

City of Los Angeles

Waste Characterization & Quantification Study

Year 2000



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Bureau of Sanitation

Solid Resources Citywide Recycling Division

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Bureau of Sanitation Project Manager

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1. INTRODUCTION AND OVERVIEW

1.1 OBJECTIVE OF THE STUDY

The objective of this study was to characterize and quantify refuse disposed by five waste sectors within the City of Los Angeles. The characterization of municipal solid waste (MSW) is presented in the form of *composition estimates*, reflecting the relative amounts of 58 material types within the MSW disposed by each sector. Composition estimates were derived by hand-sorting and applying statistical analysis to numerous *samples* of MSW from each waste sector. Quantity estimates for MSW were derived from data supplied by the California Integrated Waste Management Board's (CIWMB) *Disposal Reporting System*, data obtained during surveys of disposal facility staff and drivers of individual vehicles at those facilities, and measurements taken of waste at the point of generation.

The study involved acquiring 323 waste samples at disposal sites and 989 waste samples at sites of generation (businesses, institutions and apartment buildings). Samples were analyzed between November 2000 and July 2001.

In addition to the objective described above, it is assumed that the information in this report may be used to verify disposal data as reported by the County Disposal Reporting System and to identify potential opportunities for waste reduction, recycling, and diversion.

1.2 PROJECT MANAGEMENT AND CONTRIBUTING CONSULTANTS

With Bureau of Sanitation's Citywide Recycling Division experienced staff managing the project, the Year 2000 Waste Characterization and Quantification Study daily operations proceeded smoothly. The Bureau of Sanitation provided the equipment, such as collection trucks, refuse containers, tools, safety equipment; cell phones, and computers. Bureau of Sanitation drivers collected the samples with assistance from Environmental Science Associate's staff. The project manager was involved in planning the daily schedule and performed unscheduled visits to pick up sites to maintain the integrity of waste samples collected.

Cascadia Consulting Group, Inc., a Seattle-based environmental consulting firm, was given the responsibility as a subcontractor to Environmental Science Associates to lead the implementation of the Waste Characterization Study for the City of Los Angeles. The roles of Cascadia and the other consultants are described briefly in Table 1.

Table 1: Overview of Consultants' Responsibilities

City of Los Angeles	Overview of Major Responsibilities
Solid Resources Citywide Recycling Division	Provided project manager, drivers, laborers, trucks, safety equipment, performed spot quality checks and ensured smooth and accident-free day to day operations.
Consultants	Overview of Major Responsibilities
Environmental Science Associates	Served as primary contractor and collected

	waste samples from commercial and multifamily generators
Cascadia Consulting Group, Inc.	Designed and led the implementation of the waste characterization study
Sky Valley Associates, Inc.	Sorted waste samples and selected samples at disposal sites
Sheri Eiker-Wiles Associates	Recruited businesses and organizations to participate in study of commercial waste
TerraStat Consulting Group	Provided statistical advice and analysis

1.3 WASTE SECTORS

This study was designed to collect representative data reflecting major sectors of disposed municipal solid waste (MSW) that originated within the City of Los Angeles. The sectors included:

- **single-family residential** waste,
- **multifamily residential** waste,
- **commercial** waste, which includes waste from commercial, industrial, and institutional sources,
- **construction and demolition** waste, which is disposed by contractors and “do-it-yourself” homeowners who construct and/or demolish buildings, and
- **landscaping** waste, which is disposed by professionals and “do-it-yourself” residents who landscape or do other yard care activities.

The study used a stratified random sampling methodology, in which waste was sampled from numerous subgroups (strata) to develop a waste composition profile for each stratum. Then the data were aggregated in a way that reflects each stratum’s relative contribution to the overall waste stream, thus producing overall waste composition information.

Within the single-family residential, construction and demolition, and landscaping sectors, strata included the waste that was transported to specific disposal facilities. For example, in the construction and demolition sector, waste composition estimates were developed for two vehicle types (large or small) at each of four sampled facilities. The resulting eight waste composition results were then combined to estimate the overall waste composition of waste from the construction and demolition sector. Waste disposed by the commercial sector was divided into 25 separate strata according to type of industry, and some of those strata were split into even finer categories. Division of the commercial sector into industry groups was accomplished using Standard Industrial Classification (SIC) codes.

Findings regarding the composition and quantity of waste disposed by each sector are presented in Section 2.

1.4 SELECTION OF WASTE SAMPLES

Waste samples were obtained via two methods – *disposal-site sampling* and *generator sampling*. Samples obtained at disposal facilities were taken from vehicles as they arrived at the facilities, and the guiding principle was to give each vehicle a chance equal to others of its type to provide a sample. Disposal-site sampling was conducted in January and July 2002. The single-family residential, construction and demolition, and landscaping waste sectors were characterized using disposal-site samples.

Samples obtained at the point of generation reflected the composition of the commercial and multifamily residential waste sectors. The guiding principle in selecting generator samples was to give each site (for example, each business location) an equal chance of providing a sample, along with other sites within the same industry and size categories. Generator sampling occurred from November 2000 through July 2001.

1.4.1 SAMPLES OBTAINED AT DISPOSAL SITES

Waste samples from the single-family residential, construction and demolition, and landscaping waste sectors were obtained directly from collection vehicles at disposal sites (landfills or transfer stations). Appendix A presents greater detail on the sample selection, capture, and sorting process.

1.4.1.1 SINGLE-FAMILY RESIDENTIAL WASTE

In this study, single-family households are defined as households in buildings with 1, 2, 3, or 4 units, as well as mobile homes. The estimated number of such households is based on the total number of households in Los Angeles City as reported by the 2000 Census, adjusted with data from the 1990 Census that reflects the number of units per building.

Based on the expected variability of single-family residential waste, Cascadia planned to collect 80 samples from this sector. This is twice the CIWMB minimum requirement for characterizing residential waste. Three sites were selected for sampling: Central LA Transfer (BFI), Bradley Landfill, and Sunshine Canyon Landfill. These sites were selected because collectively they represent over 80% of Los Angeles' disposed single-family residential waste. The numbers of samples collected at each of the three sites were allocated based on the relative tons of single-family waste disposed at each facility in 2000. Once sampling days were chosen, daily sampling goals were established and specific vehicles for sampling were systematically selected to ensure unbiased and reliable waste composition estimates.

Drivers of selected vehicles were instructed to unload their waste in an elongated pile. The waste sample was selected from the pile by using an imaginary 16-cell grid superimposed over the dumped material. The Field Manager identified a randomly pre-selected cell to be sorted. If the designated cell was blocked due to site constraints, an alternate cell was randomly selected. Then, a sample weighing approximately 200 to 300 pounds was extracted by machine or hand. Eighty samples were collected in all.

1.4.1.2 CONSTRUCTION AND DEMOLITION WASTE

Because of the expected high variability of construction and demolition waste composition, a relatively large number of samples – 160 samples – was allocated to this sector. Facilities were chosen for sampling based on the extent to which they receive significant fractions of

the total construction and demolition waste disposed by the City of Los Angeles. The Nu-Way landfill was selected to represent waste disposed at dedicated, inert landfills, because it received about 90% of all inert C&D disposal from Los Angeles City in 2000. Bradley and Calabasas Landfills and Southgate (LACSD) Transfer Station were selected to represent the composition of C&D loads disposed as MSW. Samples were allocated to each of these four sites based on the relative amounts of C&D waste disposed at each facility in 2000. After sampling days were chosen, vehicle selection and sample selection proceeded using the same method as for single-family residential waste. As planned, 160 samples were collected and sorted.

1.4.1.3 LANDSCAPING WASTE

Cascadia planned to collect 80 samples from the Landscaping waste sector. Three sites were selected for sampling: Bradley and Calabasas Landfills and Southgate (LACSD) Transfer Station. Bradley and Calabasas were selected because they receive over 95% of the landscaping sector waste disposed at landfills from Los Angeles. The Southgate transfer station was selected because it was expected that the composition of landscaping waste disposed at transfer stations might vary from that disposed at landfills.

The numbers of samples collected at each of these sites were allocated based on the expected relative waste disposed at each facility in 2000. The vehicle selection and waste sampling procedure was essentially the same as for single-family residential waste. A total of 83 samples were collected and sorted to represent the landscaping sector.

1.4.2 SAMPLES OBTAINED AT SITE OF GENERATION

1.4.2.1 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL WASTE

A list of all commercial, industrial, and institutional sites within the City of Los Angeles was obtained from Dun and Bradstreet through a third-party vendor. The sites were segregated into 25 categories (as well as subcategories) according to SIC industrial classification codes, and sites were then chosen randomly from within each category to be recruited to participate in the study. The number of samples allocated to each of the 25 major categories was determined by guidelines in the California Uniform Waste Disposal Characterization Method. The major categories of commercial generator sites are listed in Table 4 of in Section 2, and subcategories are listed in Appendix B. Composition estimates for subcategories also are presented in Appendix B.

