4%	54.8%	2,924
Durable Plastic Products	3.3%	58.1%	2,797
Total	**58.1%**		**49,418**

6.2.3 Comparisons between Vehicle Types

Rock/concrete/bricks, *new painted wood*, *other construction debris*, *durable plastic products*, *contaminated wood*, *clean dimensional lumber*, and *carpet* were top ten components shared between passenger vehicles and trucks. *Other ferrous metal*, *demolition gypsum scrap*, and *other glass* were among the top ten components for passenger vehicles, but not for trucks. On the other hand, *old painted wood*, *furniture*, and *clean engineered wood* were top ten components for trucks, but not for passenger vehicles.

Table 6-9. Composition by Weight: Self-haul Passenger Vehicles
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**290**	**5.0%**		
Newspaper	0	0.0%	0.0%	0.0%
Plain OCC/Kraft	114	2.0%	1.4%	2.5%
Waxed OCC/Kraft	0	0.0%	0.0%	0.0%
High Grade	6	0.1%	0.0%	0.3%
Mixed Low Grade	151	2.6%	1.4%	3.8%
Compostable/Soiled	10	0.2%	0.1%	0.3%
Single-use Food Service	2	0.0%	0.0%	0.1%
Mixed/Other Paper	9	0.2%	0.0%	0.4%
Plastic	**555**	**9.6%**		
#1 PET Bottles	2	0.0%	0.0%	0.1%
#2 HDPE Natural Bottles	0	0.0%	0.0%	0.0%
#2 HDPE Colored Bottles	1	0.0%	0.0%	0.0%
Other Bottles	0	0.0%	0.0%	0.0%
Tubs	2	0.0%	0.0%	0.1%
Expanded Poly. Nonfood	57	1.0%	1.0%	1.0%
Expanded Poly. Food grade	0	0.0%	0.0%	0.0%
Single-use Food Service	0	0.0%	0.0%	0.0%
Other Rigid Packaging	8	0.1%	0.0%	0.3%
Store/Dry Cleaning Bags	0	0.0%	0.0%	0.0%
Clean PE Film	5	0.1%	0.0%	0.2%
Other Film	7	0.1%	0.0%	0.2%
Durable Plastic Products	455	7.9%	4.1%	11.7%
Plastic/Other Materials	18	0.3%	0.1%	0.6%
Glass	**362**	**6.3%**		
Clear Bottles	0	0.0%	0.0%	0.0%
Green Bottles	1	0.0%	0.0%	0.0%
Brown Bottles	0	0.0%	0.0%	0.0%
Container Glass	0	0.0%	0.0%	0.0%
Fluorescent Tubes	0	0.0%	0.0%	0.0%
Flat Glass	124	2.2%	2.2%	2.2%
Other Glass	237	4.1%	4.0%	4.3%
Metal	**404**	**7.0%**		
Alum. Beverage Cans	0	0.0%	0.0%	0.0%
Alum. Foil/Containers	0	0.0%	0.0%	0.0%
Other Aluminum	1	0.0%	0.0%	0.1%
Other Nonferrous	0	0.0%	0.0%	0.0%
Tin Food Cans	3	0.1%	0.0%	0.1%
Empty Aerosol Cans	0	0.0%	0.0%	0.0%
Other Ferrous	260	4.5%	0.0%	9.8%
Oil filters	0	0.0%	0.0%	0.0%
Mixed Metals/Material	139	2.4%	1.5%	3.4%
Organics	**545**	**9.5%**		
Leaves and Grass	146	2.5%	0.0%	6.4%
Prunings	2	0.0%	0.0%	0.1%
Food	11	0.2%	0.0%	0.5%
Textiles/Clothing	99	1.7%	0.4%	3.1%
Mixed Textiles	46	0.8%	0.2%	1.4%
Carpet	237	4.1%	3.6%	4.6%
Disposable Diapers	0	0.0%	0.0%	0.0%
Animal By-products	0	0.0%	0.0%	0.0%
Rubber Products	5	0.1%	0.0%	0.1%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**3,399**	**59.1%**		
Clean Dimension Lumber	269	4.7%	3.2%	6.2%
Clean Engineered Wood	193	3.3%	1.2%	5.5%
Pallets	0	0.0%	0.0%	0.0%
Crates	0	0.0%	0.0%	0.0%
Other Untreated Wood	19	0.3%	0.0%	0.7%
New Painted Wood	517	9.0%	3.9%	14.1%
Old Painted Wood	224	3.9%	0.5%	7.3%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	12	0.2%	0.1%	0.3%
Contaminated Wood	386	6.7%	3.4%	10.0%
New Gypsum Scrap	26	0.4%	0.1%	0.8%
Demo Gypsum Scrap	256	4.5%	0.0%	9.1%
Fiberglass Insulation	19	0.3%	0.0%	0.9%
Rock/Concrete/Bricks	872	15.2%	5.6%	24.7%
Asphalt Shingles	0	0.0%	0.0%	0.0%
Other Asphaltic Roofing	22	0.4%	0.0%	1.0%
Ceramics	115	2.0%	0.0%	5.1%
Other Construction	469	8.1%	4.5%	11.8%
Appliances & Electronics	**113**	**2.0%**		
Furniture	0	0.0%	0.0%	0.0%
Mattresses	82	1.4%	0.0%	3.9%
Small Appliances	0	0.0%	0.0%	0.0%
Audio/Visual Equipment	27	0.5%	0.0%	1.1%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	4	0.1%	0.0%	0.2%
Potentially Harmful Waste	**37**	**0.6%**		
Latex Paint	8	0.1%	0.0%	0.4%
Solvent-based Adhesives	5	0.1%	0.0%	0.1%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	8	0.1%	0.0%	0.3%
Caustic Cleaners	1	0.0%	0.0%	0.1%
Pesticides/Herbicides	0	0.0%	0.0%	0.0%
Dry-cell Batteries	1	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	6	0.1%	0.0%	0.2%
Other Chemicals	4	0.1%	0.0%	0.2%
Other Potentially Harmful Waste	4	0.1%	0.0%	0.1%
Fines & Misc Materials	**44**	**0.8%**		
Sand/Soil/Dirt	0	0.0%	0.0%	0.0%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	7	0.1%	0.0%	0.2%
Misc. Inorganics	37	0.6%	0.3%	1.0%

Total Percent	**100%**
Total Tons	**5,750**
Sample Count	**21**

Table 6-10. Composition by Weight: Self-haul Trucks
(January – December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**4,585**	**5.4%**		
Newspaper	66	0.1%	0.0%	0.1%
Plain OCC/Kraft	1,543	1.8%	1.4%	2.2%
Waxed OCC/Kraft	410	0.5%	0.0%	1.1%
High Grade	109	0.1%	0.1%	0.2%
Mixed Low Grade	1,017	1.2%	0.8%	1.6%
Compostable/Soiled	248	0.3%	0.2%	0.4%
Single-use Food Service	89	0.1%	0.1%	0.1%
Mixed/Other Paper	1,103	1.3%	0.8%	1.8%
Plastic	**5,665**	**6.7%**		
#1 PET Bottles	50	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	43	0.1%	0.0%	0.1%
#2 HDPE Colored Bottles	86	0.1%	0.1%	0.1%
Other Bottles	2	0.0%	0.0%	0.0%
Tubs	109	0.1%	0.1%	0.2%
Expanded Poly. Nonfood	364	0.4%	0.1%	0.8%
Expanded Poly. Food grade	14	0.0%	0.0%	0.0%
Single-use Food Service	37	0.0%	0.0%	0.1%
Other Rigid Packaging	104	0.1%	0.1%	0.2%
Store/Dry Cleaning Bags	7	0.0%	0.0%	0.0%
Clean PE Film	156	0.2%	0.1%	0.3%
Other Film	484	0.6%	0.4%	0.7%
Durable Plastic Products	2,797	3.3%	2.5%	4.1%
Plastic/Other Materials	1,412	1.7%	1.0%	2.3%
Glass	**1,328**	**1.6%**		
Clear Bottles	161	0.2%	0.1%	0.3%
Green Bottles	65	0.1%	0.0%	0.1%
Brown Bottles	187	0.2%	0.0%	0.4%
Container Glass	15	0.0%	0.0%	0.0%
Fluorescent Tubes	43	0.1%	0.0%	0.1%
Flat Glass	250	0.3%	0.0%	0.6%
Other Glass	607	0.7%	0.4%	1.0%
Metal	**4,288**	**5.0%**		
Alum. Beverage Cans	17	0.0%	0.0%	0.0%
Alum. Foil/Containers	5	0.0%	0.0%	0.0%
Other Aluminum	42	0.0%	0.0%	0.1%
Other Nonferrous	41	0.0%	0.0%	0.1%
Tin Food Cans	43	0.1%	0.0%	0.1%
Empty Aerosol Cans	21	0.0%	0.0%	0.0%
Other Ferrous	1,715	2.0%	1.6%	2.5%
Oil filters	6	0.0%	0.0%	0.0%
Mixed Metals/Material	2,398	2.8%	2.0%	3.7%
Organics	**10,469**	**12.3%**		
Leaves and Grass	940	1.1%	0.5%	1.7%
Prunings	188	0.2%	0.0%	0.4%
Food	1,993	2.3%	1.8%	2.9%
Textiles/Clothing	1,731	2.0%	1.1%	3.0%
Mixed Textiles	1,057	1.2%	0.5%	2.0%
Carpet	3,362	4.0%	2.2%	5.7%
Disposable Diapers	106	0.1%	0.0%	0.2%
Animal By-products	498	0.6%	0.2%	1.0%
Rubber Products	584	0.7%	0.2%	1.2%
Tires	10	0.0%	0.0%	0.0%

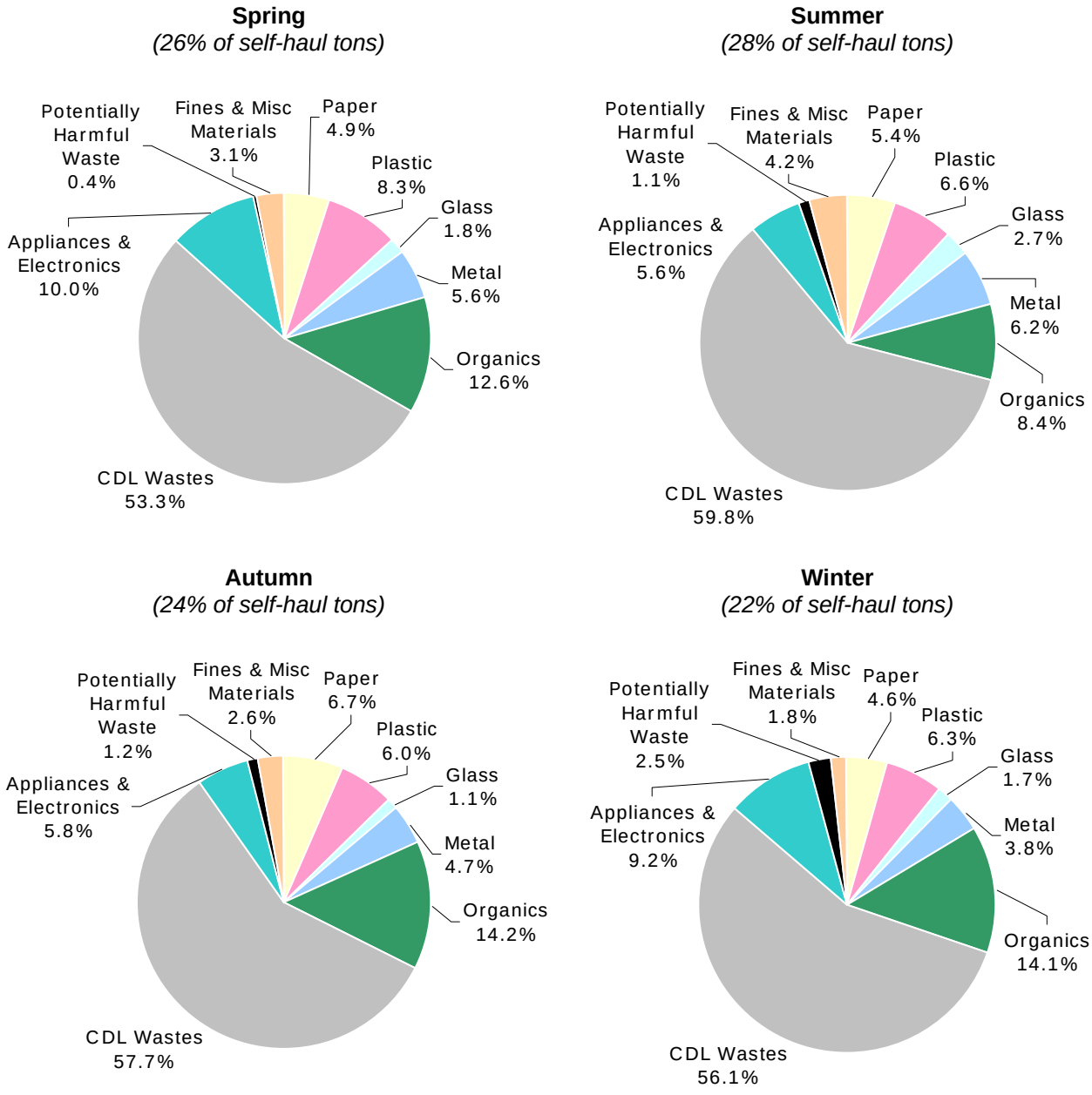
	Tons	Mean	Low	High
CDL Wastes	**48,176**	**56.6%**		
Clean Dimension Lumber	5,643	6.6%	5.2%	8.1%
Clean Engineered Wood	4,768	5.6%	4.2%	7.0%
Pallets	370	0.4%	0.2%	0.6%
Crates	279	0.3%	0.1%	0.6%
Other Untreated Wood	304	0.4%	0.1%	0.6%
New Painted Wood	9,507	11.2%	9.1%	13.2%
Old Painted Wood	2,924	3.4%	2.0%	4.9%
Creosote-treated Wood	396	0.5%	0.0%	1.0%
Other Treated Wood	1,323	1.6%	0.9%	2.2%
Contaminated Wood	4,820	5.7%	4.0%	7.3%
New Gypsum Scrap	1,391	1.6%	0.9%	2.4%
Demo Gypsum Scrap	2,549	3.0%	1.6%	4.4%
Fiberglass Insulation	180	0.2%	0.0%	0.4%
Rock/Concrete/Bricks	3,743	4.4%	2.6%	6.2%
Asphalt Shingles	1,243	1.5%	0.2%	2.7%
Other Asphaltic Roofing	344	0.4%	0.0%	0.9%
Ceramics	1,199	1.4%	0.8%	2.0%
Other Construction	7,191	8.5%	6.4%	10.5%
Appliances & Electronics	**6,788**	**8.0%**		
Furniture	4,663	5.5%	3.7%	7.2%
Mattresses	1,474	1.7%	0.3%	3.2%
Small Appliances	127	0.1%	0.0%	0.3%
Audio/Visual Equipment	481	0.6%	0.3%	0.8%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	42	0.0%	0.0%	0.1%
Potentially Harmful Waste	**1,098**	**1.3%**		
Latex Paint	259	0.3%	0.1%	0.5%
Solvent-based Adhesives	5	0.0%	0.0%	0.0%
Water-based Adhesives	122	0.1%	0.0%	0.4%
Oil-based Paint/Thinners	13	0.0%	0.0%	0.0%
Caustic Cleaners	98	0.1%	0.0%	0.2%
Pesticides/Herbicides	471	0.6%	0.0%	1.1%
Dry-cell Batteries	5	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	6	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	22	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	1	0.0%	0.0%	0.0%
Medical Wastes	13	0.0%	0.0%	0.0%
Other Chemicals	55	0.1%	0.0%	0.1%
Other Potentially Harmful Waste	28	0.0%	0.0%	0.1%
Fines & Misc Materials	**2,684**	**3.2%**		
Sand/Soil/Dirt	2,214	2.6%	1.6%	3.6%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	451	0.5%	0.3%	0.8%
Misc. Inorganics	19	0.0%	0.0%	0.1%

Total Percent	**100%**
Total Tons	**85,079**
Sample Count	**195**

6.3 Self-haul Composition by Season

As shown in Figure 6-3, **CDL wastes** accounted for a substantial portion of the self-haul substream during the year 2008. **CDL wastes** disposal appeared to reach a peak of approximately 60% in the summer. In addition, **organics** composed a relatively large percentage of self-haul waste across seasons: 13% in the spring, 8% in the summer, 14% in the autumn, and 14% in the winter. **CDL wastes** includes such components as *clean dimensional lumber*, *rock/concrete/brick*, and *gypsum scrap*. **Organics** includes components such as *textiles/clothing*, *carpet*, *food*, and *leaves and grass*.

Figure 6-3. Self-haul Composition Summary: by Season



6.3.1 Spring

A total of 44 self-haul samples were taken during the spring months of 2008 (March through May). Self-haul vehicles disposed of 24,092 tons waste during the spring of 2008. The composition estimates for this subpopulation were applied to the 24,092 tons to estimate the amount of waste disposed for each component category. As shown in Table 6-11, the top ten components summed to approximately 64% of the total spring tonnage. *New painted wood* was the largest single component, accounting for about 14% of the total, by weight. *Contaminated wood*, *rock/concrete/bricks*, *other construction debris, clean engineered wood*, *furniture*, and *clean dimensional lumber* were also large components of waste sampled in the spring. ; and *contaminated wood* was a top ten component only in the winter.
Table 6-15 lists the full composition results for the spring.

Table 6-11. Top Ten Components: Self-haul in Spring
(March – May 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	13.5%	13.5%	3,249
Contaminated Wood	9.7%	23.2%	2,333
Rock/Concrete/Bricks	6.9%	30.1%	1,672
Other Construction Debris	6.2%	36.3%	1,492
Clean Engineered Wood	5.6%	41.9%	1,347
Furniture	5.4%	47.3%	1,308
Clean Dimensional Lumber	5.0%	52.3%	1,196
Durable Plastic Products	4.4%	56.6%	1,051
Carpet	4.4%	61.0%	1,049
Mattresses	3.4%	64.4%	822
Total	**64.4%**		**15,518**

6.3.2 Summer

During the summer, 88 self-haul loads were sampled. Self-haul vehicles disposed 25,343 tons of waste during that time. The composition estimates were applied to the 25,343 tons to estimate the amount of waste disposed for each component category. *Other construction debris*, *clean dimensional lumber*, *new painted wood*, and *clean engineered wood* were all large components of waste disposed in the summer (each greater than 5%, by weight). Table 6-12 contains a list of the top ten components, which summed to almost 60% of the total summer tonnage. Refer to Table 6-16 for the complete summer composition results.

Table 6-12. Top Ten Components: Self-haul in Summer
(June – August 2008)

Component	Mean	Cum. %	Tons
Other Construction Debris	10.9%	10.9%	2,763
Clean Dimensional Lumber	9.0%	19.9%	2,280
New Painted Wood	8.6%	28.5%	2,171
Clean Engineered Wood	7.5%	36.0%	1,896
Contaminated Wood	4.7%	40.7%	1,204
Rock/Concrete/Bricks	4.6%	45.3%	1,166
Furniture	3.8%	49.1%	973
Sand/Soil/Dirt	3.7%	52.9%	945
Mixed Metals/Material	3.4%	56.2%	856
Durable Plastic Products	3.3%	59.5%	827
Total	**59.5%**		**15,081**

6.3.3 Autumn

A total of 22 self-haul loads were sampled during the autumn (September through November 2008). Self-haul loads during the autumn amounted to 21,660 tons of waste. The composition estimates for this subpopulation were applied to the 21,660 tons to estimate the amount of waste disposed for each component category. As shown in Table 6-13, *new painted wood* (16.0%) was the single largest component of self-haul waste disposed during the autumn months. When combined, the top ten components accounted for approximately 57% of the total, by weight. Table 6-17 lists the detailed composition results for samples taken from September to November 2008.

Table 6-13. Top Ten Components: Self-haul in Autumn
(September – November 2008)

Component	Mean	Cum. %	Tons
New Painted Wood	16.0%	16.0%	3,462
Clean Dimensional Lumber	6.7%	22.6%	1,443
Other Construction Debris	5.2%	27.8%	1,121
Carpet	4.8%	32.6%	1,032
Clean Engineered Wood	4.7%	37.3%	1,026
Rock/Concrete/Bricks	4.6%	41.9%	1,001
Asphalt Shingles	4.2%	46.2%	915
Demo Gypsum Scrap	4.0%	50.2%	867
Furniture	3.6%	53.8%	790
Old Painted Wood	3.6%	57.4%	773
Total	**57.4%**		**12,429**

6.3.4 Winter

For the winter season of 2008, a total of 62 samples were taken from self-haul loads. Self-haul vehicles disposed 19,733 tons waste during January, February, and December 2008. The composition estimates for this subpopulation were applied to the 19,733 tons to estimate the amount of waste disposed for each component category. Table 6-14 lists the top ten components of waste disposed during the winter. *Other construction debris* made up almost 12% of the self-haul waste in winter, by weight. *Old painted wood* and *furniture* each made up about 8% of this waste. Top ten components summed to approximately 60% of the total, by weight. Please see Table 6-18 for a list of the detailed composition results.

Table 6-14. Top Ten Components: Self-haul in Winter
(January, February, and December 2008)

Component	Mean	Cum. %	Tons
Other Construction Debris	11.6%	11.6%	2,284
Old Painted Wood	8.4%	19.9%	1,651
Furniture	8.1%	28.0%	1,593
New Painted Wood	5.8%	33.8%	1,142
Clean Dimensional Lumber	5.0%	38.8%	993
Contaminated Wood	5.0%	43.8%	983
Demo Gypsum Scrap	4.5%	48.3%	892
Durable Plastic Products	4.0%	52.3%	790
Carpet	4.0%	56.3%	786
Rock/Concrete/Bricks	3.9%	60.3%	777
Total	**60.3%**		**11,891**

6.3.5 Comparisons among Seasons

New painted wood, *rock/concrete/bricks*, *other construction debris*, *furniture*, and *clean dimensional lumber* were top ten components across all four seasons. *Mattresses* was a top ten component only during the spring, while *mixed metals/material* and sand/soil/dirt were top ten components specific to the summer; *asphalt shingles* was included in the top ten components only during autumn; and *contaminated wood* was a top ten component only in the winter.

Table 6-15. Composition by Weight: Self-haul in Spring
(March – May 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**1,175**	**4.9%**		
Newspaper	8	0.0%	0.0%	0.1%
Plain OCC/Kraft	338	1.4%	0.5%	2.3%
Waxed OCC/Kraft	315	1.3%	0.0%	3.5%
High Grade	28	0.1%	0.0%	0.3%
Mixed Low Grade	245	1.0%	0.5%	1.6%
Compostable/Soiled	30	0.1%	0.0%	0.2%
Single-use Food Service	13	0.1%	0.0%	0.1%
Mixed/Other Paper	198	0.8%	0.4%	1.3%
Plastic	**2,009**	**8.3%**		
#1 PET Bottles	12	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	10	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	18	0.1%	0.0%	0.2%
Other Bottles	0	0.0%	0.0%	0.0%
Tubs	20	0.1%	0.0%	0.1%
Expanded Poly. Nonfood	40	0.2%	0.1%	0.2%
Expanded Poly. Food grade	8	0.0%	0.0%	0.1%
Single-use Food Service	8	0.0%	0.0%	0.1%
Other Rigid Packaging	27	0.1%	0.0%	0.2%
Store/Dry Cleaning Bags	2	0.0%	0.0%	0.0%
Clean PE Film	46	0.2%	0.0%	0.4%
Other Film	130	0.5%	0.2%	0.9%
Durable Plastic Products	1,051	4.4%	2.6%	6.1%
Plastic/Other Materials	637	2.6%	0.7%	4.6%
Glass	**440**	**1.8%**		
Clear Bottles	51	0.2%	0.0%	0.5%
Green Bottles	9	0.0%	0.0%	0.1%
Brown Bottles	2	0.0%	0.0%	0.0%
Container Glass	9	0.0%	0.0%	0.1%
Fluorescent Tubes	18	0.1%	0.0%	0.2%
Flat Glass	20	0.1%	0.1%	0.1%
Other Glass	331	1.4%	0.4%	2.4%
Metal	**1,360**	**5.6%**		
Alum. Beverage Cans	4	0.0%	0.0%	0.0%
Alum. Foil/Containers	2	0.0%	0.0%	0.0%
Other Aluminum	3	0.0%	0.0%	0.0%
Other Nonferrous	32	0.1%	0.0%	0.3%
Tin Food Cans	12	0.0%	0.0%	0.1%
Empty Aerosol Cans	0	0.0%	0.0%	0.0%
Other Ferrous	655	2.7%	1.2%	4.3%
Oil filters	0	0.0%	0.0%	0.0%
Mixed Metals/Material	653	2.7%	0.8%	4.7%
Organics	**3,041**	**12.6%**		
Leaves and Grass	224	0.9%	0.0%	2.1%
Prunings	103	0.4%	0.0%	1.0%
Food	664	2.8%	1.1%	4.4%
Textiles/Clothing	261	1.1%	0.5%	1.7%
Mixed Textiles	225	0.9%	0.2%	1.7%
Carpet	1,049	4.4%	1.5%	7.2%
Disposable Diapers	63	0.3%	0.0%	0.7%
Animal By-products	175	0.7%	0.0%	1.5%
Rubber Products	277	1.2%	0.0%	2.9%
Tires	0	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**12,837**	**53.3%**		
Clean Dimension Lumber	1,196	5.0%	1.7%	8.3%
Clean Engineered Wood	1,347	5.6%	2.5%	8.7%
Pallets	0	0.0%	0.0%	0.0%
Crates	143	0.6%	0.0%	1.4%
Other Untreated Wood	34	0.1%	0.0%	0.3%
New Painted Wood	3,249	13.5%	8.5%	18.5%
Old Painted Wood	185	0.8%	0.0%	1.6%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	190	0.8%	0.1%	1.4%
Contaminated Wood	2,333	9.7%	4.7%	14.7%
New Gypsum Scrap	4	0.0%	0.0%	0.0%
Demo Gypsum Scrap	571	2.4%	0.3%	4.4%
Fiberglass Insulation	5	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	1,672	6.9%	1.8%	12.1%
Asphalt Shingles	130	0.5%	0.0%	1.3%
Other Asphaltic Roofing	86	0.4%	0.0%	0.9%
Ceramics	200	0.8%	0.1%	1.5%
Other Construction	1,492	6.2%	1.0%	11.4%
Appliances & Electronics	**2,406**	**10.0%**		
Furniture	1,308	5.4%	1.1%	9.7%
Mattresses	822	3.4%	0.0%	8.2%
Small Appliances	111	0.5%	0.1%	0.9%
Audio/Visual Equipment	166	0.7%	0.1%	1.3%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	0	0.0%	0.0%	0.0%
Potentially Harmful Waste	**89**	**0.4%**		
Latex Paint	12	0.0%	0.0%	0.1%
Solvent-based Adhesives	3	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0	0.0%	0.0%	0.0%
Caustic Cleaners	0	0.0%	0.0%	0.0%
Pesticides/Herbicides	37	0.2%	0.0%	0.4%
Dry-cell Batteries	0	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	0	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	7	0.0%	0.0%	0.1%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	2	0.0%	0.0%	0.0%
Other Chemicals	26	0.1%	0.0%	0.3%
Other Potentially Harmful Waste	1	0.0%	0.0%	0.0%
Fines & Misc Materials	**736**	**3.1%**		
Sand/Soil/Dirt	575	2.4%	0.0%	4.8%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	129	0.5%	0.1%	1.0%
Misc. Inorganics	33	0.1%	0.0%	0.3%

Total Percent	**100%**
Total Tons	**24,092**
Sample Count	**44**

Table 6-16. Composition by Weight: Self-haul in Summer
(June – August 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**1,361**	**5.4%**		
Newspaper	24	0.1%	0.0%	0.2%
Plain OCC/Kraft	314	1.2%	0.8%	1.6%
Waxed OCC/Kraft	2	0.0%	0.0%	0.0%
High Grade	24	0.1%	0.0%	0.2%
Mixed Low Grade	311	1.2%	0.6%	1.9%
Compostable/Soiled	107	0.4%	0.1%	0.7%
Single-use Food Service	27	0.1%	0.0%	0.2%
Mixed/Other Paper	551	2.2%	0.7%	3.6%
Plastic	**1,671**	**6.6%**		
#1 PET Bottles	18	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	9	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	19	0.1%	0.0%	0.1%
Other Bottles	1	0.0%	0.0%	0.0%
Tubs	14	0.1%	0.0%	0.1%
Expanded Poly. Nonfood	274	1.1%	0.0%	2.3%
Expanded Poly. Food grade	2	0.0%	0.0%	0.0%
Single-use Food Service	13	0.1%	0.0%	0.1%
Other Rigid Packaging	5	0.0%	0.0%	0.0%
Store/Dry Cleaning Bags	2	0.0%	0.0%	0.0%
Clean PE Film	17	0.1%	0.0%	0.1%
Other Film	88	0.3%	0.2%	0.5%
Durable Plastic Products	827	3.3%	1.3%	5.3%
Plastic/Other Materials	382	1.5%	0.8%	2.3%
Glass	**688**	**2.7%**		
Clear Bottles	50	0.2%	0.0%	0.5%
Green Bottles	38	0.1%	0.0%	0.3%
Brown Bottles	92	0.4%	0.0%	0.9%
Container Glass	1	0.0%	0.0%	0.0%
Fluorescent Tubes	3	0.0%	0.0%	0.0%
Flat Glass	240	0.9%	0.2%	1.7%
Other Glass	264	1.0%	0.8%	1.3%
Metal	**1,565**	**6.2%**		
Alum. Beverage Cans	9	0.0%	0.0%	0.1%
Alum. Foil/Containers	2	0.0%	0.0%	0.0%
Other Aluminum	31	0.1%	0.0%	0.2%
Other Nonferrous	4	0.0%	0.0%	0.0%
Tin Food Cans	21	0.1%	0.0%	0.1%
Empty Aerosol Cans	18	0.1%	0.0%	0.2%
Other Ferrous	621	2.5%	1.5%	3.4%
Oil filters	2	0.0%	0.0%	0.0%
Mixed Metals/Material	856	3.4%	1.4%	5.3%
Organics	**2,122**	**8.4%**		
Leaves and Grass	347	1.4%	0.4%	2.3%
Prunings	11	0.0%	0.0%	0.1%
Food	280	1.1%	0.5%	1.7%
Textiles/Clothing	270	1.1%	0.3%	1.8%
Mixed Textiles	122	0.5%	0.1%	0.8%
Carpet	731	2.9%	1.5%	4.3%
Disposable Diapers	6	0.0%	0.0%	0.1%
Animal By-products	269	1.1%	0.0%	2.2%
Rubber Products	82	0.3%	0.2%	0.5%
Tires	3	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**15,156**	**59.8%**		
Clean Dimension Lumber	2,280	9.0%	6.5%	11.5%
Clean Engineered Wood	1,896	7.5%	4.9%	10.1%
Pallets	124	0.5%	0.0%	1.0%
Crates	19	0.1%	0.0%	0.2%
Other Untreated Wood	208	0.8%	0.1%	1.5%
New Painted Wood	2,171	8.6%	5.9%	11.3%
Old Painted Wood	539	2.1%	1.0%	3.3%
Creosote-treated Wood	213	0.8%	0.0%	2.2%
Other Treated Wood	487	1.9%	0.5%	3.4%
Contaminated Wood	1,204	4.7%	3.0%	6.5%
New Gypsum Scrap	619	2.4%	1.1%	3.8%
Demo Gypsum Scrap	476	1.9%	0.5%	3.2%
Fiberglass Insulation	19	0.1%	0.0%	0.2%
Rock/Concrete/Bricks	1,166	4.6%	1.6%	7.6%
Asphalt Shingles	120	0.5%	0.0%	1.0%
Other Asphaltic Roofing	248	1.0%	0.0%	2.5%
Ceramics	604	2.4%	1.0%	3.8%
Other Construction	2,763	10.9%	7.9%	13.9%
Appliances & Electronics	**1,426**	**5.6%**		
Furniture	973	3.8%	1.4%	6.3%
Mattresses	264	1.0%	0.0%	2.2%
Small Appliances	0	0.0%	0.0%	0.0%
Audio/Visual Equipment	189	0.7%	0.1%	1.4%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	0	0.0%	0.0%	0.0%
Potentially Harmful Waste	**284**	**1.1%**		
Latex Paint	90	0.4%	0.0%	0.7%
Solvent-based Adhesives	0	0.0%	0.0%	0.0%
Water-based Adhesives	122	0.5%	0.0%	1.2%
Oil-based Paint/Thinners	1	0.0%	0.0%	0.0%
Caustic Cleaners	27	0.1%	0.0%	0.2%
Pesticides/Herbicides	16	0.1%	0.0%	0.1%
Dry-cell Batteries	3	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	3	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	2	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	0	0.0%	0.0%	0.0%
Other Chemicals	5	0.0%	0.0%	0.1%
Other Potentially Harmful Waste	17	0.1%	0.0%	0.2%
Fines & Misc Materials	**1,071**	**4.2%**		
Sand/Soil/Dirt	945	3.7%	1.5%	5.9%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	127	0.5%	0.0%	1.0%
Misc. Inorganics	0	0.0%	0.0%	0.0%

Total Percent	**100%**
Total Tons	**25,343**
Sample Count	**88**

Table 6-17. Composition by Weight: Self-haul in Autumn
(September – November 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**1,441**	**6.7%**		
Newspaper	14	0.1%	0.1%	0.1%
Plain OCC/Kraft	557	2.6%	2.1%	3.0%
Waxed OCC/Kraft	93	0.4%	0.4%	0.4%
High Grade	52	0.2%	0.2%	0.3%
Mixed Low Grade	395	1.8%	0.9%	2.7%
Compostable/Soiled	110	0.5%	0.3%	0.7%
Single-use Food Service	49	0.2%	0.2%	0.2%
Mixed/Other Paper	172	0.8%	0.6%	1.0%
Plastic	**1,306**	**6.0%**		
#1 PET Bottles	16	0.1%	0.1%	0.1%
#2 HDPE Natural Bottles	19	0.1%	0.1%	0.1%
#2 HDPE Colored Bottles	48	0.2%	0.1%	0.3%
Other Bottles	1	0.0%	0.0%	0.0%
Tubs	40	0.2%	0.0%	0.3%
Expanded Poly. Nonfood	53	0.2%	0.1%	0.3%
Expanded Poly. Food grade	3	0.0%	0.0%	0.0%
Single-use Food Service	17	0.1%	0.1%	0.1%
Other Rigid Packaging	18	0.1%	0.1%	0.1%
Store/Dry Cleaning Bags	1	0.0%	0.0%	0.0%
Clean PE Film	81	0.4%	0.0%	0.7%
Other Film	192	0.9%	0.6%	1.2%
Durable Plastic Products	584	2.7%	2.2%	3.2%
Plastic/Other Materials	232	1.1%	0.9%	1.3%
Glass	**235**	**1.1%**		
Clear Bottles	29	0.1%	0.1%	0.1%
Green Bottles	11	0.0%	0.0%	0.0%
Brown Bottles	32	0.1%	0.1%	0.1%
Container Glass	2	0.0%	0.0%	0.0%
Fluorescent Tubes	18	0.1%	0.0%	0.2%
Flat Glass	25	0.1%	0.1%	0.1%
Other Glass	119	0.6%	0.4%	0.7%
Metal	**1,014**	**4.7%**		
Alum. Beverage Cans	4	0.0%	0.0%	0.0%
Alum. Foil/Containers	1	0.0%	0.0%	0.0%
Other Aluminum	6	0.0%	0.0%	0.0%
Other Nonferrous	5	0.0%	0.0%	0.0%
Tin Food Cans	10	0.0%	0.0%	0.0%
Empty Aerosol Cans	2	0.0%	0.0%	0.0%
Other Ferrous	412	1.9%	1.4%	2.4%
Oil filters	1	0.0%	0.0%	0.0%
Mixed Metals/Material	573	2.6%	1.8%	3.5%
Organics	**3,069**	**14.2%**		
Leaves and Grass	88	0.4%	0.4%	0.4%
Prunings	42	0.2%	0.0%	0.5%
Food	764	3.5%	3.4%	3.6%
Textiles/Clothing	677	3.1%	0.1%	6.1%
Mixed Textiles	199	0.9%	0.3%	1.6%
Carpet	1,032	4.8%	0.1%	9.4%
Disposable Diapers	32	0.1%	0.1%	0.1%
Animal By-products	54	0.2%	0.2%	0.2%
Rubber Products	179	0.8%	0.3%	1.3%
Tires	2	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**12,504**	**57.7%**		
Clean Dimension Lumber	1,443	6.7%	4.4%	8.9%
Clean Engineered Wood	1,026	4.7%	3.1%	6.4%
Pallets	104	0.5%	0.5%	0.5%
Crates	69	0.3%	0.0%	0.8%
Other Untreated Wood	38	0.2%	0.1%	0.3%
New Painted Wood	3,462	16.0%	11.5%	20.5%
Old Painted Wood	773	3.6%	0.0%	7.1%
Creosote-treated Wood	183	0.8%	0.0%	2.2%
Other Treated Wood	351	1.6%	0.5%	2.7%
Contaminated Wood	686	3.2%	2.4%	3.9%
New Gypsum Scrap	222	1.0%	0.6%	1.4%
Demo Gypsum Scrap	867	4.0%	0.2%	7.8%
Fiberglass Insulation	41	0.2%	0.0%	0.4%
Rock/Concrete/Bricks	1,001	4.6%	1.3%	7.9%
Asphalt Shingles	915	4.2%	0.0%	9.0%
Other Asphaltic Roofing	1	0.0%	0.0%	0.0%
Ceramics	204	0.9%	0.2%	1.7%
Other Construction	1,121	5.2%	4.1%	6.3%
Appliances & Electronics	**1,250**	**5.8%**		
Furniture	790	3.6%	3.6%	3.6%
Mattresses	370	1.7%	0.4%	3.0%
Small Appliances	5	0.0%	0.0%	0.0%
Audio/Visual Equipment	71	0.3%	0.3%	0.4%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	14	0.1%	0.0%	0.1%
Potentially Harmful Waste	**267**	**1.2%**		
Latex Paint	96	0.4%	0.0%	0.9%
Solvent-based Adhesives	3	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	8	0.0%	0.0%	0.1%
Caustic Cleaners	22	0.1%	0.1%	0.1%
Pesticides/Herbicides	105	0.5%	0.5%	0.5%
Dry-cell Batteries	1	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	1	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	1	0.0%	0.0%	0.0%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	0	0.0%	0.0%	0.0%
Medical Wastes	12	0.1%	0.1%	0.1%
Other Chemicals	10	0.0%	0.0%	0.1%
Other Potentially Harmful Waste	8	0.0%	0.0%	0.0%
Fines & Misc Materials	**574**	**2.6%**		
Sand/Soil/Dirt	464	2.1%	1.7%	2.6%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	99	0.5%	0.2%	0.7%
Misc. Inorganics	12	0.1%	0.1%	0.1%