Nine-hundred waste samples were obtained from commercial waste generators located within the City of Los Angeles. At each site, waste samples were obtained in either of the following ways:

- A single waste container (e.g., a dumpster) at the site was selected, and a cross-section of waste from within the container was extracted and placed into 90-gallon *toters* (plastic barrels) for transportation to the waste sorting area. When this method was used, the sampling visit was scheduled to occur shortly before the waste container was to be emptied by the regular refuse hauler.

or

- Toters were provided to the site ahead of the scheduled sampling time, and personnel at the site placed waste into the toters for a designated time period, or until the toters were full. The waste that was placed in the toters became the waste sample for that site.

In cases where a single site disposed of more than one type of waste – for example, when a school had certain dumpsters dedicated to cafeteria waste and others dedicated to office/classroom waste – one sample was obtained from each of the identified *substreams*.

The specific procedure that was used to identify and contact sites and to obtain waste samples is described in Appendix A.

1.4.2.2 MULTIFAMILY WASTE

Multifamily buildings were chosen randomly from telephone directories for the City of Los Angeles, and the managers of selected buildings were recruited to participate in the study. This type of generator study was used because of the difficulty in obtaining pure loads of multifamily waste at disposal facilities.

Waste was obtained from waste containers (e.g., dumpsters) through the same method that was used for commercial waste samples. Refuse samples were obtained from 85 multifamily sites. At four of the sites, all of which were large public housing developments, the research team found distinct substreams for normal residential refuse and for bulky items. In those cases, the refuse was collected and sorted using the standard method, and the collection of bulky items was measured to determine its total volume. Therefore a total of 89 multifamily samples were included in the analysis.

1.5 QUANTIFYING WASTE DISPOSAL BY SECTOR

The task of quantifying waste from specific sectors is nearly as complicated as estimating waste composition. The sections below describe the research team's basic approach to this task. A more thorough description of the method appears in Appendix A.

1.5.1 QUANTIFYING SINGLE-FAMILY, CONSTRUCTION AND DEMOLITION, AND LANDSCAPING WASTE

The City of Los Angeles Public Works Bureau of Sanitation collects waste from all single-family households and some small multi-family buildings, primarily those with four or fewer units. For this study, *single-family household* refers to a household in a building with 4 or fewer units, plus mobile homes. The Bureau of Sanitation estimated the total tonnage of single-family residential waste disposed in 2000.

The total tonnage of construction and demolition and landscaping wastes disposed in 2000 was calculated by estimating the quantity of these materials disposed at each landfill or transfer station. The estimated quantities for each site were obtained by three methods. At most facilities, Cascadia conducted a survey in which we inquired about the quantity of construction and demolition and landscaping wastes disposed. On-site vehicle surveys were conducted at four facilities: the Calabasas and Bradley landfills and the SouthGate (LACSD) and American Waste (Gardena) transfer stations. These vehicle surveys estimated the relative fraction of all waste that was construction and demolition or landscaping waste from

Los Angeles. This information was then combined with reported total waste disposal tonnages to estimate the tonnage of construction and demolition and landscaping wastes disposed at these four facilities in 2000. At inert waste landfills for construction and demolitions waste, facility tonnages were taken from the CIWMB's online Disposal Reporting System.

1.5.2 QUANTIFYING COMMERCIAL AND MULTIFAMILY WASTE

For each commercial or multifamily site that participated in the study, measurements were taken to quantify the rate of waste disposal. In most cases, the **volume** of waste was measured by recording the dimensions of the waste present in disposal containers shortly before normal refuse collection. In some cases, the volume of waste was assessed based on the amount of waste left in totes by personnel at the site being studied. Along with the measurements that reflected waste volume, an estimate was recorded of the **time** it took for the observed waste to accumulate at the site.

An average waste **density** figure was calculated for each commercial category and for multifamily waste. The density figure was used to convert measured waste volumes to weights for individual sites. In addition, the **number of employees** was recorded for each site. These data elements were used to calculate the tons of waste disposed at each site, per employee, per year (TPEPY).

For some sites that used refuse compactors (which did not permit direct measurement of the volume of waste inside), monthly or annual data was obtained reflecting the volume or weight of waste collected by the hauler.

For each commercial category, the average TPEPY was multiplied by the estimated number of employees in that category citywide to project the total waste tonnage disposed by the category. A similar procedure, based on numbers of apartment units, was used to estimate the citywide tonnage of multifamily residential waste.

1.6 ESTIMATING WASTE COMPOSITION BY SECTOR

Waste samples from each sector or subsector were sorted by Sky Valley Associates, a professional waste sorting firm. The waste was sorted into 58 categories, which correspond to the State of California's List of 57 Material Subtypes for Waste Sorting, plus an additional category reflecting *electronic appliances*. The list of sorting categories is presented in Appendix D. The material types included:

- 11 categories of paper,
- 6 categories of glass,
- 7 categories of metals, including *electronics*,
- 6 categories of plastic,
- 8 categories of organic waste,
- 7 categories of construction/demolition waste,
- 5 categories of hazardous waste,
- 7 categories of special waste, and
- 1 category for mixed residue and fine materials that were too small to sort.

Based on the weight of each material category within each sample, mean composition estimates were developed for all of the samples from a given waste sector or subsector. The mean composition estimates are presented in Section 2. Error ranges for each composition estimate were calculated using a *statistical bootstrapping* method developed by Cascadia Consulting Group. The calculation methodology is described more thoroughly in Appendix A.

2. RESULTS

2.1 QUANTITY OF MSW DISPOSED BY SECTOR

The total amount of MSW disposed by the City of Los Angeles in 2000 was 3,942,678 tons, according to the on-line Disposal Reporting System maintained by the CIWMB. However, this study focuses primarily on waste at the point of generation. In Los Angeles, a fraction of waste is sorted after collection to remove recyclables; so not all collected waste is ultimately disposed. In this study, we make a distinction between waste measured at the point of *generation* and waste measured at the point of *disposal*. Waste measured at the point of generation, including commercial and multi-family residential wastes, includes some waste that would normally have been recycled after collection.¹ On the other hand, waste from the single-family residential, construction and demolition, and landscaping sectors was measured at disposal sites, after any removal of recyclables had already taken place. For these reasons, quantity estimates based on measurements taken at disposal sites and quantity estimates based on measurements taken at the point of generation are not directly comparable, and we do not attempt to reconcile our waste estimates with the total disposal reported by the CIWMB.

Table 2 and Table 3 show the waste disposal for the sectors addressed in this study.

Table 2: Waste Measured at Point of Disposal, by Sector

Sector	Est. 2000 Tons
Single-Family Waste	863,640
Construction/Demolition	468,897
Landscaping	31,193
Total	1,363,730

Table 3: Waste Measured at Point of Generation, by Sector

Sector	Est. 2000 Tons
Multi-Family Waste	551,650
Commercial	1,629,231
Total	2,180,881

Following are detailed descriptions of the waste disposal by sector.

2.1.1 QUANTITY OF SINGLE-FAMILY RESIDENTIAL WASTE

The total quantity of single-family waste disposed was estimated by the City Bureau of Sanitation to be 863,640 tons. This waste was collected from approximately 720,000 households, for an average of about 1.2 tons per household per year.

¹ Cascadia did not attempt to measure material that generators set out specifically for recycling. Generated waste refers to waste collected as refuse, some fraction of which may be then sorted to remove recyclables.

2.1.2 QUANTITY OF MULTIFAMILY RESIDENTIAL WASTE

Multifamily waste was measured at the point of generation for selected multifamily complexes. An average figure was derived for the volume of waste disposed per apartment unit per year. That figure was multiplied by the average measured density of multifamily waste (110 pounds per cubic yard) and by the estimated number of multifamily units that exist in the city (593,000 units), to produce the citywide annual disposal estimate of 551,650 tons.

2.1.3 QUANTITY OF CONSTRUCTION AND DEMOLITION WASTE

The total quantity of waste disposed by the construction and demolition sector is estimated at 468,897 tons. Of this waste, 364,703 tons were disposed at the four dedicated, inert waste disposal sites serving Los Angeles: Azusa Land Reclamation Landfill, Nu-Way Live Oak Landfill, Peck Road Gravel Pit, and Reliance Pit No. 2, as reported by the CIWMB. The remaining 104,194 tons were disposed at municipal solid waste landfills and transfer stations, the majority at Bradley and Calabasas, as estimated via a survey that Cascadia administered to all landfills and transfer stations that accept waste from the City of Los Angeles. These totals represent waste disposed by the construction and demolition sector, and do not include construction and demolition materials contained in either residential or commercial MSW loads. Construction and demolition materials within commercial or residential MSW waste are shown in each sector's waste composition results.

2.1.4 QUANTITY OF LANDSCAPING WASTE

Approximately 31,193 tons of landscaping waste was disposed by landscaping professionals and do-it-yourself landscapers in 2000, as estimated via a survey that Cascadia administered to all landfills and transfer stations that accept waste from the City of Los Angeles. This estimate does not include yard waste disposed in a business or resident's normal, commercially hauled trash. Such waste is shown in each sector's waste composition results.