Total Percent	**100%**
Total Tons	**21,660**
Sample Count	**22**

Table 6-18. Composition by Weight: Self-haul in Winter
(January, February, and December 2008)

Calculated at a 90% confidence level

	Tons	Mean	Low	High
Paper	**899**	**4.6%**		
Newspaper	20	0.1%	0.0%	0.2%
Plain OCC/Kraft	447	2.3%	1.2%	3.4%
Waxed OCC/Kraft	0	0.0%	0.0%	0.0%
High Grade	11	0.1%	0.0%	0.1%
Mixed Low Grade	217	1.1%	0.4%	1.8%
Compostable/Soiled	11	0.1%	0.0%	0.1%
Single-use Food Service	2	0.0%	0.0%	0.0%
Mixed/Other Paper	192	1.0%	0.4%	1.5%
Plastic	**1,235**	**6.3%**		
#1 PET Bottles	6	0.0%	0.0%	0.1%
#2 HDPE Natural Bottles	6	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	2	0.0%	0.0%	0.0%
Other Bottles	0	0.0%	0.0%	0.0%
Tubs	36	0.2%	0.1%	0.3%
Expanded Poly. Nonfood	54	0.3%	0.0%	0.5%
Expanded Poly. Food grade	1	0.0%	0.0%	0.0%
Single-use Food Service	0	0.0%	0.0%	0.0%
Other Rigid Packaging	61	0.3%	0.1%	0.6%
Store/Dry Cleaning Bags	1	0.0%	0.0%	0.0%
Clean PE Film	17	0.1%	0.0%	0.2%
Other Film	81	0.4%	0.2%	0.6%
Durable Plastic Products	790	4.0%	2.7%	5.3%
Plastic/Other Materials	179	0.9%	0.2%	1.6%
Glass	**327**	**1.7%**		
Clear Bottles	31	0.2%	0.0%	0.3%
Green Bottles	9	0.0%	0.0%	0.1%
Brown Bottles	61	0.3%	0.0%	0.8%
Container Glass	2	0.0%	0.0%	0.0%
Fluorescent Tubes	4	0.0%	0.0%	0.1%
Flat Glass	89	0.5%	0.0%	1.1%
Other Glass	130	0.7%	0.1%	1.2%
Metal	**753**	**3.8%**		
Alum. Beverage Cans	0	0.0%	0.0%	0.0%
Alum. Foil/Containers	0	0.0%	0.0%	0.0%
Other Aluminum	2	0.0%	0.0%	0.0%
Other Nonferrous	0	0.0%	0.0%	0.0%
Tin Food Cans	4	0.0%	0.0%	0.0%
Empty Aerosol Cans	2	0.0%	0.0%	0.0%
Other Ferrous	287	1.5%	0.6%	2.3%
Oil filters	4	0.0%	0.0%	0.0%
Mixed Metals/Material	454	2.3%	1.2%	3.4%
Organics	**2,782**	**14.1%**		
Leaves and Grass	427	2.2%	0.0%	4.5%
Prunings	35	0.2%	0.0%	0.4%
Food	297	1.5%	0.4%	2.6%
Textiles/Clothing	623	3.2%	1.2%	5.1%
Mixed Textiles	557	2.8%	0.0%	6.0%
Carpet	786	4.0%	0.0%	8.0%
Disposable Diapers	5	0.0%	0.0%	0.1%
Animal By-products	0	0.0%	0.0%	0.0%
Rubber Products	50	0.3%	0.0%	0.5%
Tires	4	0.0%	0.0%	0.0%

	Tons	Mean	Low	High
CDL Wastes	**11,077**	**56.1%**		
Clean Dimension Lumber	993	5.0%	2.4%	7.6%
Clean Engineered Wood	692	3.5%	1.0%	6.0%
Pallets	143	0.7%	0.0%	1.4%
Crates	48	0.2%	0.0%	0.6%
Other Untreated Wood	43	0.2%	0.0%	0.5%
New Painted Wood	1,142	5.8%	3.2%	8.4%
Old Painted Wood	1,651	8.4%	3.9%	12.8%
Creosote-treated Wood	0	0.0%	0.0%	0.0%
Other Treated Wood	306	1.6%	0.3%	2.8%
Contaminated Wood	983	5.0%	2.2%	7.7%
New Gypsum Scrap	572	2.9%	0.1%	5.7%
Demo Gypsum Scrap	892	4.5%	0.9%	8.1%
Fiberglass Insulation	135	0.7%	0.0%	1.4%
Rock/Concrete/Bricks	777	3.9%	2.1%	5.8%
Asphalt Shingles	78	0.4%	0.0%	1.0%
Other Asphaltic Roofing	32	0.2%	0.0%	0.3%
Ceramics	306	1.5%	0.1%	3.0%
Other Construction	2,284	11.6%	6.9%	16.3%
Appliances & Electronics	**1,820**	**9.2%**		
Furniture	1,593	8.1%	3.8%	12.4%
Mattresses	101	0.5%	0.0%	1.2%
Small Appliances	11	0.1%	0.0%	0.1%
Audio/Visual Equipment	83	0.4%	0.1%	0.7%
CRT Monitors	0	0.0%	0.0%	0.0%
CRT Televisions	0	0.0%	0.0%	0.0%
Other Computer Equipment	32	0.2%	0.0%	0.3%
Potentially Harmful Waste	**495**	**2.5%**		
Latex Paint	70	0.4%	0.0%	0.7%
Solvent-based Adhesives	4	0.0%	0.0%	0.0%
Water-based Adhesives	0	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	12	0.1%	0.0%	0.2%
Caustic Cleaners	50	0.3%	0.0%	0.6%
Pesticides/Herbicides	312	1.6%	0.0%	3.8%
Dry-cell Batteries	2	0.0%	0.0%	0.0%
Wet-cell Batteries	0	0.0%	0.0%	0.0%
Gasoline/Kerosene	2	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	13	0.1%	0.0%	0.2%
Asbestos	0	0.0%	0.0%	0.0%
Explosives	1	0.0%	0.0%	0.0%
Medical Wastes	5	0.0%	0.0%	0.1%
Other Chemicals	18	0.1%	0.0%	0.2%
Other Potentially Harmful Waste	6	0.0%	0.0%	0.1%
Fines & Misc Materials	**346**	**1.8%**		
Sand/Soil/Dirt	230	1.2%	0.0%	2.4%
Non-distinct Fines	0	0.0%	0.0%	0.0%
Misc. Organics	103	0.5%	0.0%	1.0%
Misc. Inorganics	12	0.1%	0.0%	0.2%

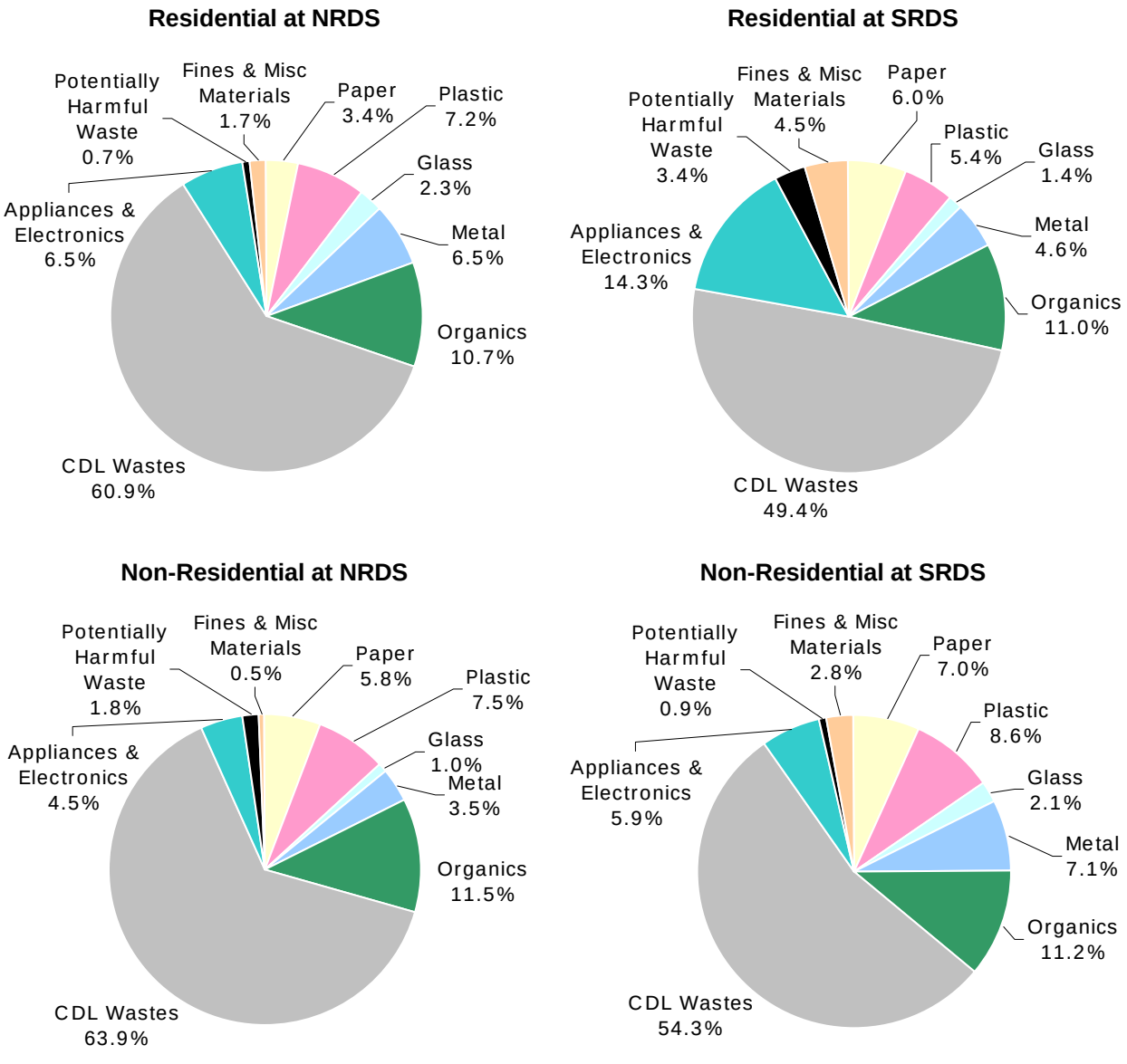
Total Percent	**100%**
Total Tons	**19,733**
Sample Count	**62**

6.4 Self-haul Composition by Generator Type, by Site

This section provides a brief overview of the wastes self-hauled by residential and non-residential generators to the NRDS and SRDS. One of the purposes of this study was to determine the ratio of residential to non-residential self-haul waste. To accomplish this, self-haul samples were not stratified by vehicle type.

As shown in Figure 6-4, **CDL wastes** accounted for over 40% of the total for residential and non-residential waste at both the NRDS and the SRDS. **CDL wastes** include components such as *clean dimensional lumber*, *rock/concrete/bricks*, and *new gypsum scrap*.

Figure 6-4. Self-haul Composition Summary: by Generator Type, by Site
(January – December 2008)



6.4.1 Residential Generators, by Site

6.4.1.1 North Recycling and Disposal Station (NRDS)

A total of 50 samples were taken from residential loads at the NRDS. As shown in Table 6-19, *new painted wood* made up almost 14% of the tonnage. Table 6-23 lists detailed composition results for the residential waste disposed at the NRDS.

Table 6-19. Top Ten Components: Self-haul Residential at NRDS
(January – December 2008)

Component	Mean	Cum. %
New Painted Wood	13.7%	13.7%
Rock/Concrete/Bricks	9.2%	22.9%
Other Construction Debris	8.6%	31.5%
Contaminated Wood	7.4%	38.8%
Clean Engineered Wood	5.2%	44.1%
Clean Dimensional Lumber	4.9%	49.0%
Furniture	3.9%	52.9%
Other Ferrous Metal	3.8%	56.7%
Demo Gypsum Scrap	3.7%	60.4%
Durable Plastic Products	3.4%	63.8%
Total	**63.8%**	

6.4.1.2 South Recycling and Disposal Station (SRDS)

A total of 39 samples were taken from residential loads at the SRDS. As shown in Table 6-20, *new painted wood*, the largest component, made up almost 14% of the total, followed by *furniture*, which accounted for about 12%. Table 6-24 lists detailed composition results for the residential waste disposed at the SRDS.

Table 6-20. Top Ten Components: Self-haul Residential at SRDS
(January – December 2008)

Component	Mean	Cum. %
New Painted Wood	13.9%	13.9%
Furniture	12.2%	26.1%
Clean Dimensional Lumber	6.8%	32.9%
Contaminated Wood	5.8%	38.7%
Clean Engineered Wood	5.7%	44.4%
Other Construction Debris	5.6%	50.0%
Rock/Concrete/Bricks	4.1%	54.0%
Durable Plastic Products	3.7%	57.7%
Demo Gypsum Scrap	3.6%	61.3%
Sand/Soil/Dirt	3.5%	64.8%
Total	**64.8%**	

6.4.2 Non-Residential Generators, by Site

6.4.2.1 North Recycling and Disposal Station (NRDS)

A total of 51 samples were taken from non-residential loads at the NRDS. As shown in Table 6-21, *other construction debris* accounted for approximately 12% of the total, by weight. Table 6-25 lists detailed composition results for the non-residential waste disposed at the NRDS.

Table 6-21. Top Ten Components: Self-haul Non-residential at NRDS
(January – December 2008)

Component	Mean	Cum. %
Other Construction Debris	12.1%	12.1%
Old Painted Wood	8.5%	20.6%
Clean Dimensional Lumber	8.4%	29.0%
Clean Engineered Wood	6.5%	35.5%
New Painted Wood	6.2%	41.7%
Carpet	5.4%	47.2%
Durable Plastic Products	4.7%	51.8%
Contaminated Wood	3.8%	55.7%
Rock/Concrete/Bricks	3.6%	59.3%
New Gypsum Scrap	3.3%	62.6%
Total	**62.6%**	

6.4.2.2 South Recycling and Disposal Station (SRDS)

A total of 49 samples were taken from non-residential loads at the SRDS. As shown in Table 6-22, the top ten components accounted for a combined total of 61% of the tonnage. *Other construction debris* was the single largest component of this waste. Table 6-26 lists detailed composition results for the non-residential waste disposed at the SRDS.

Table 6-22. Top Ten Components: Self-haul Non-residential at SRDS
(January – December 2008)

Component	Mean	Cum. %
Other Construction Debris	10.4%	10.4%
New Painted Wood	9.6%	20.0%
Clean Dimensional Lumber	7.1%	27.1%
Clean Engineered Wood	6.1%	33.2%
Rock/Concrete/Bricks	5.2%	38.4%
Furniture	5.0%	43.4%
Contaminated Wood	5.0%	48.3%
Mixed Metals/Material	4.7%	53.1%
Durable Plastic Products	4.6%	57.7%
Carpet	3.3%	61.0%
Total	**61.0%**	

6.4.3 Comparisons among Generator Types and Sites

New painted wood, *rock/concrete/bricks*, *other construction debris*, *contaminated wood*, *clean engineered wood*, *clean dimensional lumber*, and *durable plastic products* were top ten components for both residential and non-residential generators at both sites. Materials particular to the top ten components for only one group include *other ferrous metal* for self-haul residential at NRDS as well as *old painted wood* and *new gypsum scrap* for self-haul non-residential at NRDS.