2.1.5 QUANTITY OF COMMERCIAL WASTE

Commercial waste was measured at the point of generation, as described in Section 1. The total amount of waste disposed by the Los Angeles commercial sector in 2000 is estimated to be 1,629,231 tons, prior to any correction for waste that is recovered or recycled after passing through a municipal recycling facility (MRF). With about 1,554,000 employees in the City of Los Angeles, average waste disposal across all industry groups is about 1.05 tons per employee per year. Table 4 shows the estimated waste disposed by each industry group, including per employee figures.

Table 4: Estimated Annual Commercial Waste Disposal, by Industry Group

Industry Group	Estimated Annual Tons MSW	Estimated Employment	Estimated Tons per Employee per Year	Average Waste Density (pounds per cubic yard)
1 Services – Other	129,866	176,748	0.73	99
2 Services – Medical & Health	98,837	99,773	0.99	90
3 Finance, Insurance & Real Estate	57,049	93,388	0.61	121
4 Retail – Restaurants	261,108	87,480	2.98	142
5 Services – Business	43,900	118,448	0.37	112
6 Services – Education	63,370	127,131	0.50	113
7 Retail – Remainder	109,781	72,457	1.52	73
8 Wholesale Trade – Durable Goods	52,750	48,360	1.09	71
9 Wholesale Trade – Nondurable Goods	138,823	50,946	2.72	90
10 Government Facilities	56,623	61,711	0.92	108
11 Retail – Miscellaneous	26,515	29,115	0.91	83
12 Manufacturing – Printing & Publishing	12,356	20,743	0.60	84
13 Manufacturing – Apparel & Textile	59,671	65,282	0.91	100
14 Retail – Food Stores	113,115	29,837	3.79	120
15 Services – Motion Picture	39,271	42,612	0.92	97
16 Manufacturing – Transportation Equipment	8,446	12,278	0.69	80
17 Services – Hotel & Lodging	59,282	19,595	3.03	137
18 Manufacturing – Primary & Fabricated Metal	19,125	18,480	1.03	77
19 Other Transportation	16,076	20,583	0.78	90
20 Manufacturing – Other	38,766	23,262	1.67	106
21 Manufacturing – Instrument & Related Products	2,605	8,225	0.32	90
22 Communications	8,065	24,944	0.32	86
23 Manufacturing – Food & Kindred Products	40,192	18,241	2.20	88
24 Manufacturing – Electronic Equipment	7,252	11,009	0.66	82
25 Other Industries	166,389	88,831	1.87	95
Overall Commercial Sector	1,629,231	1,554,028	1.05	101

There are two important points to note regarding the figures in Table 4, above. First, the figures for average waste density were calculated for each industry group as the sum of all sample weights divided by the sum of all sample volumes. Since sample volumes were measured by putting the sampled refuse into 90-gallon totes and recording the totes' fullness, it is possible that an equivalent amount of "undisturbed" refuse in a site's dumpster would have occupied a slightly different volume. Therefore, the waste densities expressed above might deviate from the densities encountered in dumpsters.

Second, the figures for *estimated annual tons of MSW* for each industry group were developed using a method that relied on *average waste density* figures during one step in the calculation procedure. An alternative statistical approach would have associated the density of the waste in each sample with the analysis of that sample as part of the larger composition calculation. If the latter approach had been taken, it is possible that the tonnage estimates for industry groups would have been different from those shown in Table 4. Moreover, it is likely that the error ranges for all of the commercial waste composition estimates shown in this report (in Tables 14 through 39 and Tables 49 through 66) would be somewhat larger than is shown.

2.2 COMPOSITION AND RELATED FINDINGS BY SECTOR

The objective of this portion of the analysis was to estimate the amounts of particular materials that are present in each sector of MSW. Composition is expressed in terms of percentages by weight. For example, Cascadia's estimate that *overall commercial MSW* is 5.9% comprised of *uncoated corrugated cardboard* (as shown in Table 14) means that 5.9% of the total weight of MSW disposed by the commercial sector is believed to be that material.

The error range that is provided with each composition estimate reflects the range within which there is 90% statistical probability that the *true* composition percent lies. For example, an error range of $\pm 1.6\%$ is shown in Table 14 for *uncoated corrugated cardboard* as part of *overall commercial MSW*. This means that there is 90% probability that the *true* composition percent lies within 1.6% of Cascadia's estimate. Thus, it is 90% likely that the *true* percent lies between 4.3% and 7.5%, and the *best estimate* within that range is 5.9%.

Two distinct methods were used to calculate composition percents and error ranges, depending on whether samples were obtained at disposal facilities, as with the single-family residential, C&D, and landscaping sectors, or at the sites of generation, as with the commercial and multifamily residential sectors. The methods are described thoroughly in Appendix A.

2.2.1 COMPOSITION OF SINGLE-FAMILY RESIDENTIAL WASTE

Composition results for single-family residential debris are illustrated in Figure 1 and described in detail in Table 5 and Table 6, and are based on 80 disposal-site samples. *other organic* and *paper* are the most prevalent material classes in single-family residential waste.

Figure 1: Overview of Single-Family Residential Waste

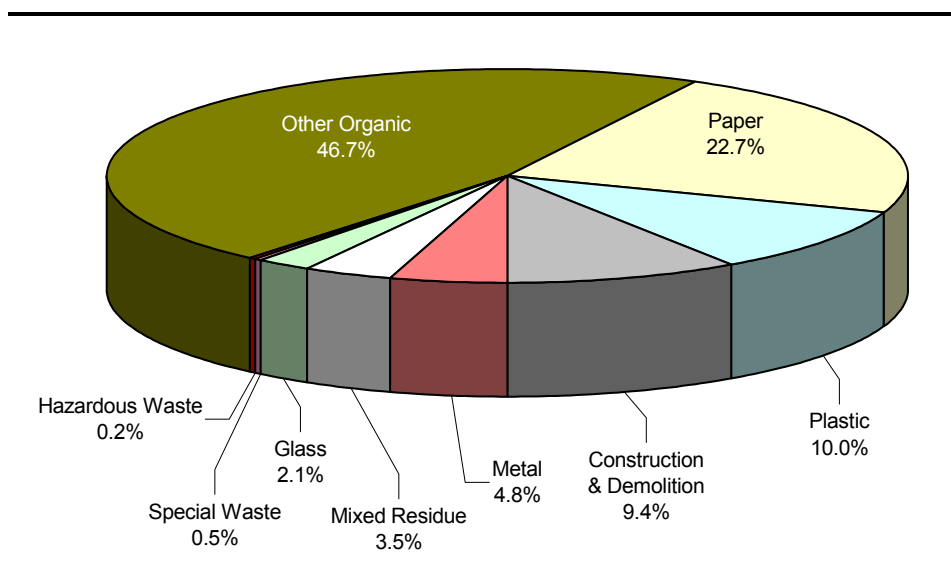


Table 5 shows the ten most prevalent materials in single-family residential waste. Several of these materials are generally considered to be recyclable from residential sources, including *food* (26.9% of single-family waste), *leaves & grass* (5.2%), *newspaper* (4.4%), and *prunings*

and trimmings (2.8%). Together these materials make up about 39% of Los Angeles' single-family residential waste, or about 339,751 tons.

Table 5: Ten Most Prevalent Materials in Single-Family Residential Waste

Material Type	Est. Pct.	Est. Tons	Cumulative Pct.
Food	26.9%	232,500	26.9%
Remainder/Composite Organic	8.6%	74,601	35.6%
Remainder/Composite Paper	7.4%	64,178	43.0%
Leaves & Grass	5.2%	45,041	48.2%
Other Miscellaneous Paper	4.9%	42,110	53.1%
Film Plastic	4.5%	38,603	57.6%
Newspaper	4.4%	37,989	61.9%
Mixed Residue	3.5%	30,430	65.5%
Lumber	3.5%	30,294	69.0%
Prunings & Trimmings	2.8%	24,221	71.8%

Note that two "Remainder/Composite" categories were prevalent in single-family residential waste. Some common items included in *remainder/composite organic* are leather items, carpets, garden hoses, and other rubber items. Some common items included in *remainder/composite paper* are waxed corrugated cardboard, aseptic packages, wax coated milk cartons, waxed paper, tissue, paper towels, fast food wrappers, and photographs.

Table 6: Composition of Single-Family Residential Waste

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	22.7%		196,175	Other Organic	46.7%		403,737
Uncoated Corrugated Cardboard	2.3%	0.4%	20,102	Food	26.9%	2.3%	232,500
Paper Bags	0.9%	0.1%	7,585	Leaves & Grass	5.2%	1.3%	45,041
Newspaper	4.4%	0.7%	37,989	Prunings & Trimmings	2.8%	0.8%	24,221
White Ledger Paper	0.7%	0.2%	5,904	Branches & Stumps	0.4%	0.5%	3,623
Colored Ledger Paper	0.0%	0.0%	360	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	61	Manures	0.0%	0.0%	0
Other Office Paper	0.5%	0.1%	4,516	Textiles	2.8%	0.5%	23,751
Magazines and Catalogs	1.3%	0.2%	11,314	Remainder/Composite Organic	8.6%	1.0%	74,601
Phone Books and Directories	0.2%	0.1%	2,057				
Other Miscellaneous Paper	4.9%	0.6%	42,110	Construction & Demolition	9.4%		81,188
Remainder/Composite Paper	7.4%	0.5%	64,178	Concrete	1.1%	0.6%	9,873
				Asphalt Paving	0.1%	0.1%	452
Glass	2.1%		18,330	Asphalt Roofing	0.2%	0.2%	1,360
Clear Glass Bottles & Containers	1.1%	0.2%	9,282	Lumber	3.5%	2.0%	30,294
Green Glass Bottles & Containers	0.4%	0.1%	3,605	Gypsum Board	0.6%	0.5%	5,414
Brown Glass Bottles & Containers	0.4%	0.1%	3,357	Rock, Soil & Fines	2.7%	1.0%	23,149
Other Colored Glass Bottles & Containers	0.1%	0.0%	486	Remainder/Composite C&D	1.2%	0.3%	10,645
Flat Glass	0.0%	0.0%	60				
Remainder/Composite Glass	0.2%	0.1%	1,541	Hazardous Waste	0.2%		1,416
				Paint	0.0%	0.0%	2
Metal	4.8%		41,336	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	1.4%	0.2%	11,901	Used Oil	0.1%	0.1%	436
Major Appliances	0.0%	0.0%	27	Batteries	0.1%	0.0%	523
Other Ferrous Metal	1.1%	0.5%	9,377	Remainder/Composite HW	0.1%	0.0%	455
Aluminum Cans	0.2%	0.1%	1,995				
Other Non-Ferrous Metal	0.2%	0.0%	1,872	Special Waste	0.5%		4,428
Remainder/Composite Metal	1.4%	0.5%	12,317	Ash	0.1%	0.1%	708
Electronics	0.4%	0.5%	3,847	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	10.0%		86,601	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.7%	0.1%	5,798	Bulky Items	0.3%	0.5%	2,445
PETE Containers	0.6%	0.1%	5,293	Tires	0.0%	0.0%	16
Miscellaneous Plastic Containers	0.6%	0.1%	4,919	Remainder/Composite Special Waste	0.1%	0.1%	1,259
Film Plastic	4.5%	0.4%	38,603				
Durable Plastic Items	1.1%	0.4%	9,559	Mixed Residue	3.5%	0.5%	30,430
Remainder/Composite Plastic	2.6%	0.5%	22,429				
				Totals	100.0%		863,640
				Sample count:	80		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

2.2.2 COMPOSITION OF MULTIFAMILY RESIDENTIAL WASTE

The composition of multifamily waste is presented in overview in Figure 2 and is presented in detail in Table 7 and Table 8. Multifamily waste composition estimates were developed by analyzing 89 samples obtained between November 2000 and July 2001. As with the commercial sector, a generator sampling approach was used to collect composition and quantity data for the multifamily sector. As with commercial generators, the estimated waste disposal for each site was used as a weighting factor to reflect the relative importance of the sample from that site in the composition analysis.

Figure 2: Overview of Multifamily Residential Waste

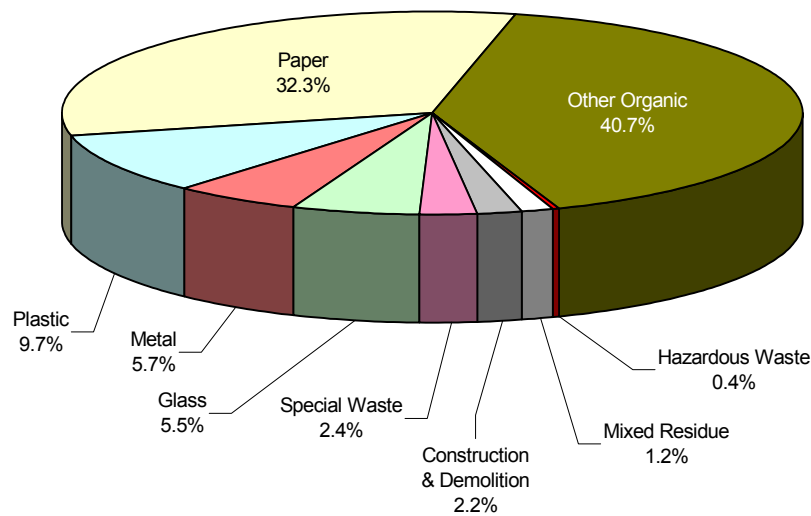


Table 7 indicates the materials that are most prevalent in multifamily waste. Of those, the ones that typically are assumed to be fairly recoverable from residential waste include *food* (27.0%), *newspaper* (9.9%), *uncoated corrugated cardboard* (3.2%), *magazines and catalogs* (3.0%), *clear glass bottles and containers* (2.8%), and *leaves and grass* (2.5%). Together, these materials make up approximately 48.4% of the multifamily waste stream by weight, and they represent approximately 267,507 tons of solid waste that is disposed annually. It is important to note that some multifamily waste passes through recovery facilities prior to final disposal, and some of the material discussed above is in fact recovered.

Table 7: Overview of Multifamily Residential Waste

Material Type	Est. Pct.	Est. Tons	Cumulative Pct.
Food	27.0%	148,952	27.0%
Newspaper	9.9%	54,812	36.9%
Remainder/Composite Organic	8.0%	43,879	44.9%
Remainder/Composite Paper	7.1%	39,289	52.0%
Other Miscellaneous Paper	5.1%	28,111	57.1%
Film Plastic	3.5%	19,380	60.6%
Uncoated Corrugated Cardboard	3.2%	17,711	63.8%
Magazines and Catalogs	3.0%	16,531	66.8%
Clear Glass Bottles & Containers	2.8%	15,469	69.6%
Leaves and Grass	2.5%	14,032	72.1%

Note that two “Remainder/Composite” categories were prevalent in multifamily residential waste. Some common items included in *remainder/composite organic* are leather items, carpets, garden hoses, and other rubber items. Some common items included in *remainder/composite paper* are waxed corrugated cardboard, aseptic packages, wax coated milk cartons, waxed paper, tissue, paper towels, fast food wrappers, and photographs.

Table 8: Composition of Multifamily Residential Waste

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	32.3%	3.3%	178,255	Other Organic	40.7%	3.4%	224,505
Uncoated Corrugated Cardboard	3.2%	0.5%	17,711	Food	27.0%	2.8%	148,952
Paper Bags	1.1%	0.2%	6,341	Leaves & Grass	2.5%	1.4%	14,032
Newspaper	9.9%	1.8%	54,812	Prunings & Trimmings	0.5%	0.5%	3,023
White Ledger Paper	1.2%	0.3%	6,686	Branches & Stumps	0.1%	0.2%	661
Colored Ledger Paper	0.1%	0.0%	516	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	470	Manures	0.0%	0.0%	0
Other Office Paper	1.1%	0.8%	6,258	Textiles	2.5%	0.8%	13,959
Magazines and Catalogs	3.0%	0.9%	16,531	Remainder/Composite Organic	8.0%	1.6%	43,879
Phone Books and Directories	0.3%	0.2%	1,530				
Other Miscellaneous Paper	5.1%	0.7%	28,111	Construction & Demolition	2.2%	0.8%	11,904
Remainder/Composite Paper	7.1%	0.7%	39,289	Concrete	0.1%	0.2%	772
				Asphalt Paving	0.0%	0.0%	0
Glass	5.5%	0.8%	30,426	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	2.8%	0.5%	15,469	Lumber	0.7%	0.5%	3,859
Green Glass Bottles & Containers	1.4%	0.4%	7,687	Gypsum Board	0.1%	0.1%	350
Brown Glass Bottles & Containers	0.8%	0.2%	4,306	Rock, Soil & Fines	0.2%	0.2%	1,190
Other Colored Glass Bottles & Containers	0.0%	0.0%	108	Remainder/Composite C&D	1.0%	0.5%	5,733
Flat Glass	0.0%	0.0%	131				
Remainder/Composite Glass	0.5%	0.1%	2,724	Hazardous Waste	0.4%	0.3%	2,019
				Paint	0.1%	0.1%	456
Metal	5.7%	2.1%	31,561	Vehicle & Equipment Fluids	0.0%	0.0%	121
Tin/Steel Cans	1.1%	0.1%	5,881	Used Oil	0.2%	0.2%	1,005
Major Appliances	0.0%	0.1%	204	Batteries	0.1%	0.0%	316
Other Ferrous Metal	0.5%	0.2%	2,497	Remainder/Composite HW	0.0%	0.0%	120
Aluminum Cans	0.4%	0.1%	2,029				
Other Non-Ferrous Metal	0.3%	0.1%	1,803	Special Waste	2.4%	1.8%	13,032
Remainder/Composite Metal	1.7%	1.2%	9,478	Ash	0.0%	0.0%	126
Electronics	1.8%	1.9%	9,669	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	9.7%	0.9%	53,294	Treated Medical Waste	0.0%	0.0%	15
HDPE Containers	1.2%	0.2%	6,486	Bulky Items	2.3%	1.8%	12,687
PETE Containers	0.9%	0.1%	5,145	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.8%	0.1%	4,140	Remainder/Composite Special Waste	0.0%	0.1%	204
Film Plastic	3.5%	0.4%	19,380				
Durable Plastic Items	1.3%	0.4%	7,389	Mixed Residue	1.2%	0.3%	6,655
Remainder/Composite Plastic	1.9%	0.3%	10,755				
				Totals	100.0%		551,650
				Sample count:	89		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

2.2.3 COMPOSITION OF CONSTRUCTION AND DEMOLITION WASTE

Composition results for construction and demolition debris are illustrated in Figure 3 and described in detail in Table 9 and Table 10, and are derived from 160 disposal-site samples. The overall commercial waste composition estimates were developed by aggregating data from the construction and demolition subsectors: inert C&D disposed at dedicated inert landfills and C&D waste disposed at other landfills and transfer stations serving the City of Los Angeles. Waste composition estimates for these two subsectors appear in Appendix C.