Table 6-23. Composition by Weight: Self-haul Residential at NRDS
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**3.4%**		
Newspaper	0.1%	0.0%	0.2%
Plain OCC/Kraft	1.2%	0.6%	1.8%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	0.0%	0.0%	0.1%
Mixed Low Grade	1.3%	0.4%	2.3%
Compostable/Soiled	0.0%	0.0%	0.1%
Single-use Food Service	0.0%	0.0%	0.0%
Mixed/Other Paper	0.7%	0.2%	1.2%
Plastic	**7.2%**		
#1 PET Bottles	0.0%	0.0%	0.0%
#2 HDPE Natural Bottles	0.0%	0.0%	0.0%
#2 HDPE Colored Bottles	0.1%	0.0%	0.1%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.0%	0.0%	0.1%
Expanded Poly. Nonfood	0.1%	0.1%	0.2%
Expanded Poly. Food grade	0.0%	0.0%	0.0%
Single-use Food Service	0.0%	0.0%	0.0%
Other Rigid Packaging	0.2%	0.0%	0.5%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	0.1%	0.0%	0.2%
Other Film	0.3%	0.1%	0.6%
Durable Plastic Products	3.4%	2.0%	4.8%
Plastic/Other Materials	2.8%	1.0%	4.7%
Glass	**2.3%**		
Clear Bottles	0.1%	0.0%	0.2%
Green Bottles	0.0%	0.0%	0.1%
Brown Bottles	0.3%	0.0%	0.7%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.1%	0.0%	0.1%
Flat Glass	0.7%	0.0%	1.9%
Other Glass	1.1%	0.2%	2.1%
Metal	**6.5%**		
Alum. Beverage Cans	0.0%	0.0%	0.0%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.1%	0.0%	0.3%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.0%	0.0%	0.0%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	3.8%	1.8%	5.8%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	2.5%	1.2%	3.9%
Organics	**10.7%**		
Leaves and Grass	1.1%	0.0%	3.0%
Prunings	0.4%	0.0%	0.9%
Food	1.0%	0.3%	1.7%
Textiles/Clothing	2.8%	0.9%	4.7%
Mixed Textiles	1.5%	0.7%	2.3%
Carpet	3.1%	1.5%	4.8%
Disposable Diapers	0.0%	0.0%	0.0%
Animal By-products	0.3%	0.0%	0.6%
Rubber Products	0.5%	0.1%	0.8%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**60.9%**		
Clean Dimension Lumber	4.9%	2.6%	7.2%
Clean Engineered Wood	5.2%	2.4%	8.1%
Pallets	0.0%	0.0%	0.0%
Crates	0.3%	0.0%	0.7%
Other Untreated Wood	0.3%	0.0%	0.6%
New Painted Wood	13.7%	9.2%	18.2%
Old Painted Wood	2.4%	0.2%	4.6%
Creosote-treated Wood	0.5%	0.0%	1.3%
Other Treated Wood	0.6%	0.0%	1.2%
Contaminated Wood	7.4%	2.7%	12.0%
New Gypsum Scrap	0.5%	0.1%	0.8%
Demo Gypsum Scrap	3.7%	0.9%	6.5%
Fiberglass Insulation	0.2%	0.0%	0.4%
Rock/Concrete/Bricks	9.2%	2.8%	15.6%
Asphalt Shingles	1.2%	0.0%	2.6%
Other Asphaltic Roofing	0.4%	0.0%	0.9%
Ceramics	2.0%	0.6%	3.5%
Other Construction	8.6%	3.5%	13.7%
Appliances & Electronics	**6.5%**		
Furniture	3.9%	0.3%	7.6%
Mattresses	1.6%	0.0%	3.6%
Small Appliances	0.3%	0.0%	0.6%
Audio/Visual Equipment	0.6%	0.1%	1.1%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.1%	0.0%	0.2%
Potentially Harmful Waste	**0.7%**		
Latex Paint	0.2%	0.0%	0.4%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.1%	0.0%	0.1%
Caustic Cleaners	0.1%	0.0%	0.1%
Pesticides/Herbicides	0.1%	0.0%	0.4%
Dry-cell Batteries	0.0%	0.0%	0.1%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.1%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.1%	0.0%	0.3%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**1.7%**		
Sand/Soil/Dirt	1.2%	0.2%	2.1%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.5%	0.1%	0.8%
Misc. Inorganics	0.1%	0.0%	0.2%
Total Percent	**100%**		
Sample Count	**50**		

Table 6-24. Composition by Weight: Self-haul Residential at SRDS
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**6.0%**		
Newspaper	0.1%	0.0%	0.2%
Plain OCC/Kraft	2.8%	1.2%	4.3%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	0.2%	0.0%	0.4%
Mixed Low Grade	1.6%	0.6%	2.6%
Compostable/Soiled	0.1%	0.0%	0.2%
Single-use Food Service	0.0%	0.0%	0.1%
Mixed/Other Paper	1.2%	0.4%	2.0%
Plastic	**5.4%**		
#1 PET Bottles	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	0.1%	0.0%	0.1%
#2 HDPE Colored Bottles	0.1%	0.0%	0.2%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.3%	0.2%	0.4%
Expanded Poly. Nonfood	0.1%	0.0%	0.2%
Expanded Poly. Food grade	0.0%	0.0%	0.0%
Single-use Food Service	0.0%	0.0%	0.0%
Other Rigid Packaging	0.1%	0.0%	0.1%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	0.1%	0.0%	0.3%
Other Film	0.5%	0.2%	0.8%
Durable Plastic Products	3.7%	2.3%	5.0%
Plastic/Other Materials	0.4%	0.2%	0.7%
Glass	**1.4%**		
Clear Bottles	0.3%	0.0%	0.6%
Green Bottles	0.0%	0.0%	0.0%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.1%	0.0%	0.1%
Fluorescent Tubes	0.1%	0.0%	0.2%
Flat Glass	0.1%	0.0%	0.2%
Other Glass	0.9%	0.0%	1.8%
Metal	**4.6%**		
Alum. Beverage Cans	0.0%	0.0%	0.0%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.1%	0.0%	0.3%
Tin Food Cans	0.1%	0.0%	0.2%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	1.3%	0.5%	2.1%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	3.0%	1.3%	4.8%
Organics	**11.0%**		
Leaves and Grass	1.1%	0.0%	2.4%
Prunings	0.2%	0.0%	0.4%
Food	2.8%	0.6%	5.0%
Textiles/Clothing	2.1%	0.4%	3.8%
Mixed Textiles	1.0%	0.4%	1.6%
Carpet	2.8%	0.0%	6.5%
Disposable Diapers	0.3%	0.0%	0.8%
Animal By-products	0.5%	0.0%	1.3%
Rubber Products	0.3%	0.0%	0.6%
Tires	0.0%	0.0%	0.1%

	Mean	Low	High
CDL Wastes	**49.4%**		
Clean Dimension Lumber	6.8%	2.0%	11.7%
Clean Engineered Wood	5.7%	2.3%	9.1%
Pallets	0.8%	0.0%	2.1%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.1%	0.0%	0.3%
New Painted Wood	13.9%	7.8%	20.0%
Old Painted Wood	0.1%	0.0%	0.3%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	1.5%	0.6%	2.4%
Contaminated Wood	5.8%	1.3%	10.2%
New Gypsum Scrap	0.4%	0.0%	0.9%
Demo Gypsum Scrap	3.6%	0.2%	7.0%
Fiberglass Insulation	0.2%	0.0%	0.5%
Rock/Concrete/Bricks	4.1%	1.0%	7.1%
Asphalt Shingles	0.6%	0.0%	1.5%
Other Asphaltic Roofing	0.0%	0.0%	0.0%
Ceramics	0.1%	0.0%	0.3%
Other Construction	5.6%	2.3%	9.0%
Appliances & Electronics	**14.3%**		
Furniture	12.2%	5.0%	19.3%
Mattresses	1.1%	0.0%	2.6%
Small Appliances	0.2%	0.0%	0.4%
Audio/Visual Equipment	0.6%	0.1%	1.1%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.3%	0.0%	0.6%
Potentially Harmful Waste	**3.4%**		
Latex Paint	0.2%	0.0%	0.4%
Solvent-based Adhesives	0.1%	0.0%	0.1%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.1%	0.0%	0.1%
Pesticides/Herbicides	2.9%	0.0%	7.6%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.1%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.1%	0.0%	0.1%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.1%
Fines & Misc Materials	**4.5%**		
Sand/Soil/Dirt	3.5%	0.2%	6.8%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.7%	0.2%	1.3%
Misc. Inorganics	0.2%	0.0%	0.6%
Total Percent	**100%**		
Sample Count	**39**		

Table 6-25. Composition by Weight: Self-haul Non-Residential at NRDS
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**5.8%**		
Newspaper	0.1%	0.0%	0.1%
Plain OCC/Kraft	1.4%	0.8%	1.9%
Waxed OCC/Kraft	0.0%	0.0%	0.0%
High Grade	0.1%	0.0%	0.3%
Mixed Low Grade	0.8%	0.2%	1.5%
Compostable/Soiled	0.4%	0.0%	0.8%
Single-use Food Service	0.0%	0.0%	0.1%
Mixed/Other Paper	2.9%	0.6%	5.2%
Plastic	**7.5%**		
#1 PET Bottles	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	0.0%	0.0%	0.1%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.1%	0.0%	0.2%
Expanded Poly. Nonfood	1.4%	0.0%	3.3%
Expanded Poly. Food grade	0.0%	0.0%	0.0%
Single-use Food Service	0.0%	0.0%	0.0%
Other Rigid Packaging	0.0%	0.0%	0.0%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	0.2%	0.0%	0.4%
Other Film	0.5%	0.3%	0.7%
Durable Plastic Products	4.7%	1.5%	7.8%
Plastic/Other Materials	0.6%	0.2%	1.0%
Glass	**1.0%**		
Clear Bottles	0.1%	0.0%	0.2%
Green Bottles	0.1%	0.0%	0.1%
Brown Bottles	0.0%	0.0%	0.0%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.5%	0.0%	1.0%
Other Glass	0.4%	0.0%	0.7%
Metal	**3.5%**		
Alum. Beverage Cans	0.0%	0.0%	0.1%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.0%	0.0%	0.0%
Other Nonferrous	0.0%	0.0%	0.1%
Tin Food Cans	0.0%	0.0%	0.1%
Empty Aerosol Cans	0.1%	0.0%	0.2%
Other Ferrous	1.2%	0.5%	2.0%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	2.1%	0.6%	3.6%
Organics	**11.5%**		
Leaves and Grass	2.1%	0.0%	4.2%
Prunings	0.1%	0.0%	0.3%
Food	0.4%	0.0%	0.8%
Textiles/Clothing	1.6%	0.0%	3.2%
Mixed Textiles	1.8%	0.0%	4.6%
Carpet	5.4%	1.1%	9.8%
Disposable Diapers	0.0%	0.0%	0.0%
Animal By-products	0.0%	0.0%	0.0%
Rubber Products	0.1%	0.0%	0.3%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**63.9%**		
Clean Dimension Lumber	8.4%	5.4%	11.4%
Clean Engineered Wood	6.5%	3.5%	9.6%
Pallets	0.1%	0.0%	0.3%
Crates	0.7%	0.0%	1.5%
Other Untreated Wood	0.8%	0.0%	1.6%
New Painted Wood	6.2%	2.8%	9.6%
Old Painted Wood	8.5%	4.0%	13.1%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	0.9%	0.3%	1.5%
Contaminated Wood	3.8%	1.9%	5.8%
New Gypsum Scrap	3.3%	0.7%	6.0%
Demo Gypsum Scrap	2.1%	0.0%	4.8%
Fiberglass Insulation	0.5%	0.0%	1.1%
Rock/Concrete/Bricks	3.6%	1.4%	5.9%
Asphalt Shingles	2.2%	0.0%	4.8%
Other Asphaltic Roofing	1.7%	0.0%	4.2%
Ceramics	2.3%	0.6%	4.0%
Other Construction	12.1%	8.1%	16.0%
Appliances & Electronics	**4.5%**		
Furniture	1.4%	0.0%	3.7%
Mattresses	2.6%	0.0%	6.9%
Small Appliances	0.0%	0.0%	0.1%
Audio/Visual Equipment	0.4%	0.0%	1.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**1.8%**		
Latex Paint	0.6%	0.0%	1.1%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.8%	0.0%	2.0%
Oil-based Paint/Thinners	0.1%	0.0%	0.3%
Caustic Cleaners	0.1%	0.0%	0.1%
Pesticides/Herbicides	0.2%	0.0%	0.5%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.1%
Motor Oil/Diesel Oil	0.1%	0.0%	0.2%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.0%	0.0%	0.0%
Other Potentially Harmful Waste	0.0%	0.0%	0.0%
Fines & Misc Materials	**0.5%**		
Sand/Soil/Dirt	0.4%	0.0%	1.1%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.0%	0.0%	0.1%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**51**		

Table 6-26. Composition by Weight: Self-haul Non-Residential at SRDS
(January – December 2008)

Calculated at a 90% confidence level

	Mean	Low	High
Paper	**7.0%**		
Newspaper	0.1%	0.0%	0.1%
Plain OCC/Kraft	2.6%	1.1%	4.1%
Waxed OCC/Kraft	1.2%	0.0%	3.1%
High Grade	0.1%	0.0%	0.2%
Mixed Low Grade	1.6%	0.5%	2.7%
Compostable/Soiled	0.4%	0.0%	0.8%
Single-use Food Service	0.1%	0.0%	0.2%
Mixed/Other Paper	0.9%	0.4%	1.4%
Plastic	**8.6%**		
#1 PET Bottles	0.1%	0.0%	0.1%
#2 HDPE Natural Bottles	0.0%	0.0%	0.1%
#2 HDPE Colored Bottles	0.0%	0.0%	0.1%
Other Bottles	0.0%	0.0%	0.0%
Tubs	0.1%	0.0%	0.2%
Expanded Poly. Nonfood	0.4%	0.1%	0.8%
Expanded Poly. Food grade	0.0%	0.0%	0.1%
Single-use Food Service	0.1%	0.0%	0.2%
Other Rigid Packaging	0.2%	0.1%	0.4%
Store/Dry Cleaning Bags	0.0%	0.0%	0.0%
Clean PE Film	0.2%	0.0%	0.4%
Other Film	0.5%	0.2%	0.9%
Durable Plastic Products	4.6%	2.4%	6.9%
Plastic/Other Materials	2.3%	0.9%	3.7%
Glass	**2.1%**		
Clear Bottles	0.3%	0.0%	0.8%
Green Bottles	0.2%	0.0%	0.6%
Brown Bottles	0.7%	0.0%	1.7%
Container Glass	0.0%	0.0%	0.0%
Fluorescent Tubes	0.0%	0.0%	0.0%
Flat Glass	0.1%	0.0%	0.4%
Other Glass	0.7%	0.1%	1.3%
Metal	**7.1%**		
Alum. Beverage Cans	0.0%	0.0%	0.0%
Alum. Foil/Containers	0.0%	0.0%	0.0%
Other Aluminum	0.0%	0.0%	0.1%
Other Nonferrous	0.0%	0.0%	0.0%
Tin Food Cans	0.1%	0.0%	0.2%
Empty Aerosol Cans	0.0%	0.0%	0.0%
Other Ferrous	2.2%	1.1%	3.3%
Oil filters	0.0%	0.0%	0.0%
Mixed Metals/Material	4.7%	1.3%	8.1%
Organics	**11.2%**		
Leaves and Grass	0.7%	0.1%	1.2%
Prunings	0.0%	0.0%	0.0%
Food	2.5%	0.9%	4.0%
Textiles/Clothing	2.1%	0.6%	3.7%
Mixed Textiles	0.8%	0.1%	1.4%
Carpet	3.3%	0.5%	6.2%
Disposable Diapers	0.0%	0.0%	0.1%
Animal By-products	0.5%	0.0%	1.2%
Rubber Products	1.3%	0.0%	2.8%
Tires	0.0%	0.0%	0.0%

	Mean	Low	High
CDL Wastes	**54.3%**		
Clean Dimension Lumber	7.1%	3.9%	10.2%
Clean Engineered Wood	6.1%	3.1%	9.1%
Pallets	1.3%	0.3%	2.2%
Crates	0.0%	0.0%	0.0%
Other Untreated Wood	0.3%	0.0%	0.9%
New Painted Wood	9.6%	6.2%	13.0%
Old Painted Wood	1.4%	0.0%	2.7%
Creosote-treated Wood	0.0%	0.0%	0.0%
Other Treated Wood	2.9%	0.1%	5.6%
Contaminated Wood	5.0%	2.5%	7.5%
New Gypsum Scrap	1.8%	0.2%	3.4%
Demo Gypsum Scrap	2.2%	0.6%	3.8%
Fiberglass Insulation	0.0%	0.0%	0.0%
Rock/Concrete/Bricks	5.2%	0.7%	9.6%
Asphalt Shingles	0.1%	0.0%	0.3%
Other Asphaltic Roofing	0.0%	0.0%	0.1%
Ceramics	0.9%	0.0%	2.0%
Other Construction	10.4%	4.7%	16.0%
Appliances & Electronics	**5.9%**		
Furniture	5.0%	1.6%	8.4%
Mattresses	0.4%	0.0%	1.0%
Small Appliances	0.0%	0.0%	0.0%
Audio/Visual Equipment	0.5%	0.0%	1.0%
CRT Monitors	0.0%	0.0%	0.0%
CRT Televisions	0.0%	0.0%	0.0%
Other Computer Equipment	0.0%	0.0%	0.0%
Potentially Harmful Waste	**0.9%**		
Latex Paint	0.2%	0.0%	0.3%
Solvent-based Adhesives	0.0%	0.0%	0.0%
Water-based Adhesives	0.0%	0.0%	0.0%
Oil-based Paint/Thinners	0.0%	0.0%	0.0%
Caustic Cleaners	0.4%	0.0%	1.0%
Pesticides/Herbicides	0.1%	0.0%	0.3%
Dry-cell Batteries	0.0%	0.0%	0.0%
Wet-cell Batteries	0.0%	0.0%	0.0%
Gasoline/Kerosene	0.0%	0.0%	0.0%
Motor Oil/Diesel Oil	0.0%	0.0%	0.0%
Asbestos	0.0%	0.0%	0.0%
Explosives	0.0%	0.0%	0.0%
Medical Wastes	0.0%	0.0%	0.0%
Other Chemicals	0.1%	0.0%	0.4%
Other Potentially Harmful Waste	0.0%	0.0%	0.1%
Fines & Misc Materials	**2.8%**		
Sand/Soil/Dirt	2.0%	0.0%	4.5%
Non-distinct Fines	0.0%	0.0%	0.0%
Misc. Organics	0.8%	0.0%	1.6%
Misc. Inorganics	0.0%	0.0%	0.0%
Total Percent	**100%**		
Sample Count	**49**		

Appendix A: Waste Component Categories

Waste samples were sorted by hand into 92 waste components, which are grouped into nine broad categories. The waste categories in the 2008 study were based on those used in Seattle's 2006 residential waste study. However, all categories were re-examined in 2008 in the context of current recycling markets and new materials being disposed. Refer to Table A-1 for additional details regarding the changes in components and categories.