Figure 3: Overview of Construction and Demolition Waste

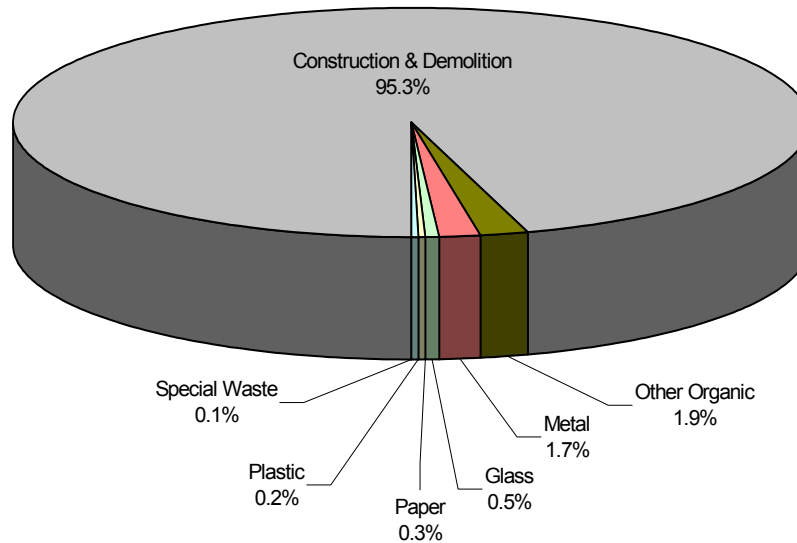


Table 9 shows the ten most prevalent materials in construction and demolition waste. Depending on local programs, market conditions, and material purity, most if not all of these top ten materials are recoverable. Together, these materials comprise almost all of Los Angeles' construction and demolition waste, for a total of over 450,000 tons in 2001.

Table 9: Ten Most Prevalent Materials in Construction and Demolition Waste

Material Type	Est. Pct.	Est. Tons	Cumulative Pct.
Concrete	32.5%	152,543	32.5%
Rock, Soil & Fines	30.8%	144,588	63.4%
Asphalt Paving	11.8%	55,223	75.1%
Lumber	6.9%	32,278	82.0%
Asphalt Roofing	5.6%	26,424	87.7%
Remainder/Composite C&D	5.5%	25,626	93.1%
Gypsum Board	2.2%	10,397	95.3%
Other Ferrous Metal	1.3%	5,864	96.6%
Remainder/Composite Organic	0.8%	3,785	97.4%
Prunings & Trimmings	0.5%	2,251	97.9%

Note that some common items included as *remainder/composite C&D* are brick, ceramics, tiles, toilets, sinks, and fiberglass insulation, as well as mixtures of various materials.

2.2.4 COMPOSITION OF LANDSCAPING WASTE

Composition results for landscaping debris are illustrated in Figure 4 and described in detail in Table 11 and Table 12, and are derived from 83 disposal-site samples. As these tables and figures show, organic material makes up the majority of landscaping waste.

Figure 4: Overview of Landscaping Waste

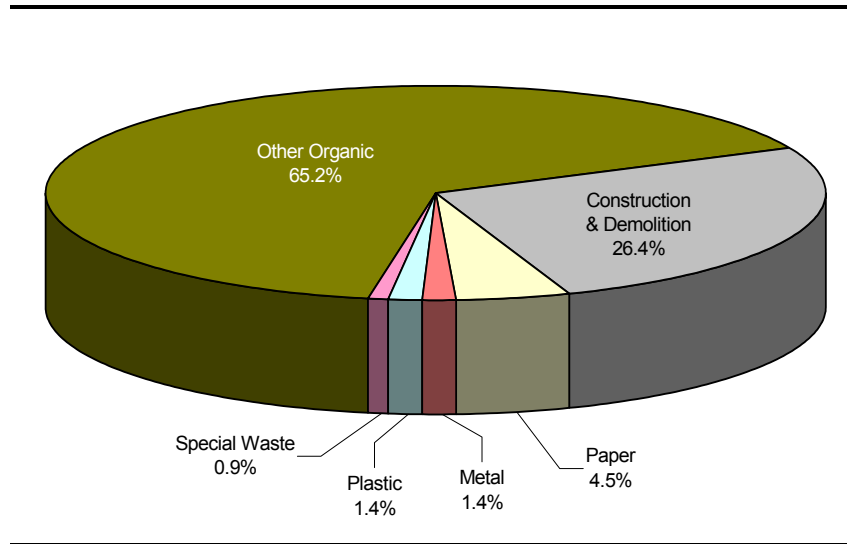


Table 11 shows the ten most prevalent materials in landscaping waste. Depending on local programs, market conditions, and material purity, most if not all of these top ten materials are recoverable. Together, these materials comprise about 96% of landscaping waste, for a total of almost 30,000 tons annually.

Table 11: Ten Most Prevalent Materials in Landscaping Waste

Material Type	Est. Pct.	Est. Tons	Cumulative Pct.
Prunings & Trimmings	33.7%	10,499	33.7%
Leaves & Grass	19.9%	6,208	53.6%
Branches & Stumps	11.3%	3,523	64.9%
Lumber	8.8%	2,734	73.6%
Concrete	6.7%	2,085	80.3%
Rock, Soil & Fines	5.4%	1,692	85.7%
Remainder/Composite C&D	5.0%	1,565	90.7%
Newspaper	3.8%	1,180	94.5%
Bulky Items	0.8%	259	95.4%
Other Ferrous Metal	0.8%	246	96.1%

Note that landscaping waste contained about 5.0% *remainder/composite C&D*; this material commonly includes items such as brick, ceramics, tiles, toilets, sinks, and fiberglass insulation, as well as mixtures of various C&D materials.

Table 12: Composition of Landscaping Waste

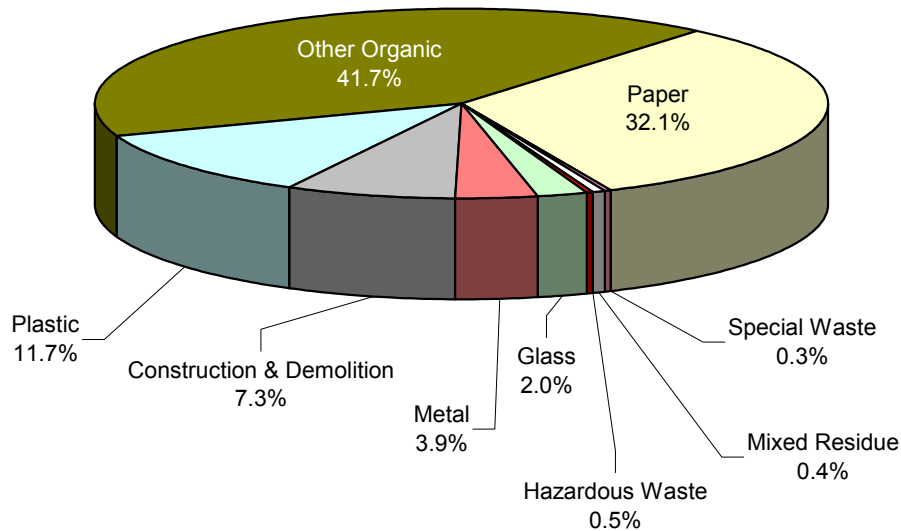
	Est. Pct.	+ / -	Est. Tons	Est. Pct.	+ / -	Est. Tons
Paper			1,419	65.2%		20,337
Uncoated Corrugated Cardboard	4.5%	0.4%	175	0.0%	0.0%	2
Paper Bags	0.0%	0.0%	1	19.9%	9.1%	6,208
Newspaper	3.8%	6.1%	1,180	33.7%	11.4%	10,499
White Ledger Paper	0.0%	0.0%	1	11.3%	6.1%	3,523
Colored Ledger Paper	0.0%	0.0%	0	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0	0.0%	0.0%	0
Other Office Paper	0.0%	0.0%	0	0.1%	0.1%	20
Magazines and Catalogs	0.0%	0.0%	11	0.3%	0.2%	85
Phone Books and Directories	0.0%	0.0%	0			
Other Miscellaneous Paper	0.0%	0.0%	7			
Remainder/Composite Paper	0.1%	0.2%	44			
				26.4%		8,249
Glass						
Clear Glass Bottles & Containers	0.0%	0.0%	5	6.7%	4.5%	2,085
Green Glass Bottles & Containers	0.0%	0.0%	4	0.1%	0.2%	43
Brown Glass Bottles & Containers	0.0%	0.0%	0	0.0%	0.1%	15
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	8.8%	4.5%	2,734
Flat Glass	0.0%	0.0%	0	0.4%	0.4%	114
Remainder/Composite Glass	0.0%	0.0%	0	5.4%	4.7%	1,692
				5.0%	3.0%	1,565
				0.0%		5
Metal						
Tin/Steel Cans	1.4%	0.0%	448	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	2	0.0%	0.0%	0
Other Ferrous Metal	0.5%	0.7%	141	0.0%	0.0%	5
Aluminum Cans	0.8%	0.6%	246	0.0%	0.0%	0
Other Non-Ferrous Metal	0.0%	0.0%	2	0.0%	0.0%	0
Remainder/Composite Metal	0.1%	0.1%	45	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	0.0%	0.0%	0
				0.9%		281
Plastic						
HDPE Containers	1.4%	0.2%	430	0.0%	0.0%	0
PETE Containers	0.0%	0.0%	44	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.0%	0.0%	3	0.0%	0.0%	0
Film Plastic	0.1%	0.2%	1	0.8%	1.0%	259
Durable Plastic Items	0.5%	0.3%	39	0.0%	0.0%	0
Remainder/Composite Plastic	0.6%	0.9%	141	0.1%	0.1%	22
				0.1%		18
Totals				100.0%		31,193
Sample count:						83

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

2.2.5 COMPOSITION OF COMMERCIAL WASTE

Composition results for commercial MSW are illustrated in Figure 5 and described in detail in Table 13 and Table 14. The overall commercial waste composition estimates were developed by aggregating data from each of the 25 industry groups, with a total of 900 samples. Waste composition estimates for the 25 industry groups appear in Tables 15 through 39. In addition, Appendix B contains composition estimates for industry subgroups that were aggregated for the purpose of this study.

Figure 5: Overview of Commercial Waste



As indicated in Table 13, materials that are present in large amounts and that also are typically assumed to be relatively recoverable include *food* (29.2% of commercial waste), *uncoated corrugated cardboard* (5.9%), *film plastic* (5.5%), *lumber* (4.3%, often in the form of pallets), and *white ledger paper* (3.6%). Together, these materials make up approximately 48.5% of the commercial waste stream by weight, and they represent approximately 790,000 tons of solid waste disposed annually by Los Angeles's commercial sector.

Table 13: Ten Most Prevalent Materials in Commercial Waste

Material Type	Est. Pct.	Est. Tons	Cumulative Pct.
Food	29.2%	475,477	29.2%
Remainder/Composite Paper	10.2%	165,591	39.4%
Uncoated Corrugated Cardboard	5.9%	96,550	45.3%
Film Plastic	5.5%	89,537	50.8%
Remainder/Composite Organic Waste	5.3%	86,604	56.1%
Textiles	4.6%	74,413	60.7%
Lumber	4.3%	69,819	65.0%
Other Miscellaneous Paper	3.9%	63,101	68.9%
White Ledger Paper	3.6%	59,145	72.5%
Remainder/Composite Plastic	3.4%	54,645	75.9%

Table 14: Composition of Overall Commercial Waste

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	32.1%	3.7%	523,581	Other Organic	41.7%	4.6%	678,601
Uncoated Corrugated Cardboard	5.9%	1.6%	96,550	Food	29.2%	5.2%	475,477
Paper Bags	0.6%	0.2%	10,489	Leaves & Grass	1.9%	0.9%	31,158
Newspaper	2.8%	0.5%	46,216	Prunings & Trimmings	0.7%	0.4%	10,948
White Ledger Paper	3.6%	0.7%	59,145	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.1%	2,589	Agricultural Crop Residues	0.0%	0.0%	1
Computer Paper	0.5%	0.2%	7,877	Manures	0.0%	0.0%	0
Other Office Paper	2.7%	1.2%	43,441	Textiles	4.6%	1.4%	74,413
Magazines and Catalogs	1.6%	0.4%	26,409	Remainder/Composite Organic	5.3%	2.5%	86,604
Phone Books and Directories	0.1%	0.1%	2,173				
Other Miscellaneous Paper	3.9%	0.8%	63,101	Construction & Demolition	7.3%	1.6%	119,004
Remainder/Composite Paper	10.2%	1.5%	165,591	Concrete	1.0%	0.8%	16,793
				Asphalt Paving	0.1%	0.1%	2,191
Glass	2.0%	0.6%	33,302	Asphalt Roofing	0.0%	0.0%	189
Clear Glass Bottles & Containers	0.9%	0.2%	13,911	Lumber	4.3%	1.3%	69,819
Green Glass Bottles & Containers	0.5%	0.3%	8,509	Gypsum Board	0.0%	0.1%	764
Brown Glass Bottles & Containers	0.2%	0.1%	3,240	Rock, Soil & Fines	0.3%	0.1%	4,271
Other Colored Glass Bottles & Containers	0.0%	0.0%	26	Remainder/Composite C&D	1.5%	0.6%	24,978
Flat Glass	0.2%	0.2%	3,557				
Remainder/Composite Glass	0.2%	0.1%	4,060	Hazardous Waste	0.5%	0.3%	7,731
				Paint	0.1%	0.1%	1,417
Metal	3.9%	1.1%	62,941	Vehicle & Equipment Fluids	0.0%	0.0%	16
Tin/Steel Cans	1.3%	0.9%	20,569	Used Oil	0.0%	0.0%	208
Major Appliances	0.1%	0.3%	1,821	Batteries	0.0%	0.0%	773
Other Ferrous Metal	1.1%	0.3%	17,677	Remainder/Composite HW	0.3%	0.2%	5,317
Aluminum Cans	0.3%	0.1%	4,332				
Other Non-Ferrous Metal	0.2%	0.0%	2,952	Special Waste	0.3%	0.2%	5,546
Remainder/Composite Metal	0.8%	0.3%	13,490	Ash	0.1%	0.1%	1,063
Electronics	0.1%	0.1%	2,100	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.7%	1.6%	191,273	Treated Medical Waste	0.0%	0.0%	230
HDPE Containers	0.7%	0.3%	10,851	Bulky Items	0.1%	0.1%	2,377
PETE Containers	0.5%	0.1%	8,306	Tires	0.0%	0.0%	315
Miscellaneous Plastic Containers	0.6%	0.1%	9,307	Remainder/Composite Special Waste	0.1%	0.1%	1,561
Film Plastic	5.5%	0.9%	89,537				
Durable Plastic Items	1.1%	0.4%	18,627	Mixed Residue	0.4%	0.1%	7,251
Remainder/Composite Plastic	3.4%	0.7%	54,645				
				Totals	100.0%		1,629,231
				Sample count:	900		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 15: Composition of Waste from Group 1, Services -- Other

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	36.3%	5.5%	47,104	Other Organic	30.2%	6.2%	39,280
Uncoated Corrugated Cardboard	4.5%	1.6%	5,862	Food	13.2%	5.6%	17,092
Paper Bags	0.7%	0.3%	973	Leaves & Grass	2.2%	3.2%	2,826
Newspaper	4.1%	1.7%	5,266	Prunings & Trimmings	0.0%	0.0%	5
White Ledger Paper	5.6%	2.7%	7,284	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.2%	324	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.2%	0.2%	227	Manures	0.0%	0.0%	0
Other Office Paper	1.8%	0.7%	2,309	Textiles	5.7%	5.3%	7,360
Magazines and Catalogs	3.3%	1.8%	4,337	Remainder/Composite Organic	9.2%	4.9%	11,996
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	4.4%	1.1%	5,718	Construction & Demolition	3.8%	3.9%	4,918
Remainder/Composite Paper	11.4%	2.2%	14,805	Concrete	0.0%	0.1%	55
				Asphalt Paving	0.0%	0.0%	0
Glass	2.1%	0.6%	2,760	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.3%	0.8%	1,743	Lumber	1.7%	2.7%	2,240
Green Glass Bottles & Containers	0.1%	0.1%	139	Gypsum Board	0.5%	0.8%	599
Brown Glass Bottles & Containers	0.1%	0.1%	85	Rock, Soil & Fines	0.2%	0.3%	249
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	1.4%	1.7%	1,776
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.6%	0.5%	793	Hazardous Waste	0.5%	0.8%	585
				Paint	0.0%	0.0%	17
Metal	5.8%	5.6%	7,538	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.7%	0.5%	944	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	17
Other Ferrous Metal	1.8%	1.9%	2,355	Remainder/Composite HW	0.4%	0.7%	551
Aluminum Cans	0.3%	0.3%	446				
Other Non-Ferrous Metal	0.4%	0.3%	530	Special Waste	0.7%	1.3%	934
Remainder/Composite Metal	2.2%	2.8%	2,802	Ash	0.7%	1.4%	934
Electronics	0.4%	0.7%	461	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	19.4%	5.0%	25,222	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	2.5%	2.5%	3,241	Bulky Items	0.0%	0.0%	0
PETE Containers	0.8%	0.4%	1,097	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.8%	0.3%	1,028	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	8.1%	2.9%	10,582				
Durable Plastic Items	1.0%	0.8%	1,304	Mixed Residue	1.2%	0.5%	1,525
Remainder/Composite Plastic	6.1%	3.8%	7,970				
				Totals	100.0%		129,866
				Sample count:	44		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 16: Composition of Waste from Group 2, Services – Medical and Health