Medical wastes were excluded from sorting; virtually everything else was sorted, weighed, and recorded. A list of component categories and definitions follows.

Paper

NEWSPAPER: Printed ground wood newsprint. Includes advertising "slicks" (glossy paper), if found mixed with newspaper; otherwise, ad slicks are included with mixed low grade.

PLAIN OCC/KRAFT PAPER: Old unwaxed/uncoated corrugated container boxes and Kraft paper and brown paper bags.

WAXED OCC/KRAFT PAPER: Old waxed/coated corrugated container boxes and Kraft paper, and brown paper bags.

HIGH-GRADE PAPER: White and lightly colored bond, rag, or stationary grade paper. This includes white or lightly colored sulfite/sulfate bond, copy papers, notebook paper, envelopes, continuous-feed sulfite/sulfate computer printouts and forms of all types, excluding carbonless paper.

MIXED LOW-GRADE PAPER: Mixed paper acceptable in Seattle's residential curbside program. This includes junk mail; magazines; colored papers; bleached Kraft; boxboard; mailing tubes; carbonless copy paper; ground wood computer printouts; paperback books; telephone directories; polycoated milk, ice cream, and aseptic juice containers, including those with plastic spouts attached; and frozen/refrigerator packaging. Excludes juice concentrate cans.

COMPOSTABLE/SOILED PAPER: Paper towels, waxed paper, tissues, and other papers that were soiled with food during use (e.g., pizza box inserts).

SINGLE-USE FOOD SERVICE PAPER: Paper plates, bowls, and cups, including wax-coated or plastic-coated paper plates, bowls, and cups.

MIXED/OTHER PAPER: Predominantly paper with other materials attached (e.g. orange juice cans and spiral notebooks), and other non-recyclable papers such as carbon copy paper, hardcover books, and photographs.

Plastic

PET BOTTLES: Blow-molded polyethylene terephthalate (#1) bottles and jars, excluding toxic product containers.

HDPE NATURAL BOTTLES: Blow-molded high-density translucent polyethylene (#2) bottles and jars, excluding toxic product containers. Examples include milk, juice, beverage, oil, vinegar, and distilled water.

HDPE COLORED BOTTLES: Blow-molded high-density colored polyethylene (#2) bottles and jars, excluding toxic product containers. Examples include liquid detergent bottles and some hair care bottles.

OTHER PLASTIC BOTTLES: Blow-molded #3-#7 plastic bottles and jars and unknown bottles, excluding toxic product containers.

TUBS: #1-#7 tubs such as yogurt, cottage cheese, prescription vials, and margarine, excluding toxic product containers.

EXPANDED POLYSTYRENE NON-FOOD GRADE: Includes non-food packaging and finished products made of expanded polystyrene. Excludes Styrofoam products such as cups, plates, and bowls.

EXPANDED FOOD-GRADE POLYSTYRENE: "Styrofoam" products used to contain food such as "clamshells," cups, plates, and bowls.

SINGLE-USE FOOD SERVICE PLASTICS: Includes forks and spoons, clamshells, cups, cup lids, and salad trays. Excludes clamshells, cups, plates, bowls, and other food service items made of Styrofoam.

OTHER RIGID PACKAGING: #1-#7 and unmarked rigid plastic packaging (excluding expanded polystyrene -- Styrofoam), such as cookie tray inserts, plastic spools, plastic frozen food trays, plastic toothpaste tubes, and disposable plant pots. Also includes toxic product containers, such as for motor oil or antifreeze.

CLEAN SHOPPING/DRY CLEANER BAGS: Labeled grocery and merchandise, dry cleaner, and newspaper polyethylene film bags that were not contaminated with food, liquid, or grit during use.

OTHER CLEAN POLYETHYLENE FILM: Polyethylene film and bags, other than those identified above, which were not contaminated with food, liquid, or grit during use. Includes clean plastic sheeting, clean trash bags, mattress packaging, shrink wrap.

OTHER FILM: Film packaging not defined above, or film packaging that was contaminated with food, liquid, or grit during use; is woven together (e.g., grain bags); or that contains multiple layers of film or other materials that have been fused together (e.g., potato chip bags). This category also includes contaminated plastic sheeting, photographic negatives, shower curtains, any bags used to contain food or liquid (e.g., produce), contaminated trash bags, used garbage bags, and shopping bags used as garbage bags.

DURABLE PLASTIC PRODUCTS: Finished plastic products made entirely of plastic such as toys, toothbrushes, vinyl hose, plastic lawn furniture, foam mattresses, and foam carpet padding. Includes fiberglass resin products and materials as well as durable plastic pots.

PLASTIC/OTHER MATERIALS: Items that are predominately plastic with other materials attached such as disposable razors, pens, lighters, toys, and 3-ring binders.

Glass

CLEAR BEVERAGE: Bottles that are clear in color, including pop, liquor, wine, juice, beer, and vinegar bottles.

GREEN BEVERAGE: Bottles that are green in color, including green pop, liquor, wine, beer, and lemon juice bottles.

BROWN BEVERAGE: Bottles that are brown in color, including brown pop, beer, liquor, juice, and extract bottles.

CONTAINER GLASS: Glass containers of all colors that hold solid materials such as mayonnaise, non-dairy creamer, and facial cream.

FLUORESCENT TUBES: Fluorescent light tubes and compact fluorescent bulbs (CFL).

FLAT GLASS: Clear or tinted glass that is flat. Examples include glass window panes, doors and table tops, flat automotive window glass (side windows), safety glass, and architectural glass. Excludes windshields, laminated glass, or any curved glass.

OTHER GLASS: Mirrors, windshields, light bulbs (except fluorescent tubes), glassware, and blue glass bottles.

Metal

ALUMINUM CANS: Aluminum beverage cans (UBC) and bi-metal cans made mostly of aluminum.

ALUMINUM FOIL/CONTAINERS: Aluminum food containers, trays, and foil.

OTHER ALUMINUM: Aluminum products and scrap such as window frames and cookware.

OTHER NONFERROUS: Metals not derived from iron, to which a magnet will not adhere, and which are not significantly contaminated with other metals or materials.

TIN FOOD CANS: Tinned steel food containers, including bi-metal cans made mostly of steel.

EMPTY AEROSOL CANS: Empty, mixed material/metal aerosol cans. (Aerosols that still contain product are sorted according to that material—for instance, solvent-based paint.)

OTHER FERROUS: Ferrous and alloyed ferrous scrap metals to which a magnet adheres and which are not significantly contaminated with other metals or materials.

OIL FILTERS: Metal oil filters used in cars and other automobiles.

MIXED METALS/MATERIALS: Items that are predominately metal with other materials attached such as motors, insulated wire, and finished products containing a mixture of metals, or metals

and other materials. White goods are banned from Seattle's disposal. However, segments of large appliances are occasionally found; they are included in this category.

Organic

LEAVES AND GRASS: Non-woody plant materials from a yard or garden area, including grass clippings, leaves, weeds, and garden wastes.

PRUNINGS: Cut prunings, 6" or less in diameter, from bushes, shrubs, and trees.

FOOD: Food wastes and scraps, including bone, rinds, etc. Excludes the weight of food containers, except when container weight is not appreciable compared to the food inside. Biodegradable packaging peanuts (made from corn starch) are also included in this category.

TEXTILES: Rag stock fabric materials including natural and synthetic textiles such as cotton, wool, silk, woven nylon, rayon, and polyester.

MIXED TEXTILES: Non-rag stock grade textiles such as upholstered items, non-leather shoes and handbags, heavy linens, and draperies.

CARPET: General category of flooring applications and non-rag stock textiles consisting of various natural or synthetic fibers bonded to some type of backing material. Also includes felt fabric carpet padding.

DISPOSABLE DIAPERS: Diapers made from a combination of synthetic and/or natural fibers, made for single use. This includes disposable baby diapers and adult protective undergarments.

ANIMAL BY-PRODUCTS: Animal carcasses not resulting from food storage or preparation, animal wastes, and kitty litter.

RUBBER PRODUCTS: Finished products and scrap materials made of natural and synthetic rubber, such as bath mats, inner tubes, rubber hoses, rubber carpet padding, and foam rubber.

TIRES: Vehicle tires of all types. Tubes are put into the rubber category.

Furniture, Appliances, and Electronics

FURNITURE: Mixed-material furniture such as upholstered chairs. Furniture that is made purely of one material, such as plastic or metal, would be categorized according to that material (e.g., plastic products or other ferrous metal).

MATTRESSES: Mattresses and box springs.

SMALL APPLIANCES: Small electric appliances such as toasters, microwave ovens, power tools, curling irons, and light fixtures.

AUDIO/VISUAL EQUIPMENT: Examples include stereos, radios, tape decks, VCRs, and cell phones.

COMPUTER MONITORS: Computer monitors containing a cathode ray tube (CRT).

TELEVISIONS: Television sets containing a cathode ray tube (CRT).

OTHER COMPUTER EQUIPMENT: Computer items not containing CRTs such as processors, mice and mouse pads, keyboards, disk drives, and laptops.

Construction Debris

CLEAN DIMENSION LUMBER: Milled lumber commonly used in construction for framing and related uses, including 2 x 4's and 2 x 6's, that is clean (only including trace amounts of paint, nails, and other contaminants). Includes lumber with painted ends.

CLEAN ENGINEERED WOOD: Sheets of plywood, strandboard, particleboard, and other wood that are created using glue and that are clean (only including trace amounts of paint, nails, and other contaminants).

PALLETS: Untreated wood pallets, whole and broken.

CRATES: Untreated crates, pieces of crates, and other packaging lumber/panelboard.

OTHER UNTREATED WOOD: Compostable prunings or stumps 6" or greater in diameter.

NEW PAINTED WOOD: Lumber and wood products from new construction that have been painted, so as to render them difficult to compost.

OLD PAINTED WOOD: Painted wood from demolition jobs. May be flaky and oxidized. Includes lead-based painted wood.

CREOSOTE-TREATED WOOD: Lumber and wood products that have been treated with creosote so as to render them difficult to compost (with generally 50% or more of the surface area treated).

OTHER TREATED WOOD: Lumber and wood products that have been treated (other than painted or treated with creosote) so as to render them difficult to compost. This includes chemically treated lumber.

CONTAMINATED WOOD: Predominantly wood and lumber products that are mixed with other materials in such a way that they cannot easily be separated. This includes wood with metal, gypsum, concrete, or other contaminants that would not compost easily.

NEW GYPSUM SCRAP: Calcium sulfate dehydrate sandwiched between heavy layers of Kraft-type paper. Also known as drywall. This category includes new drywall that has not been painted or treated in other ways. Excludes GP DensGlass (and other brands) of exterior or roof paneling which is gypsum sandwiched between a fiberglass-reinforced coating.

DEMO GYPSUM SCRAP: Used or demolition gypsum wallboard scrap that has been painted or treated.

FIBERGLASS INSULATION: Fiberglass building and mechanical insulation, batt or rigid.

ROCK/CONCRETE/BRICKS: Rock gravel larger than 2" diameter, Portland cement mixtures (set or unset), and fired-clay bricks.

ASPHALT SHINGLES: Roofing material composed of fiberglass or organic felts saturated with asphalt and covered with inert aggregates, as well as attached roofing tar and tar paper. This component includes materials commonly known as three-tab roofing shingles and older designs as well.

OTHER ASPHALTIC ROOFING: Other roofing material made with layers of felt, asphalt, aggregates, and attached roofing tar and tar paper normally used on flat/low pitched roofs, usually on commercial buildings. Includes torch-down and hot-tar roofs.

CERAMICS: Finished ceramic or porcelain products such as toilets, sinks, and some dishware.

OTHER CONSTRUCTION DEBRIS: Construction debris (other than wood) that cannot be classified elsewhere and mixed fine building material scraps. Examples include floor sweepings from construction activities containing sawdust, nails, wire, etc. Includes GP DensGlass (and other brands) of exterior or roof paneling which is gypsum sandwiched between a fiberglass-reinforced coating.

Potentially Harmful Waste

LATEX PAINTS: Water-based paints and similar products.

SOLVENT-BASED ADHESIVES/GLUES: Oil/resin/volatile solvent-based glues and adhesives, including epoxy, rubber cement, two-part glues and sealers, and auto body fillers.

WATER-BASED ADHESIVES/GLUES: Water-based glues, caulking compounds, grouts, and Spackle.

OIL-BASED PAINT/SOLVENT: Solvent-based paints, varnishes, and similar products. Various solvents, including chlorinated and flammable solvents, paint strippers, solvents contaminated with other products such as paints, degreasers and some other cleaners if the primary ingredient is (or was) a solvent, or alcohol such as methanol and isopropanol.

CAUSTIC CLEANERS: Caustic acids and bases whose primary purpose is to clean surfaces, unclog drains, or perform other actions.

PESTICIDES/HERBICIDES: Variety of poisons with the purpose of discouraging or killing insects, weeds, or microorganisms. Fungicides and wood preservatives, such as pentachlorophenol, are also included.

DRY-CELL BATTERIES: Dry-cell batteries of various sizes and types as commonly used in households. Includes cell phone and button cell batteries.

WET-CELL BATTERIES: Wet-cell batteries of various sizes and types as commonly used in automobiles.

GASOLINE/KEROSENE: Gasoline, diesel fuel, and fuel oils.

MOTOR OIL/DIESEL OIL: Lubricating oils, primarily used in vehicles but including other types with similar characteristics.

ASBESTOS: Asbestos and asbestos-containing wastes (if this is the primary hazard associated with these wastes).

EXPLOSIVES: Gunpowder, unspent ammunition, picric acid, and other potentially explosive chemicals.

MEDICAL WASTES: Materials typically discarded in a health care setting such as I.V. tubing and patient drapes, specimen containers, and Petri dishes. Medical wastes that could be considered a biohazard are weighed, but not further sorted.

OTHER CLEANERS/CHEMICALS: Soaps, non-caustic cleaners, medicines, cosmetics, and other household chemicals.

OTHER POTENTIALLY HARMFUL WASTES: Other chemicals or potentially harmful wastes that do not fit into the above categories, including unidentifiable materials.

Fines and Miscellaneous Materials

SAND/SOIL/DIRT: Sand, soil, dirt, and gravel smaller than 2" in diameter.

NONDISTINCT FINES: Mixed MSW fines smaller than 2” in diameter.

MISCELLANEOUS ORGANICS: Combustible materials including wax; bar soap; cigarette butts; scraps of leather and leather products including shoes and belts; feminine hygiene products; briquettes; fireplace, burn barrel and fire pit ash; and other organic materials not classified elsewhere.

MISCELLANEOUS INORGANICS: Other inorganic, non-combustible materials not classified elsewhere.

Changes to Waste Component Categories

The material types used to categorize Seattle’s waste stream have been refined over the years. Table A-1 tracks these changes. (An “X” signifies that the component remains the same from the previous study period; an outline border reflects how components were split apart or grouped together.

Table A-1 Changes to Waste Component Categories, 1988 to present

1988-89	1990	1992	1994	1996	1998/99	2000	2002	2004	2006	2008
PAPER										
Newspaper	x	x	x	x	x	x	x	x	x	x
Corrugated Paper	x	x	OCC/Kraft	OCC/Kraft, Unwaxed	x	x	x	x	x	x
Office Paper	x	x	x	x	x	x	x	High Grade Paper	x	x
Computer Paper	x	x	x	x	x	x	x			
Mixed Scrap Paper	x	x	Mixed Low Grade	x	x	x	x	Mixed Low Grade	Mixed Low-Grade	x
			Phone Books	x	x	x	x			
Other Paper	x	x	Milk/Juice Polycoats	x	x	x	x	Polycoated Paper		
			Frozen Food Polycoats	x	x	x	x			
			Compostable/Soiled	Compostable/Soiled	x	x	x	x	x	x
				OCC/Kraft, Waxed	x	x	x	x	x	x
			Paper/Other Materials	x	x	x	x	Mixed/Other Paper	x	x
			Other Paper	x	x	x	x			
PLASTIC										
PET Bottles	x	x	PET Pop & Liquor	x	x	x	x	#1 PET Bottles	#1 PET Bottles	x
			Other PET Bottles	x	x	x	x	*Moved to component "Other plastic bottles"*		
HDPE Bottles	x	x	HDPE Milk & Juice	x	x	x	x	#2 HDPE Natural Bottles	x	x
								#2 HDPE Colored Bottles	x	x
			Other HDPE Bottles	x	x	x	x	*Moved to component "Other plastic bottles"*	*Moved to component "Other rigid packaging"*	*x*
Plastic Packaging	Other Plastic Bottles	x	x	x	x	x	x	x	x	x
	x	x	Other Rigid Containers	Jars & Tubs	x	x	x	x	x	
			Other Rigid Packaging	x	x	x	x	x	x	x
										Single-use Food Service
			Grocery/Bread Bags	x	x	x	x	Clean Shopping/Dry Cleaner Bags	x	x
			Other Film	Garbage Bags	x	x	x	Other Film	x	x
				x	x	x	x			
								Other Clean PE Film	x	x
Expanded Polystyrene	x	x	x	x	x	x	x	x	x	x
										Expanded Poly. Food-grade
Other Plastic Products	x	x	Plastic Products	x	x	x	x	x	x	x
			Plastic/Other Materials	x	x	x	x	x	x	x
GLASS										
Nonrefillable Pop	x	x	Clear Beverage	x	x	x	x	x	x	x
Refillable Pop	x	x	Green Beverage	x	x	x	x	x	x	x
Nonrefillable Beer	x	x	Brown Beverage	x	x	x	x	x	x	x
Refillable Beer	x	x	*(After 1994, characterized according to color)*							
Container Glass	x	x	x	x	x	x	x	x	x	x
Nonrecyclable Glass	x	x	x	Fluorescent Tubes	x	x	x	x	x	x
				Other Glass	Other Glass	Other Glass	Other Glass	Other Glass	Other Glass	Flat Glass
										x

Table A-1 Changes to Waste Component Categories, 1988 to present (continued)

1988-89	1990	1992	1994	1996	1998/99	2000	2002	2004	2006	2008
METAL										
Aluminum Cans	x	x	x	x	x	x	x	x	x	x
Aluminum Foil/Containers	x	x	x	x	x	x	x	x	x	x
Nonferrous	x	x	x	Other Nonferrous	x	x	x	x	x	x
			Other Aluminum	x	x	x	x	x	x	x
				Empty Aerosol Cans	x	x	x	x	x	x
Tinned Cans	x	x	x	x	x	x	x	x	x	x
Bi-metal Cans	x	x	*(After 1994, characterized according to predominant metal)*							
Ferrous	x	x	x	x	x	x	x	x	x	x
Mixed Metals/Materials	x	x	x	x	x	x	x	x	x	x
(Before 1998/99, was not charcterized)					Metal Oil Filters	x	x	x	x	x
White Goods	x	x	*(After 1994, banned from disposal. Parts show up in "Mixed Metals")*							
ORGANICS (including rubber)										
Leaves and Grass	x	x	x	x	x	x	x	x	x	x
Prunings	x	x	x	x	x	x	x	x	x	x
Food	x	x	x	x	x	x	x	x	x	x
Textiles	x	x	x	Textiles/Clothing	x	x	x	*Moved to "Organics"*	Textiles	x
			Carpet/Upholstery	x	x	x	x		Mixed Textiles	x
									Carpet	x
Disposable Diapers	x	x	x	x	x	x	x		Disposable Diapers	x
(Discarded from samples prior to 1994)			Animal By-Products	x	x	x	x		Animal By-products	x
Rubber Products	x	x	*moved to "Other Materials"*	x	x	x	x	*Moved to "Organics"*	Rubber Products	x
Tires	x	x	*moved to "Other Materials"*	x	x	x	x	*Moved to "Organics"*	Tires	x
FURNITURE, APPLIANCES, AND ELECTRONICS										
(Prior to 1994, split among various materials; Mixed Metal, Textiles, Other Plastics, etc.)			Furniture	x	x	x	x	*Moved to component "Miscellaneous Organics"*	Furniture	x
(Prior to 1994, split among various materials; Mixed Metal, Textiles, Other Plastics, etc.)			Mattresses	x	x	x	x		Mattresses	x
(Prior to 1994, split among various materials; Mixed Metal, Textiles, Other Plastics, etc.)			Small Appliances	x	x	x	x		Small Appliances	x
(Prior to 1994, split among various materials; Mixed Metal, Textiles, Other Plastics, etc.)			A/V Equipment	x	x	x	x		Audio/Visual Equipment	x
						Televisions & Computer Monitors	Television Sets		Televisions	x
							Computer Monitors		Computer Monitors	x
						Other Computer Equipment	x		Other Computer Equipment	x

Table A-1 Changes to Waste Component Categories, 1988 to present (continued)

1988-89	1990	1992	1994	1996	1998/99	2000	2002	2004	2006	2008
CONSTRUCTION DEBRIS										
Wood	x	Untreated Wood	x	Dimension Lumber; *new category "CDL Wastes"*	x	x	x	x	x	Clean Dimension Lumber Clean Engineered Wood
			Crates/Pallets	Other Untreated Wood; *new category "CDL Wastes"*	x	x	x	x	x	x
				Pallets	x	x	x	*Moved to "CDL Wastes"*	Pallets	x
				Crates/Boxes	x	x	x	*Moved to "CDL Wastes"; renamed "Crates"*	Crates/Boxes	x
		Treated Wood	x	*Moved to new category "CDL Wastes"*	*x*	*x*	*x*	*x*	*x*	New Painted Wood Old Painted Wood Creosote-treated Wood Other Treated Wood
				Contaminated Wood; *new category "CDL Wastes"*	x	x	x	x	x	x
Gypsum Drywall	x	x	x	New Gypsum Scrap; *new category CDL Wastes*	x	x	x	x	x	x
				Demo Gypsum Scrap; *new category CDL Wastes*	x	x	x	x	x	x
Fiberglass Insulation	x	x	x	*Moved to new category CDL Wastes*	*x*	*x*	*x*	*x*	x	x
Rock/Concrete/Brick	x	x	x	*Moved to new category CDL Wastes*	*x*	*x*	*x*	*x*	x	x
Other Construction Debris	x	x	x	Asphaltic Roofing; *new category CDL Wastes*	x	x	x	x	x	Asphalt Shingles Other Asphaltic Roofing
				Moved to new category CDL Wastes	x	x	x	x	x	
Ceramics, Porcelain, China	x	x	x	x	x	x	x	*Moved to "CDL Wastes"; renamed "Ceramics"*	Ceramics	x

Table A-1 Changes to Waste Component Categories, 1988 to present (continued)

1988-89	1990	1992	1994	1996	1998/99	2000	2002	2004	2006	2008
HOUSEHOLD HAZARDOUS										
Latex Paints	x	x	x	x	x	x	x	x	x	x
Adhesives/Glues	x	x	x	Hazardous Glue/Adhesives	x	x	x	Renamed "Solvent-based Adhesives/Glues"	x	x
				NonHazardous Glue/Adhesives	x	x	x	Renamed "Water-based Adhesives/Glues"	x	x
Oil-based Paints/Solvents	x	x	x	x	x	x	x	x	x	x
Cleaners	x	x	x	x	x	x	x	Renamed "Caustic Cleaners"	x	x
Pesticides & Herbicides	x	x	x	x	x	x	x	x	x	x
Batteries	x	x	Dry-Cell Batteries	x	x	x	x	x	x	x
			Wet-Cell Batteries	x	x	x	x	x	x	x
Gasoline/Kerosene	x	x	x	x	x	x	x	x	x	x
Motor Oil/Diesel Oil	x	x	x	x	x	x	x	x	x	x
Asbestos	x	x	x	x	x	x	x	x	x	x
Explosives	x	x	x	x	x	x	x	x	x	x
Other Chemicals	x	x	x	Other Hazardous Chemicals	x	x	x	Medical Waste	x	x
								Other Potentially Harmful Wastes	x	x
				Other NonHazardous Chemicals	x	x	x	Renamed "Other Cleaners/Chemicals"	x	x
OTHER MATERIALS										
Sand, Dirt, Non-distinct Fines	x	x	Sand/Soil/Dirt	*Moved to new category CDL Wastes*	*x*	*x*	*x*	*Moved to new category "Fines & Miscellaneous Materials"*	Sand/Soil/Dirt	x
			Non-distinct Fines	x	x	x	x	*Moved to new category "Fines & Miscellaneous Materials"*	Non-distinct Fines	x
Ash	x	x	x	x	x	x	x	*Moved to component "Miscellaneous Organics"*	Miscellaneous Organics	x
Leather	x	x	x	x	x	x	x			
(Prior to 1994, mostly in "Sand, Dirt, Non-distinct Fines; also in various "Mixed" and "Other" categories)			Misc. Organics	x	*x*	*x*	*x*			
(Prior to 1994, mostly in "Sand, Dirt, Non-distinct Fines; also in various "Mixed" and "Other" categories)			Misc. Inorganics	x	*x*	*x*	*x*	*Moved to new category "Fines & Miscellaneous Materials"*	Miscellaneous Inorganic	x

Appendix B: Sampling Methodology

Overview

The objective of the 2008 Seattle Waste Composition Study was to provide statistically significant data on the composition of commercial and self-haul waste in the City of Seattle. Commercial and self-haul wastes were last sampled in 2004. The current project follows the same basic methodology as the 2004 study. However, the component categories and definitions have been revised, as discussed in Appendix A.

Substream Definition

For any specific geographic area, the total waste stream is composed of various substreams. A "substream" is determined by the particular generation, collection, or composition characteristics that make it a unique portion of the total waste stream. This study targets two of Seattle's three primary waste substreams: the commercial and self-haul substreams.[1] These are described in detail below.

Commercial Substream

The **commercial** substream comprises waste that is: a) generated at businesses and institutions; and, b) collected by contracted hauling companies. The commercial substream is composed of 12 subpopulations as shown in Figure B-1. Subpopulations are defined according to three groupings: service area (north or south), shift (day or night), and vehicle type (front loader, rear loader, or roll-off).

Figure B-1 . Commercial Subpopulations, by Service Area, Shift, and Vehicle Type

Shift	Service Area					
	North			*South*		
	Vehicle Type			Vehicle Type		
	Front loader	*Rear loader*	*Roll-off*	*Front loader*	*Rear loader*	*Roll-off*
Day	Day FL North	Day RL North	Day RO North	Day FL South	Day RL South	Day RO South
Night	Night FL North	Night RL North	Night RO North	Night FL South	Night RL South	Night RO South

Commercial waste from the north and south service areas is hauled by private hauling companies. These wastes are hauled to the two City-owned disposal stations and to the private transfer station Eastmont (Waste Management). Since this study focused on characterizing municipal solid waste (MSW) only, no samples were taken from construction, demolition, and landclearing waste (CDL) loads delivered to the Third & Lander or Eastmont facilities.

[1] The residential substream was not included in this study. For the most recent analysis of Seattle's residential waste stream, please see the *2006 Residential Waste Stream Composition Study* at http://www.seattle.gov/util/About_SPU/Garbage_System/Reports/Waste_Composition_Reports/index.asp

Self-haul Substream

The **self-haul** substream comprises waste that is a) generated at residences as well as businesses and institutions and b) hauled by the household or business that generated the waste. The self-haul substream is composed of four subpopulations as shown in Figure B-2. Subpopulations are defined according to generator type and disposal station. Generator types are defined as follows.

- *Self-haul commercial*: waste hauled to the NRDS or SRDS by a commercial enterprise (e.g., landscaper, contractor), including waste from residential dwellings.
- *Self-haul residential*: waste hauled to the NRDS or SRDS by a resident from his or her home.

All self-haul waste included in the 2008 study was disposed at one of two City-owned disposal stations: North or South Recycling and Disposal Stations (NRDS or SRDS).

Figure B-2. Self-haul Subpopulations, by Generator Type and Service Area

Disposal Station	Generator Type	
	Commercial	*Residential*
NRDS	Commercial NRDS	Residential NRDS
SRDS	Commercial SRDS	Residential SRDS

Sample Allocation

Commercial Samples

For this study, a total of 271 commercial samples were characterized. These samples were allocated to the 12 commercial subpopulations using the following steps.

1. Samples were allocated to each of the two service areas equally: 135 to the north and 135 to the south service area. Evenly dividing the number of samples provides a comparable level of precision, or similar error rates, in the resulting composition data for each of these geographic service areas. These "comparable" data permit sensitive comparisons between the two areas and provide sound composition information for future geographic-based programmatic and evaluative analyses.
2. For both the day and night shifts, samples for each service area were allocated based on the proportion of tonnage collected.[2] For example, about 85% of the total waste collected from the north service area was disposed during the day, so 85% of the samples assigned to that service area were allocated to day shifts and the remaining 15% to night shifts.

[2] Seattle Public Utilities provided 2007 commercial and self-haul tonnages used for allocating samples in the study. These tonnages were confirmed with the haulers and adjusted when needed.

3. Next, samples were allocated to specific vehicle types such as loose roll-offs and packer trucks. Again, samples were allocated based on the average tons collected in each service area and delivered by each vehicle type for each shift.

The numbers of samples allocated to the various subpopulations are detailed in Table B-1.

Table B-1. Commercial Sample Allocation

Service Area / *Shift*	Vehicle Type	# of Samples	% of Total
North			
Day	Front loader	59	22%
	Rear loader	5	2%
	Roll-off	50	19%
Night	Front loader	10	4%
	Rear loader	0	0%
	Roll-off	11	4%
South			
Day	Front loader	41	15%
	Rear loader	23	9%
	Roll-off	47	17%
Night	Front loader	14	5%
	Rear loader	0	0%
	Roll-off	10	4%
Totals		**270**	**100%**

4. On each sampling day, samples were allocated based on the quotas for each service area and shift. For example, in the north service area during the night shift, seven samples were allocated to front loaders and eight to roll-offs.

Self-haul Samples

Since the proportion of self-haul tonnage transported to the NRDS and SRDS was nearly equal (55% and 45%, respectively), half of the self-haul samples were allocated to each facility: 108 at NRDS and 108 at SRDS. This study did not stratify samples by generator type as data from the study was also used to determine the relative mix of residential and commercial loads arriving at each disposal station.

Sampling Calendar

A minimum of 270 commercial and 216 self-haul samples were targeted for sorting during the 2008 study. Due to the expense of moving the sampling crew from site to site, sorting occurred at only one facility per sampling day. Since the field crew can sort approximately 15 commercial loads and 22 self-haul loads per day, 18 days of commercial and 10 days of self-haul sampling were required to meet the study's sampling goals. In order to capture any seasonal variation, the sampling events were distributed across the 12-month study period. Sampling occurred every other month for four or five consecutive days each selected month, for a total of 31 days of sampling. Each sampling month consisted of three days of commercial sampling and one to two days of self-haul sampling.

Working around major holidays and the sorting crew's availability, sampling dates within each month were selected using a random number generator and were refined so that the distribution across weeks of the month and days of the week were roughly even. Whenever possible, the sampling dates for both the commercial and self-haul waste sorts were scheduled contiguously.

The sampling calendar is shown in Table B-2. The resulting allocation of waste sampling days for the commercial and self-haul substreams is shown in Table B-3 and Table B-4, respectively. The actual sampling schedule varied slightly from the plan. These changes were as follows:

- Sampling on April 4 and 5 instead of April 25 and 26
- No sampling on June 15
- No sampling on August 14 but an extra shift on August 13
- Sampling on October 1-5 but not on October 27 and 28
- Two extra shifts on December 11.

Table B-2. Sampling Calendar

Season	Month	Date	Day of week	Week #	Waste Stream	Shift	Site
Winter	February	2/19/2008	Tuesday	3	Self-Haul	Day	NRDS
Winter	February	2/20/2008	Wednesday	3	Commercial	Day	SRDS
Winter	February	2/21/2008	Thursday	3	Commercial	Day	NRDS
Winter	February	2/22/2008	Friday	4	Commercial	Day	NRDS
Spring	April	4/1/2008	Tuesday	1	Commercial	Day	NRDS
Spring	April	4/2/2008	Wednesday	1	Commercial	Day	SRDS
Spring	April	4/3/2008	Thursday	1	Commercial	Day	SRDS
Spring	April	4/4/2008	Friday	1	Self-Haul	Day	SRDS
Spring	April	4/5/2008	Saturday	1	Self-Haul	Day	NRDS
Summer	June	6/16/2008	Monday	3	Self-Haul	Day	NRDS
Summer	June	6/17/2008	Tuesday	3	Self-Haul	Day	SRDS
Summer	June	6/18/2008	Wednesday	3	Commercial	Day	NRDS
Summer	June	6/19/2008	Thursday	3	Self-Haul	Day	SRDS
Summer	August	8/11/2008	Monday	2	Commercial	Day	SRDS
Summer	August	8/12/2008	Tuesday	2	Commercial	Day	NRDS
Summer	August	8/13/2008	Wednesday	2	Commercial	Night	Eastmont
Summer	August	8/13/2008	Wednesday	2	Commercial	Night	Eastmont
Summer	August	8/13/2008	Wednesday	2	Self-Haul	Day	NRDS
Fall	October	10/1/2008	Wednesday	1	Commercial	Day	NRDS
Fall	October	10/2/2008	Thursday	1	Commercial	Day	SRDS
Fall	October	10/3/2008	Friday	1	Commercial	Day	SRDS
Fall	October	10/4/2008	Saturday	1	Self-Haul	Day	NRDS
Fall	October	10/5/2008	Sunday	1	Commercial	Night	Third and Lander
Winter	December	12/7/2008	Sunday	2	Self-Haul	Day	SRDS
Winter	December	12/8/2008	Monday	2	Commercial	Day	NRDS
Winter	December	12/9/2008	Tuesday	2	Commercial	Day	SRDS
Winter	December	12/10/2008	Wednesday	2	Commercial	Day	SRDS
Winter	December	12/10/2008	Wednesday	2	Commercial	Day	SRDS
Winter	December	12/11/2008	Thursday	2	Commercial	Night	Eastmont
Winter	December	12/11/2008	Thursday	2	Commercial	Day	SRDS
Winter	December	12/11/2008	Thursday	2	Self-Haul	Day	SRDS

Table B-3. Distribution of Commercial Waste Sampling Days

	Number of Waste Sampling Days: Commercial							
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**	**Overall**
	2	**3**	**8**	**5**	**2**	**0**	**1**	**21**
Winter	1	1	3	3	1	0	0	10
Week 1	0	0	0	0	0	0	0	0
Week 2	1	1	2	2	0	0	0	6
Week 3	0	0	1	1	0	0	0	2
Week 4	0	0	0	0	1	0	0	1
Week 5	0	0	0	0	0	0	0	0
Spring	0	1	1	1	0	0	0	3
Week 1	0	1	1	1	0	0	0	3
Week 2	0	0	0	0	0	0	0	0
Week 3	0	0	0	0	0	0	0	0
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0
Summer	1	1	3	0	0	0	0	4
Week 1	0	0	0	0	0	0	0	0
Week 2	1	1	2	0	0	0	0	4
Week 3	0	0	1	0	0	0	0	1
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0
Autumn	0	0	1	1	1	0	1	4
Week 1	0	0	1	1	1	0	1	4
Week 2	0	0	0	0	0	0	0	0
Week 3	0	0	0	0	0	0	0	0
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0

Table B-4. Distribution of Self-Haul Sampling Days

	Number of Waste Sampling Days: Self Haul							
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**	**Overall**
	1	**2**	**1**	**2**	**1**	**2**	**1**	**10**
Winter	0	1	0	1	0	0	1	3
Week 1	0	0	0	0	0	0	0	0
Week 2	0	0	0	1	0	0	1	2
Week 3	0	1	0	0	0	0	0	1
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0
Spring	0	0	0	0	1	1	0	2
Week 1	0	0	0	0	1	1	0	2
Week 2	0	0	0	0	0	0	0	0
Week 3	0	0	0	0	0	0	0	0
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0
Summer	1	1	1	1	0	0	0	4
Week 1	0	0	0	0	0	0	0	0
Week 2	0	0	1	0	0	0	0	1
Week 3	1	1	0	1	0	0	0	3
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0
Autumn	0	0	0	0	0	1	0	1
Week 1	0	0	0	0	0	1	0	1
Week 2	0	0	0	0	0	0	0	0
Week 3	0	0	0	0	0	0	0	0
Week 4	0	0	0	0	0	0	0	0
Week 5	0	0	0	0	0	0	0	0

Hauler and Transfer Station Participation

Commercial Sampling

The sampling schedule for the 2008 study was provided to each commercial hauler. Prior to each month's sampling event, the affected companies were sent a vehicle selection sheet. (A copy of this notice is included in Appendix F.) The haulers were then asked to notify the drivers of the loads selected for sampling and to fill in the estimated time of arrival for each load (to assist the Field Supervisor in identifying the sample truck).