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	42.7%	7.3%	42,188	Other Organic	38.2%	10.0%	37,753
Uncoated Corrugated Cardboard	8.0%	3.8%	7,865	Food	20.6%	8.2%	20,379
Paper Bags	0.3%	0.2%	307	Leaves & Grass	1.6%	3.6%	1,612
Newspaper	4.3%	1.5%	4,243	Prunings & Trimmings	0.2%	0.5%	191
White Ledger Paper	3.7%	2.6%	3,624	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.0%	69	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.2%	0.2%	177	Manures	0.0%	0.0%	0
Other Office Paper	1.7%	1.2%	1,671	Textiles	5.0%	6.7%	4,958
Magazines and Catalogs	3.9%	5.3%	3,816	Remainder/Composite Organic	10.7%	3.0%	10,612
Phone Books and Directories	1.1%	2.7%	1,107				
Other Miscellaneous Paper	3.4%	1.0%	3,361	Construction & Demolition	0.2%	0.3%	207
Remainder/Composite Paper	16.1%	4.5%	15,948	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.0%	0.8%	1,023	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.8%	0.9%	779	Lumber	0.2%	0.4%	162
Green Glass Bottles & Containers	0.0%	0.0%	8	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.1%	63	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.1%	44
Flat Glass	0.1%	0.4%	131				
Remainder/Composite Glass	0.0%	0.1%	43	Hazardous Waste	3.9%	4.5%	3,826
				Paint	0.3%	1.0%	259
Metal	1.9%	1.1%	1,835	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	1.0%	0.7%	952	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.1%	40
Other Ferrous Metal	0.2%	0.6%	189	Remainder/Composite HW	3.6%	6.4%	3,527
Aluminum Cans	0.2%	0.2%	233				
Other Non-Ferrous Metal	0.2%	0.1%	151	Special Waste	0.8%	0.8%	743
Remainder/Composite Metal	0.2%	0.5%	213	Ash	0.0%	0.0%	0
Electronics	0.1%	0.2%	96	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.1%	1.4%	10,942	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.6%	0.5%	621	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.4%	394	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.5%	0.7%	1,531	Remainder/Composite Special Waste	0.8%	0.8%	743
Film Plastic	4.4%	1.1%	4,386				
Durable Plastic Items	1.8%	1.5%	1,736	Mixed Residue	0.3%	0.3%	320
Remainder/Composite Plastic	2.3%	0.9%	2,273				
				Totals	100.0%		98,837
				Sample count:	34		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 17: Composition of Waste from Group 3, Finance, Insurance and Real Estate

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	61.3%	14.7%	34,989	Other Organic	20.6%	14.1%	11,781
Uncoated Corrugated Cardboard	3.6%	1.6%	2,028	Food	16.8%	16.3%	9,574
Paper Bags	0.5%	0.1%	291	Leaves & Grass	1.1%	1.5%	616
Newspaper	4.8%	1.9%	2,722	Prunings & Trimmings	0.0%	0.0%	16
White Ledger Paper	21.4%	6.4%	12,190	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.3%	0.2%	156	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.1%	15	Manures	0.0%	0.0%	0
Other Office Paper	7.1%	4.5%	4,038	Textiles	0.1%	0.3%	42
Magazines and Catalogs	2.8%	1.5%	1,614	Remainder/Composite Organic	2.7%	6.2%	1,532
Phone Books and Directories	0.1%	0.6%	83				
Other Miscellaneous Paper	3.6%	0.9%	2,056	Construction & Demolition	3.6%	3.7%	2,059
Remainder/Composite Paper	17.2%	4.6%	9,796	Concrete	0.0%	0.0%	0
				Asphalt Paving	3.5%	4.6%	1,979
Glass	0.6%	0.4%	357	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.5%	0.3%	285	Lumber	0.1%	0.4%	59
Green Glass Bottles & Containers	0.1%	0.3%	62	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	3	Rock, Soil & Fines	0.0%	0.1%	9
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.1%	12
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	7	Hazardous Waste	0.3%	0.3%	167
				Paint	0.0%	0.0%	0
Metal	3.2%	1.7%	1,818	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.2%	0.2%	122	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.3%	0.4%	166
Other Ferrous Metal	1.5%	1.7%	865	Remainder/Composite HW	0.0%	0.0%	1
Aluminum Cans	0.7%	0.4%	404				
Other Non-Ferrous Metal	0.1%	0.0%	56	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.5%	0.5%	293	Ash	0.0%	0.0%	0
Electronics	0.1%	0.4%	77	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	10.0%	3.2%	5,724	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.2%	85	Bulky Items	0.0%	0.0%	0
PETE Containers	2.0%	1.8%	1,113	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.5%	0.2%	311	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.7%	1.4%	2,675				
Durable Plastic Items	0.6%	0.4%	369	Mixed Residue	0.3%	0.2%	155
Remainder/Composite Plastic	2.1%	1.0%	1,172				
				Totals	100.0%		57,049
				Sample count:	24		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 18: Composition of Waste from Group 4, Retail -- Restaurants

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	16.7%	8.0%	43,690	Other Organic	63.9%	7.0%	166,856
Uncoated Corrugated Cardboard	3.2%	1.8%	8,289	Food	62.2%	6.2%	162,506
Paper Bags	0.8%	0.9%	2,208	Leaves & Grass	0.0%	0.0%	0
Newspaper	1.7%	1.3%	4,369	Prunings & Trimmings	0.3%	0.3%	774
White Ledger Paper	0.3%	0.3%	726	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	21	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.2%	0.2%	576	Manures	0.0%	0.0%	0
Other Office Paper	0.2%	0.1%	442	Textiles	0.5%	0.4%	1,261
Magazines and Catalogs	0.2%	0.2%	521	Remainder/Composite Organic	0.9%	0.3%	2,315
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	1.5%	0.7%	3,789	Construction & Demolition	0.7%	0.9%	1,840
Remainder/Composite Paper	8.7%	4.3%	22,749	Concrete	0.1%	0.3%	298
				Asphalt Paving	0.0%	0.0%	0
Glass	2.2%	1.0%	5,622	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.5%	0.8%	1,427	Lumber	0.0%	0.0%	22
Green Glass Bottles & Containers	1.3%	1.0%	3,285	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.3%	371	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.6%	0.5%	1,520
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.2%	0.2%	538	Hazardous Waste	0.0%	0.0%	0
				Paint	0.0%	0.0%	0
Metal	7.2%	5.2%	18,845	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	5.8%	5.7%	15,053	Used Oil	0.0%	0.0%	0
Major Appliances	0.7%	2.7%	1,800	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.1%	0.1%	315	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.4%	0.4%	1,134				
Other Non-Ferrous Metal	0.2%	0.1%	476	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.0%	0.1%	67	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	9.2%	3.0%	24,053	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.5%	0.3%	1,379	Bulky Items	0.0%	0.0%	0
PETE Containers	0.3%	0.2%	745	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.8%	0.5%	2,060	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	5.1%	1.4%	13,380				
Durable Plastic Items	0.5%	0.4%	1,211	Mixed Residue	0.1%	0.1%	202
Remainder/Composite Plastic	2.0%	1.8%	5,278				
				Totals	100.0%		261,108
				Sample count:	27		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 19: Composition of Waste from Group 5, Services -- Business

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	73.0%	25.8%	32,032	Other Organic	15.9%	13.6%	6,991
Uncoated Corrugated Cardboard	6.0%	1.8%	2,634	Food	2.6%	3.6%	1,134
Paper Bags	0.3%	0.5%	137	Leaves & Grass	5.7%	5.7%	2,516
Newspaper	2.0%	2.6%	894	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	7.3%	9.5%	3,200	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	41	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.2%	3.3%	540	Manures	0.0%	0.0%	0
Other Office Paper	45.0%	39.6%	19,772	Textiles	3.7%	9.4%	1,604
Magazines and Catalogs	2.3%	3.5%	1,010	Remainder/Composite Organic	4.0%	6.0%	1,737
Phone Books and Directories	0.0%	0.1%	6				
Other Miscellaneous Paper	3.5%	4.9%	1,519	Construction & Demolition	1.9%	4.7%	828
Remainder/Composite Paper	5.2%	7.1%	2,277	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.1%	1.8%	493	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.9%	1.3%	387	Lumber	1.4%	5.0%	615
Green Glass Bottles & Containers	0.2%	0.5%	72	Gypsum Board	0.1%	0.3%	26
Brown Glass Bottles & Containers	0.1%	0.2%	31	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.4%	1.7%	187
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	3	Hazardous Waste	0.1%	0.4%	59
				Paint	0.0%	0.0%	0
Metal	1.9%	0.6%	851	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.2%	50	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	1
Other Ferrous Metal	0.2%	0.3%	73	Remainder/Composite HW	0.1%	0.5%	57
Aluminum Cans	0.3%	0.5%	121				
Other Non-Ferrous Metal	0.1%	0.1%	22	Special Waste	0.3%	1.4%	138
Remainder/Composite Metal	0.0%	0.1%	18	Ash	0.0%	0.0%	0
Electronics	1.3%	1.3%	566	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	5.4%	9.4%	2,367	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.3%	55	Bulky Items	0.3%	1.1%	138
PETE Containers	0.2%	0.3%	87	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.4%	106	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	2.0%	2.8%	890				
Durable Plastic Items	1.7%	5.6%	726	Mixed Residue	0.3%	0.7%	142
Remainder/Composite Plastic	1.1%	0.7%	503				
				Totals	100.0%		43,900
				Sample count:	25		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 20: Composition of Waste from Group 6, Services -- Education