This study was designed to sample "pure" loads of commercial and self-haul waste only. The hauler contracted to collect waste in the south service area operates vehicles that service both commercial customers and multi-family residences. In the north service area, trucks servicing the multi-family routes also collect waste from libraries and other city buildings. On sampling days, the hauler for the selected service area made special trips to bring in "pure" commercial loads for mixed routes selected for sampling.

Self-haul Sampling

For self-haul loads, affected staff at NRDS and SRDS were given an annual schedule and informed prior to each sampling event.

Load Selection

Commercial Loads

Typically, commercial vehicles transport more than one load per shift. Since there are more vehicles per shift than the sampling quota, it was necessary to designate which specific loads to sample. To accomplish this, an identifier was assigned to every expected load on a given sampling day. A random number generator sorted the identifiers by vehicle type; loads were then selected in that sequence until the quota for each vehicle type was filled. Selected loads for a sampling day were summarized on vehicle selection sheets (copies of these sheets can be found in Appendix F).

Self-haul Loads

Self-haul loads were systematically selected at each facility. Systematic selection consists of taking every "nth" vehicle that enters the facility after a randomly selected start time. The sampling intervals (*n*) were determined by dividing the day's expected number of arriving vehicles by the number of samples needed on that day. This method of selecting vehicles provided a representative number of samples for the commercial and residential generators of self-haul waste. The expected traffic count was based on either the average weekday or weekend vehicle count from the same month in 2007.

Field Procedures

Upon arrival at the sampling facility, the Field Manager worked out the details of truck diversion, sample extraction, sorting, and disposal of sorted waste with each transfer station manager. When a vehicle selected for sampling arrived, the Field Supervisor obtained the origin of the load including information on the truck and route from commercial drivers and information on the generator and residence type from self-haulers. Both commercial and self-haul drivers were asked to identify from which type of business the sample load was from. Table B-5 lists the corresponding Standard Industry Codes (SIC) for loads from businesses. Information collected

from each driver was recorded on the load's corresponding tally sheet (see Appendix F for a copy of this sheet).

Table B-5. SIC Codes, by Business Type

Business Type	SIC Codes
Construction, Demolition, and Landclearing	15-17
Education	82
Health Care	80
Hotel/Motel	70
Manufacturing	20, 22-26, 28-36, 38-39, 372, 373, 376
Office	01-02, 08-09, 10, 14, 27, 48, 49, 60-67, 73, 81
Other Non-residential	- -
Other Services	7, 55, 72, 75, 76, 78-79, 84, 86, 89
Restaurant	58
Retail	52-54, 56-57, 59
Transportation	40-47, 371, 374, 375, 379
Wholesale	50, 51
Mixed Commercial Generators	- -

Commercial Samples

For the commercial samples, the entire truckload of waste was dumped onto the tipping floor at the transfer station. Whenever possible, an imaginary 8-section, 2-layer grid (16 cells total) was superimposed on the load, and a randomly selected cell was identified for sampling. From that cell, the loader extracted approximately 250 pounds of waste and dumped it onto a tarpaulin for sorting.

In order to meet the sampling goals, as outlined in Table B-1, it was sometimes necessary to capture two samples from the same load. These samples were extracted from two randomly selected cells identified for sampling. Double load sampling occurred on a limited basis only when the number of vehicles was less than that day's sampling goal.

Self-haul Samples

Samples from large (greater than 250 pounds) self-haul loads were either sorted in their entirety or a slice was selected in much the same manner as for commercially collected loads. If the load was less than 250 pounds then the next vehicle of the same generator group (residential or commercial) was also selected. A sample was also captured from this subsequent vehicle so that the weight of the two samples together equaled at least 250 pounds.

To obtain net weights, the Field Supervisor gave the drivers of non-passenger vehicles a net weight card so that the scale attendant could record the weight. For passenger vehicles, which are not weighed, if the full load was sorted, the total weight of the sample is equal to the weight of the load. Otherwise, the Field Supervisor estimated the percentage of the load that was sorted to estimate the weight of the entire load.

Hand Sorting

Each sample was sorted by hand into the defined component categories (please see Appendix A for component definitions). For example, food containers were separated from the food and classified according to the containers' material. Each sample was sorted to the greatest reasonable detail. Rarely, a *supermix* of material (a residue composed of mixed material, each piece smaller than one-half inch) remained after sorting a sample. In these cases, the Field Supervisor weighed the combined *supermix* (never totaling more than 10 pounds) and visually

estimated the percentage of each component material in the *supermix*. The weights of all materials were recorded on tally sheets (copies in Appendix F).

Appendix C: Comments on Monthly Sampling Events

For the 2008 study, sampling occurred every other month for four or five consecutive days each selected month, for a total of 31 days of sampling. Each sampling month consisted of three days of commercial sampling and one to two days of self-haul sampling. This appendix summarizes sampling activities for each selected month.

February 2008

Sampling began in February for the commercial and self-haul waste study. Sampling took place from Tuesday, February 19th through Friday, February 22nd.

On Tuesday, February 22nd, self-haul vehicles were sampled at NRDS. As planned, 22 vehicles were sampled.

Commercial sampling took place on Wednesday at SRDS of Waste Management loads and Thursday and Friday at NRDS for Allied loads. Fifteen samples, the daily goal for commercial sampling, were completed each day.

April

April's sampling of commercial and self-haul waste took place from Tuesday, April 1st through Saturday, April 5th.

Commercial sampling took place on Tuesday, Wednesday, and Thursday of that week. Waste Management loads were sampled on Tuesday and Wednesday, and Allied trucks were sampled on Thursday. As planned, 15 vehicles were sampled each day.

On Friday at SRDS and Saturday at NRDS, self-haul vehicles were sampled. The target of 22 samples was reached on both days.

June

June's sampling of commercial and self-haul waste took place from Monday, June 16th through Thursday, June 19th.

On Monday at NRDS, Tuesday at SRDS, and Thursday at SRDS, self-haul vehicles were sampled. The target of 22 samples was reached on all three days.

Commercial sampling took place on Wednesday of that week. As planned, 15 vehicles were sampled that day. As you are aware, the schedule called for commercial sampling on Sunday during the day and on Thursday evening. We were not able to sample on Sunday because the only loads that day were evening loads that went to 3rd & Lander, and the facility staff was not able to have a sampling event at that time. The Thursday night sampling was cancelled due to a concern at Eastmont that there is not enough room for the sampling crew to be on site during the evening.

August

August's sampling of commercial and self-haul waste took place from Monday, August 11th through Wednesday, August 13th.

Commercial sampling took place that week during the day on Monday and Tuesday and on Wednesday at night. We were short two samples on Monday and one sample on Tuesday. These samples were made up during the night sampling at Eastmont. This event was the first of the study where night loads were sampled at Eastmont.

Self-haul sampling took place on Wednesday at NRDS. The target of 22 samples was reached on that day.

October

Sampling took place in October from Wednesday, October 1st through Sunday, October 5th.

Commercial sampling took place that week during the day on Wednesday through Friday and on Sunday at night. We were short four samples on Wednesday and one sample on Friday. On Wednesday, we believe the sampling shortage was partly due to our crew arriving slightly late due to bad weather. Additionally, at least one load was buried when the loader operator was not available to capture a sample. This event was the first of the study where night loads were sampled at 3rd & Lander.

Self-haul sampling took place on Saturday at NRDS. The target of 22 samples was reached on that day.

December

Sampling took place in from Sunday, December 7th through Thursday, December 11th.

We sampled commercial waste during the day on Monday, Tuesday, and Wednesday and during the night shift on Thursday. We met our sampling goals on every day and captured a total of four additional samples on Monday, Tuesday, and Thursday night. Two commercial samples were captured and sorted during the self-haul event on Thursday as well. We sorted the additional samples to make up for previous shortages and meet the overall study sampling goals.

We sampled self-haul waste on Sunday and Thursday at SRDS. The target of 22 samples was reached on Sunday. We sorted only 20 samples on Thursday because that was the number required to meet the goal for the year.

Appendix D: Waste Composition Calculations

Composition Calculations

The composition estimates represent the **ratio of the components' weight to the total waste** for each noted substream. They are derived by summing each component's weight across all of the selected records and dividing by the sum of the total weight of waste, as shown in the following equation:

$$r_j = \frac{\sum_i c_{ij}}{\sum_i w_i}$$

where:

c = weight of particular component

w = sum of all component weights

for i 1 to n

where n = number of selected samples

for j 1 to m

where m = number of components

The confidence interval for this estimate is derived in two steps. First, the variance around the estimate is calculated, accounting for the fact that the ratio includes two random variables (the component and total sample weights). The **variance of the ratio estimator** equation follows:

$$\hat{V}_{r_j} = \left(\frac{1}{n}\right) \cdot \left(\frac{1}{\overline{w}^2}\right) \cdot \left(\frac{\sum_i \left(c_{ij} - r_j w_i\right)^2}{n-1}\right)$$

where:

$$\overline{w} = \frac{\sum_i w_i}{n}$$

Second, **precision levels** at the 90% confidence interval are calculated for a component's mean as follows:

$$r_j \pm \left(t \cdot \sqrt{\hat{V}_{r_j}}\right)$$

where:

t = the value of the t-statistic (1.645) corresponding to a 90% confidence level

For more detail, please refer to Chapter 6 "Ratio, Regression and Difference Estimation" of *Elementary Survey Sampling* by R.L. Scheaffer, W. Mendenhall and L. Ott (PWS Publishers, 1986).

Weighted Averages

The overall commercial and overall self-haul waste composition estimates were calculated by performing a weighted average across the relevant substreams. For the commercial substream, the overall estimate was calculated by performing a weighted average based on the tonnage carried by each hauler, vehicle type, and shift. For the self-haul substream, the overall estimate was calculated by performing a weighted average based on the tonnage hauled each season to each site, by vehicle type.

Seattle provided the estimate of tonnage disposed by the commercial and self-haul substreams for the study period (January thru December 2008). In addition, the two authorized commercial haulers provided the tonnage split for waste hauled by compactor and loose roll-off vehicles for the day and night shifts. The composition estimates for each substream and subpopulation were applied to the relevant tonnages to estimate the amount of waste disposed for each component category.

The **weighted average for an overall composition estimate** is performed as follows:

$$O_j = \left(p_1 * r_{j1}\right) + \left(p_2 * r_{j2}\right) + \left(p_3 * r_{j3}\right) + \ldots$$

where:

p = the proportion of tonnage contributed by the noted substream

r = ratio of component weight to total waste weight in the noted substream

for j 1 to m

where m = number of components

The **variance of the weighted average** is calculated:

$$VarO_j = \left(p_1^{\,2} * \hat{V}_{r_{j1}}\right) + \left(p_2^{\,2} * \hat{V}_{r_{j2}}\right) + \left(p_3^{\,2} * \hat{V}_{r_{j3}}\right) + \ldots$$

In four cases, there was not a sample collected for a particular tonnage subpopulation. These samples are detailed below.

- Commercial:
  - Waste Management rear loader during the night shift
- Self-haul
  - Passenger car at the South Recycling & Disposal Station in the autumn.
  - Truck at the South Recycling & Disposal Station in the autumn.
  - Passenger car at the South Recycling & Disposal Station in the spring.

In order to calculate the weighted composition for overall commercial and overall self-haul substreams, it was necessary to fill in these gaps by creating composite samples. These composite samples were only used as placeholders when performing the weighted averages and were not included in any other calculations or sample counts. In the case of the self-haul passenger car at the South Recycling & Disposal Station in the spring, a sample was based on the composition of the four passenger vehicles sampled during other seasons at the South Recycling & Disposal Station.

The weighting percentages that were used to perform the composition calculations are listed below.

Table D-1 through Table D-9 pertain to the commercial substream and its respective subpopulations, and Table D-10 through Table D-18 correspond to the self-haul substream and its respective subpopulations. Again, weighting percentages were not used to perform composition calculations on commercial or self-haul sampling data by generator type.

Table D-1. Weighting Percentages: Overall Commercial

Hauler Shift Vehicle Type	Tons Disposed	Percent of Total
Waste Management		
Day		
Front Loader	10,456	5.91%
Rear Loader	9,352	5.29%
Compactor Roll-off	8,836	5.00%
Loose Roll-off	3,155	1.78%
Night		
Front Loader	12,513	7.08%
Rear Loader	3,392	1.92%
Compactor Roll-off	7,191	4.07%
Loose Roll-off	4,038	2.28%
Emerald City Disposal		
Day		
Front Loader	51,344	29.04%
Rear Loader	5,723	3.24%
Compactor Roll-off	27,852	15.76%
Loose Roll-off	12,338	6.98%
Night		
Front Loader	8,754	4.95%
Rear Loader	126	0.07%
Compactor Roll-off	10,324	5.84%
Loose Roll-off	1,382	0.78%
Overall	**176,777**	**100%**

Table D-2. Weighting Percentages: Commercial Front Loaders

Hauler Shift	Tons Disposed	Percent of Total
Waste Management		
Day	10,456	12.59%
Night	12,513	15.06%
Emerald City Disposal		
Day	51,344	61.81%
Night	8,754	10.54%
Overall	**83,067**	**100%**

Table D-3. Weighting Percentages: Commercial Rear Loaders

Hauler / Shift	Tons Disposed	Percent of Total
Waste Management		
Day	9,352	50.30%
Night	3,392	18.24%
Emerald City Disposal		
Day	5,723	30.78%
Night	126	0.68%
Overall	**18,593**	**100%**

Table D-4. Weighting Percentages: Commercial Compactor Roll-offs

Hauler / Shift	Tons Disposed	Percent of Total
Waste Management		
Day	8,836	16.30%
Night	7,191	13.27%
Emerald City Disposal		
Day	27,852	51.38%
Night	10,324	19.05%
Overall	**54,203**	**100%**

Table D-5. Weighting Percentages: Commercial Loose Roll-offs

Hauler / Shift	Tons Disposed	Percent of Total
Waste Management		
Day	3,155	15.08%
Night	4,038	19.31%
Emerald City Disposal		
Day	12,338	59.00%
Night	1,382	6.61%
Overall	**20,913**	**100%**

Table D-6. Weighting Percentages: Commercial in Spring

Hauler	Tons Disposed	Percent of Total
Waste Management	15,122	33.14%
Emerald City	30,508	66.86%
Overall	**45,630**	**100%**

Table D-7. Weighting Percentages: Commercial in Summer

Hauler	Tons Disposed	Percent of Total
Waste Management	15,118	33.27%
Emerald City	30,327	66.73%
Overall	**45,445**	**100%**

Table D-8. Weighting Percentages: Commercial in Autumn

Hauler	Tons Disposed	Percent of Total
Waste Management	14,623	33.76%
Emerald City	28,693	66.24%
Overall	**43,316**	**100%**

Table D-9. Weighting Percentages: Commercial in Winter

Hauler	Tons Disposed	Percent of Total
Waste Management	14,071	33.20%
Emerald City	28,315	66.80%
Overall	**42,386**	**100%**

Table D-10. Weighting Percentages: Overall Self Haul

Site Vehicle Type Season	Tons Disposed	Percent of Total
NRDS		
Passenger Car		
Spring	1,052	1.16%
Summer	1,189	1.31%
Autumn	927	1.02%
Winter	822	0.90%
Truck		
Spring	11,319	12.46%
Summer	11,649	12.82%
Autumn	10,036	11.05%
Winter	9,400	10.35%
SRDS		
Passenger Car		
Spring	484	0.53%
Summer	514	0.57%
Autumn	417	0.46%
Winter	345	0.38%
Truck		
Spring	11,237	12.37%
Summer	11,991	13.20%
Autumn	10,281	11.32%
Winter	9,167	10.09%
Overall	**90,829**	**100%**

Table D-11. Weighting Percentages: Self-haul at the NRDS

Vehicle Type Season	Tons Disposed	Percent of Total
Passenger Car		
Spring	1,052	2.27%
Summer	1,189	2.56%
Autumn	927	2.00%
Winter	822	1.77%
Truck		
Spring	11,319	24.40%
Summer	11,649	25.11%
Autumn	10,036	21.63%
Winter	9,400	20.26%
Overall	**46,393**	**100%**

Table D-12. Weighting Percentages: Self-haul at the SRDS

Vehicle Type Season	Tons Disposed	Percent of Total
Passenger Car		
Spring	484	1.09%
Summer	514	1.16%
Autumn	417	0.94%
Winter	345	0.78%
Truck		
Spring	11,237	25.29%
Summer	11,991	26.99%
Autumn	10,281	23.14%
Winter	9,167	20.63%
Overall	**44,436**	**100%**

Table D-13. Weighting Percentages: Self-haul Passenger Vehicles

Site Season	Tons Disposed	Percent of Total
NRDS		
Spring	1,052	18.30%
Summer	1,189	20.68%
Autumn	927	16.11%
Winter	822	14.30%
SRDS		
Spring	484	8.43%
Summer	514	8.94%
Autumn	417	7.25%
Winter	345	5.99%
Overall	**5,750**	**100%**

Table D-14. Weighting Percentages: Self-haul Trucks

Site Season	Tons Disposed	Percent of Total
NRDS		
Spring	11,319	13.30%
Summer	11,649	13.69%
Autumn	10,036	11.80%
Winter	9,400	11.05%
SRDS		
Spring	11,237	13.21%
Summer	11,991	14.09%
Autumn	10,281	12.08%
Winter	9,167	10.77%
Overall	**85,079**	**100%**

Table D-15. Weighting Percentages: Self-haul in Spring

Site Vehicle Type	Tons Disposed	Percent of Total
NRDS		
Passenger Car	1,052	4.37%
Truck	11,319	46.98%
SRDS		
Passenger Car	484	2.01%
Truck	11,237	46.64%
Overall	**24,092**	**100%**

Table D-16. Weighting Percentages: Self-haul in Summer

Site Vehicle Type	Tons Disposed	Percent of Total
NRDS		
Passenger Car	1,189	4.69%
Truck	11,649	45.96%
SRDS		
Passenger Car	514	2.03%
Truck	11,991	47.32%
Overall	**25,343**	**100%**

Table D-17. Weighting Percentages: Self-haul in Autumn

Site Vehicle Type	Tons Disposed	Percent of Total
NRDS		
Passenger Car	927	4.28%
Truck	10,036	46.33%
SRDS		
Passenger Car	417	1.93%
Truck	10,281	47.46%
Overall	**21,660**	**100%**

Table D-18. Weighting Percentages: Self-haul in Winter

Site Vehicle Type	Tons Disposed	Percent of Total
NRDS		
Passenger Car	822	4.17%
Truck	9,400	47.64%
SRDS		
Passenger Car	345	1.75%
Truck	9,167	46.45%
Overall	**19,733**	**100%**

Comparison Calculations

Identifying statistically significant differences requires a two-step calculation. First, assuming that the two groups to be compared have the same variance, a **pooled sample variance** is calculated:

$$S_{pool}{}^2 = \frac{\left[(n1-1)\cdot\left(n1\cdot\hat{V}_{r_j 1}\right)\right]+\left[(n2-1)\cdot\left(n2\cdot\hat{V}_{r_j 2}\right)\right]}{n1+n2-2}$$

Next, the **t-statistic** is constructed:

$$t = \frac{(r1-r2)}{\sqrt{\frac{S_{pool}{}^2}{n1}+\frac{S_{pool}{}^2}{n2}}}$$

The **p-value** of the t-statistic is calculated based on (n1+n2 -2) degrees of freedom.

Appendix E: Year-to-Year Comparison Calculations

This section outlines the technical issues involved with the year-to-year comparison calculations. The calculation formulae are outlined in Appendix D.

Background

In an ongoing effort to monitor the types and amounts of materials disposed locally, Seattle has performed several waste composition studies. Differences are often apparent between study periods. In this appendix, selected results from the year 2008 study are compared to 1988/89, 1990, 1992, 1996, 2000, and 2004 findings.[3]

For the purposes of this study, composition variations in the percentage of each broad material category disposed were measured within the following substreams:

- Commercial Substream
  1988/89, 1992, 1996, 2000, and 2004 vs. 2008
- Self-haul Substream
  1988/89, 1990, 1992, 1996, 2000, and 2004 vs. 2008

In order to control for population changes and other factors that may influence the total amount of waste disposed from year to year, the tests described in this appendix measure waste proportions, and not actual tonnage. For example, if newspaper accounts for 5% of a particular substream's disposed waste each year, and that substream disposed a total of 1,000 tons of waste in one year and 2,000 tons of waste in the next, while the amount of newspaper increased from 50 to 100 tons, the percentage remained the same. Therefore, the tests would indicate that there had been no change.

The purpose of conducting these comparison tests is to identify statistically significant changes in the percentage of broad material categories of waste disposed in each substream over time. One specific example is stated as follows:

Hypothesis: "There is no statistically significant difference, between the 2004 and 2008 study periods, in the percentage of paper disposed in the commercial substream."

Statistics are then employed to look for evidence disproving the hypothesis. A "significant" result means that there is enough evidence to disprove the hypothesis, and it can be concluded that there is a true difference across years. "Insignificant" results indicate that either a) there is no true difference, or b) even though there may be a difference, there is not enough evidence to prove it.

[3] The 2004 study was also conducted by Cascadia Consulting Group, and followed the same basic methodology as the 2008 project.

The purpose of these tests is to identify changes across years. However, the study did not attempt to investigate *why* or *how* these changes occurred. The changes may be due to a variety of factors. For example, a decrease in paper disposed in the commercial substream could be due to any combination of the following:

- Consumer preferences—electronic media might have captured some of the market previously held by paper;
- Technology—manufacturers might use thinner paper than in the past, which would decrease the weight of paper, even if the same number of pages was disposed; or
- Recycling—more businesses may participate in paper recycling programs.

Statistical Considerations

The analyses are based on the component percentages, by weight, for each selected substream. As described in Appendix D, these percentages are calculated by dividing the sum of the selected component weights by the sum of the corresponding sample weights. T-tests (modified for ratio estimation) were used to examine the year-to-year variation.

Normality

The distribution of some of the broad waste categories (particularly the hazardous materials) is skewed and may not follow a normal distribution. Although t-tests assume a normal distribution, they are very robust to departures from this assumption, particularly with large sample sizes. In addition, the broad waste categories are sums of several individual waste components, which improve our ability to meet the assumptions of normality.

Dependence

There may be dependence between waste components (if a person disposes of component A, they always dispose of component B at the same time).

There is certainly a degree of dependence between the calculated percentages. (Since the percentages sum to 100, if the percentage of component A increases, the percentage of some other component must decrease). This type of dependence is somewhat controlled by choosing only a portion of the waste categories for the analyses.

Multiple T-Tests

In all statistical tests, there is a chance of incorrectly concluding that a result is significant. The year-to-year comparison required conducting several t-tests, (one for each waste category within each set of substreams) **each** of which carries that risk. However, we were willing to accept only a 10% chance, **overall**, of making an incorrect conclusion. Therefore, each test was adjusted by setting the significance threshold to $\frac{0.10}{w}$ (w = the number of t-tests).

The adjustment can be explained as follows:

For each test, we set a $1-\frac{0.10}{w}$ chance of not making a mistake, which results in a $\left(1-\frac{0.10}{w}\right)^{w}$ chance of not making a mistake during all w tests.

Since one minus the chance of not making a mistake equals the chance of making a mistake, by making this adjustment, we have set the overall risk of making a wrong conclusion during any one of the tests at $\left(1-\left(1-\frac{0.10}{w}\right)^{w}\right)=0.10$.

The chance of a "false positive" for this study is restricted to 10% overall, or 1.25% for each test (10% divided by the eight tests within each substream equals 1.25%).

For more detail regarding this issue, please refer to Section 11.2 "The Multiplicity Problem and the Bonferroni Inequality" of *An Introduction to Contemporary Statistics* by L.H. Koopmans (Duxbury Press, 1981).

Interpreting the Calculation Results

The following tables include detailed calculation results for the commercial and self-haul substreams. The comparisons are shown for all eight tests; an asterisk indicates the statistically significant differences.

For the purposes of this study, only those calculation results with a p-value of less than 1.25% are considered to be statistically significant. As described above, the threshold for determining statistically significant results (the "alpha-level") is conservative, accounting for the fact that so many individual tests were calculated.

The t-statistic is calculated from the data; according to statistical theory, the larger the absolute value of the t-statistic, the less likely that the two populations have the same mean. The p-value describes the probability of observing the calculated t-statistic if there were no true difference between the population means.

For example, in Table E-1 the proportion of *plastic* in the disposed commercial substream increased from 7.0% to 13.3% across the study periods. The t-statistic is relatively large (5.3628) and the probability (p-value) of observing that t-statistic if there had been no true difference between years is approximately 0.0%. This value is less than the study's pre-determined threshold for statistically significant results (alpha-level of 1.25%); thus the increase in *plastic* is considered to be a true difference. On the other hand, the p-value corresponding to the decrease in *glass* is very large. The chance of observing the 2.7% to 1.7% decrease when the actual proportion had not changed is approximately 4% - slightly too high to be considered a true difference.

Changes in Commercial Waste

In Table E-1, **paper**, **plastic**, **organics**, **other materials**, **CDL wastes**, and **hazardous** broad material categories showed a significant change across study periods. The proportions of the other two broad material categories did not experience a significant increase or decrease.

Table E-1 Changes in Commercial Waste Composition: 1988/89 to 2008

	Mean Ratio (Material Wt/Total Wt)		t-Statistic	p-Value (Cut-off for statistically valid difference = 0.0125)
	1988/1989	*2008*		
Paper	**31.9%**	**23.7%**	**3.6678**	**0.0003 ***
Plastic	**7.0%**	**13.3%**	**5.3628**	**0.0000** *
Glass	2.7%	1.7%	2.0784	0.0383
Metal	7.9%	5.3%	2.2658	0.0240
Organics	**11.3%**	**31.0%**	**7.3073**	**0.0000 ***
Other Materials	**3.1%**	**7.7%**	**4.0349**	**0.0001 ***
CDL Wastes	**35.5%**	**13.6%**	**7.2069**	**0.0000 ***
Hazardous	**0.6%**	**3.8%**	**2.9939**	**0.0029 ***
Number of Samples	*121*	*271*		

Table E-2 illustrates changes in commercial waste composition from 2004 to 2008. The **glass** and **hazardous** broad material categories significantly changed across the two study periods.

Table E-2 Changes in Commercial Waste Composition: 2004 to 2008

	Mean Ratio (Material Wt/Total Wt)		t-Statistic	p-Value (Cut-off for statistically valid difference = 0.0125)
	2004	*2008*		
Paper	26.5%	23.7%	1.9211	0.0552
Plastic	12.3%	13.3%	1.1656	0.2443
Glass	**3.8%**	**1.7%**	**3.1291**	**0.0018** *
Metal	5.1%	5.3%	0.1789	0.8581
Organics	30.2%	31.0%	0.4015	0.6882
Other Materials	8.5%	7.7%	0.6696	0.5034
CDL Wastes	12.9%	13.6%	0.3588	0.7199
Hazardous	**0.7%**	**3.8%**	**4.3490**	**0.0000 ***
Number of Samples	*270*	*271*		

Changes in Self-haul Waste

As illustrated in Table E-3, **plastic**, **metal**, **organics**, **other materials**, and **CDL wastes** showed a significant change across study periods. The proportions of the other three broad material categories did not experience a significant increase or decrease.

Table E-3 Changes in Self-haul Waste Composition: 1988/89 to 2008

	Mean Ratio (Material Wt/Total Wt)		t-Statistic	p-Value (Cut-off for statistically valid difference = 0.0125)	
	1988/1989	*2008*			
Paper	7.9%	5.2%	2.2288	0.0263	
Plastic	**3.2%**	**6.8%**	**3.6851**	**0.0003**	*
Glass	1.8%	1.7%	0.1492	0.8814	
Metal	**10.4%**	**5.4%**	**3.1821**	**0.0016**	*
Organics	**27.9%**	**3.0%**	**8.4561**	**0.0000**	*
Other Materials	**7.7%**	**18.1%**	**4.7430**	**0.0000**	*
CDL Wastes	**39.6%**	**58.3%**	**4.8778**	**0.0000**	*
Hazardous	1.6%	1.5%	0.1045	0.9168	
Number of Samples	*217*	*216*			

As shown in Table E-4, only the **organics** broad material categories changed significantly between the 2004 and 2008 study periods.

Table E-4 Changes in Self-Haul Waste Composition: 2004 to 2008

	Mean Ratio (Material Wt/Total Wt)		t-Statistic	p-Value (Cut-off for statistically valid difference = 0.0125)	
	2004	*2008*			
Paper	6.7%	5.2%	1.3361	0.1822	
Plastic	5.5%	6.8%	1.3477	0.1785	
Glass	2.2%	1.7%	0.6137	0.5398	
Metal	7.5%	5.4%	1.8659	0.0627	
Organics	**6.4%**	**3.0%**	**2.9240**	**0.0036**	*
Other Materials	21.4%	18.1%	1.2385	0.2162	
CDL Wastes	49.7%	58.3%	2.4703	0.0139	
Hazardous	0.7%	1.5%	1.2324	0.2185	
Number of Samples	*216*	*216*			

Appendix F: Field Forms

The 2008 field forms are included in the following order:

- Commercial vehicle selection sheet
- Self-haul vehicle selection sheet
- Waste tally sheet

Vehicle Selection Sheet

Seattle Commercial Waste Composition Study

Sampling Date: **10/2/08**
Sampling Location: **SRDS**
Hauler: **Waste Management**

Sample ID	Truck No.	Driver	Route	Load	Arrival Time	Vehicle Type	Company Name	Notes	Generator Code
	202237	Mike	A1A	1		FL			
	303114	Rich	A2A	1		RL			
	202235	Antonio	A1C	1		FL			
cont	209012	Cam	A1B	1		FL			
	209012	Cam	A1B	2		FL			
	264659	Mike	A1A	2		FL			
cont	209012	Cam	A1B	3		FL			
	264659	Mike	A1A	3		FL			
	209012	Cam	A1B	4		FL			
cont						RO			
						RO			
						RO			
						RO			
cont						RO			
						RO			
						RO			
						RO			

Today's Sampling Plan:	FL	RL	RO
	6	3	6

Additional Samples, if Possible:

Generator Code Key

If Commercial:

A - Manufacturing
B - Wholesale
C - Retail
D - Restaurant
E - Hotel/Motel
F - Office
G - Health Care
H - Education
I - Transportation
J - Other Services
K - Mixed Businesses
L - CDL
M - Other Non-residential
N - Homeowner Box

If Percentage of load is not 100% Com, please indicate % of MFor SF in Notes

SEATTLE WASTE COMPOSITION STUDY
Vehicle Selection Form

Site: **South Station**

Date: **Friday, April 04, 2008**

Cross off one number for each vehicle entering the station (**both trucks and passenger vehicles**).

When you reach the number circled, this vehicle should be asked to go to the sorting area to dump its load for sampling.

Continue for each block on the next line until the required number of vehicles is sampled.

SELF-HAUL GARBAGE ONLY **NEED 22 VEHICLES - PLS. SAMPLE EVERY 6TH VEHICLE**

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104
105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128
129	130	131	132	133	134	135	136

2008 Seattle Waste Composition Study

Tally Sheet - Page 1

PAPER	Newspaper				
	Plain OCC/Kraft				
	Waxed OCC/Kraft				
	High Grade				
	Mixed Low Grade				
	Compostable/Soiled				
	Single-use Food Service				
	Mixed/Other Paper				

PLASTIC	#1 PET Bottles				
	#2 HDPE Natural Bottles				
	#2 HDPE Colored Bottles				
	Other Bottles				
	Tubs				
	Expanded Poly. Nonfood				
	Expanded Poly. Food grade				
	Single-use Food Service				
	Other Rigid Packaging				
	Store/Dry Cleaning Bags				
	Clean PE Film				
	Other Film				
	Durable Plastic Products				
	Plastic/Other Materials				

METAL	Alum. Beverage Cans				
	Alum. Foil/Containers				
	Other Aluminum				
	Other Nonferrous				
	Tin Food Cans				
	Empty Aerosol Cans				
	Other Ferrous				
	Oil filters			Filter Count:	
	Mixed Metals/Material				

GLASS	Clear Bottles				
	Green Bottles				
	Brown Bottles				
	Container Glass				
	Fluorescent Tubes				
	Flat Glass				
	Other Glass				

ORGANICS	Leaves & Grass				
	Prunings				
	Food				
	Textiles/Clothing				
	Mixed Textiles				
	Carpet				
	Disposable Diapers				
	Animal By-products				
	Rubber Products				
	Tires				

CONSTRUCTION DEBRIS	Clean Dimension Lumber				
	Clean Engineered Wood				
	Pallets				
	Crates				
	Other Untreated Wood				
	New Painted Wood				
	Old Painted Wood				
	Creosote-treated Wood				
	Other Treated Wood				
	Contaminated Wood				
	New Gypsum Scrap				
	Demo Gypsum Scrap				
	Fiberglass Insulation				
	Rock/Concrete/Bricks				
	Asphalt Shingles				
	Other Asphaltic Roofing				
	Ceramics				
	Other Construction				

CAPTURE DATE **SAMPLE NUMBER**

FACILITY

FURNITURE, APPLIANCES, AND ELECTRONICS	Furniture		
	Mattresses		
	Small Appliances		
	Audio/Visual Equipment		
	CRT Monitors		
	CRT Televisions		
	Other Computer Equipment		
HAZARDOUS WASTES	Latex Paint		
	Solvent-based Adhesives		
	Water-based Adhesives		
	Oil-based Paint/Thinners		
	Caustic Cleaners		
	Pesticides/Herbicides		
	Dry-cell Batteries		
	Wet-cell Batteries		
	Gasoline/Kerosene		
	Motor Oil/Diesel Oil		
	Asbestos		
	Explosives		
	Medical Wastes		
	Other Chemicals		
	Other Potentially Toxic		
MISC.	Sand/Soil/Dirt		
	Non-distinct Fines		
	Misc. Organics		
	Misc. Inorganics		

SUPERMIX:

SAMPLE NUMBER

ALL SAMPLE VEHICLES

VEHICLE TYPE

A - Auto (Car or SUV)
P - Pickup Trucks
V - Van
T - Other Truck
RL - Rear Loader
FL - Front Loader
SL - Side Loader
ROD - Loose Roll-Off
ROC - Compactor Roll-Off

GENERATOR TYPE

_____ **Percent SF**
_____ **Percent MF**
_____ **Percent COM**
100%

If Commercial:
A - Manufacturing
B - Wholesale
C - Retail
D - Restaurant
E - Hotel/Motel
F - Office
G - Health Care
H - Education
I - Transportation
J - Other Services
K - Mixed Businesses
L - CDL
M - Other Non-residential
N - Homeowner Box

Company Name:

COMMERCIAL HAULERS

HAULER:

Allied **Waste Management**

TRUCK #: **Time:**

ROUTE #: **/ LOAD #:**

SELF-HAUL VEHICLES

FACILITY: **NRDS or SRDS**

Vehicle 1
LICENSE PLATE:
ORIGIN ADDRESS:
PERCENT SORTED:
or NET WEIGHT:

Vehicle 2
LICENSE PLATE:
ORIGIN ADDRESS:
PERCENT SORTED:
or NET WEIGHT:

Vehicle 3
LICENSE PLATE:
ORIGIN ADDRESS:
PERCENT SORTED:
or NET WEIGHT:

Tally Sheet - Page 2

Revised 2/1 7/08