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	37.2%	14.8%	23,572	Other Organic	46.9%	20.3%	29,707
Uncoated Corrugated Cardboard	3.1%	1.4%	1,995	Food	44.6%	23.6%	28,248
Paper Bags	0.5%	0.4%	320	Leaves & Grass	0.2%	0.3%	148
Newspaper	3.2%	2.8%	2,001	Prunings & Trimmings	0.0%	0.0%	9
White Ledger Paper	5.7%	3.6%	3,625	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.6%	0.8%	382	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	62	Manures	0.0%	0.0%	0
Other Office Paper	1.5%	0.9%	971	Textiles	0.5%	0.5%	346
Magazines and Catalogs	1.1%	1.3%	690	Remainder/Composite Organic	1.5%	1.1%	956
Phone Books and Directories	0.0%	0.1%	8				
Other Miscellaneous Paper	6.7%	4.0%	4,233	Construction & Demolition	1.4%	1.4%	892
Remainder/Composite Paper	14.7%	6.2%	9,287	Concrete	0.0%	0.1%	8
				Asphalt Paving	0.0%	0.0%	0
Glass	1.1%	0.7%	687	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.0%	0.6%	635	Lumber	0.2%	0.2%	124
Green Glass Bottles & Containers	0.1%	0.1%	32	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	12	Rock, Soil & Fines	1.1%	1.5%	685
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.1%	0.3%	74
Flat Glass	0.0%	0.0%	1				
Remainder/Composite Glass	0.0%	0.0%	7	Hazardous Waste	0.0%	0.0%	16
				Paint	0.0%	0.0%	2
Metal	1.1%	0.6%	705	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.3%	0.3%	203	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	9
Other Ferrous Metal	0.0%	0.0%	8	Remainder/Composite HW	0.0%	0.0%	5
Aluminum Cans	0.3%	0.2%	180				
Other Non-Ferrous Metal	0.2%	0.1%	152	Special Waste	0.8%	1.4%	510
Remainder/Composite Metal	0.2%	0.5%	110	Ash	0.0%	0.0%	0
Electronics	0.1%	0.2%	51	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.2%	4.5%	7,125	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.3%	0.2%	208	Bulky Items	0.0%	0.0%	0
PETE Containers	1.3%	1.5%	811	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.5%	0.2%	329	Remainder/Composite Special Waste	0.8%	1.9%	510
Film Plastic	5.9%	2.5%	3,740				
Durable Plastic Items	0.7%	0.2%	424	Mixed Residue	0.2%	0.2%	156
Remainder/Composite Plastic	2.5%	1.3%	1,612				
				Totals	100.0%		63,370
				Sample count:	38		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 21: Composition of Waste from Group 7, Retail -- Remainder

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	40.5%	15.2%	44,424	Other Organic	17.2%	12.3%	18,862
Uncoated Corrugated Cardboard	16.3%	13.1%	17,894	Food	5.5%	2.2%	6,066
Paper Bags	0.4%	0.2%	466	Leaves & Grass	0.8%	0.9%	913
Newspaper	3.5%	2.0%	3,833	Prunings & Trimmings	0.0%	0.0%	15
White Ledger Paper	1.9%	1.4%	2,042	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.3%	0.3%	286	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.1%	1.1%	1,256	Manures	0.0%	0.0%	0
Other Office Paper	1.1%	0.7%	1,191	Textiles	1.4%	1.4%	1,510
Magazines and Catalogs	0.9%	0.4%	981	Remainder/Composite Organic	9.4%	11.5%	10,358
Phone Books and Directories	0.1%	0.1%	73				
Other Miscellaneous Paper	6.6%	2.1%	7,199	Construction & Demolition	15.6%	10.6%	17,127
Remainder/Composite Paper	8.4%	4.5%	9,205	Concrete	1.2%	1.3%	1,298
				Asphalt Paving	0.0%	0.0%	0
Glass	1.5%	0.7%	1,636	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.8%	0.3%	858	Lumber	13.0%	10.7%	14,256
Green Glass Bottles & Containers	0.3%	0.3%	286	Gypsum Board	0.0%	0.0%	25
Brown Glass Bottles & Containers	0.0%	0.0%	32	Rock, Soil & Fines	1.0%	1.1%	1,048
Other Colored Glass Bottles & Containers	0.0%	0.0%	3	Remainder/Composite C&D	0.5%	0.4%	500
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.4%	0.4%	458	Hazardous Waste	0.4%	0.3%	406
				Paint	0.0%	0.0%	1
Metal	5.3%	2.2%	5,873	Vehicle & Equipment Fluids	0.0%	0.0%	15
Tin/Steel Cans	0.4%	0.4%	426	Used Oil	0.1%	0.3%	148
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.0%	91
Other Ferrous Metal	2.1%	1.1%	2,285	Remainder/Composite HW	0.1%	0.2%	151
Aluminum Cans	0.3%	0.3%	361				
Other Non-Ferrous Metal	0.4%	0.4%	454	Special Waste	0.2%	0.4%	237
Remainder/Composite Metal	2.1%	1.5%	2,347	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	18.6%	6.0%	20,462	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.6%	0.3%	617	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.2%	444	Tires	0.2%	0.5%	237
Miscellaneous Plastic Containers	0.6%	0.4%	621	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	6.9%	3.1%	7,577				
Durable Plastic Items	4.0%	3.7%	4,388	Mixed Residue	0.7%	0.6%	754
Remainder/Composite Plastic	6.2%	3.0%	6,815				
				Totals	100.0%		109,781
				Sample count:	62		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 22: Composition of Waste from Group 8, Wholesale Trade – Durable Goods

	Est. Pct.	+ / -	Est. Tons	Other Organic	Est. Pct.	+ / -	Est. Tons
Paper	31.8%	12.8%	16,777	Other Organic	15.3%	9.7%	8,048
Uncoated Corrugated Cardboard	4.6%	3.5%	2,414	Food	5.1%	3.3%	2,705
Paper Bags	0.8%	0.9%	418	Leaves & Grass	1.0%	2.1%	517
Newspaper	2.5%	1.9%	1,322	Prunings & Trimmings	0.0%	0.0%	2
White Ledger Paper	3.3%	2.2%	1,724	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.6%	109	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.4%	0.9%	221	Manures	0.0%	0.0%	0
Other Office Paper	2.3%	1.7%	1,203	Textiles	3.9%	4.7%	2,081
Magazines and Catalogs	2.3%	2.2%	1,216	Remainder/Composite Organic	5.2%	5.4%	2,743
Phone Books and Directories	0.0%	0.1%	8				
Other Miscellaneous Paper	3.2%	1.7%	1,697	Construction & Demolition	23.6%	19.8%	12,436
Remainder/Composite Paper	12.2%	3.7%	6,443	Concrete	0.1%	0.2%	27
				Asphalt Paving	0.0%	0.0%	0
Glass	1.1%	0.8%	602	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.0%	0.7%	507	Lumber	22.3%	19.4%	11,761
Green Glass Bottles & Containers	0.0%	0.1%	14	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.2%	25	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.1%	21	Remainder/Composite C&D	1.2%	2.7%	648
Flat Glass	0.0%	0.1%	15				
Remainder/Composite Glass	0.0%	0.0%	21	Hazardous Waste	0.2%	0.2%	111
				Paint	0.0%	0.0%	0
Metal	8.7%	5.1%	4,600	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	1.3%	3.0%	676	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	32
Other Ferrous Metal	6.3%	5.4%	3,339	Remainder/Composite HW	0.1%	0.3%	79
Aluminum Cans	0.3%	0.2%	138				
Other Non-Ferrous Metal	0.2%	0.2%	89	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.5%	1.1%	271	Ash	0.0%	0.0%	0
Electronics	0.2%	0.5%	88	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	18.4%	9.5%	9,705	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.5%	0.7%	273	Bulky Items	0.0%	0.0%	0
PETE Containers	0.5%	0.3%	239	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.3%	0.6%	176	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	8.3%	6.7%	4,388				
Durable Plastic Items	1.1%	0.9%	563	Mixed Residue	0.9%	0.3%	470
Remainder/Composite Plastic	7.7%	7.1%	4,067				
				Totals	100.0%		52,750
				Sample count:	41		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 23: Composition of Waste from Group 9, Wholesale Trade – Nondurable Goods

	Est. Pct.	+ / -	Est. Tons	Other Organic	Est. Pct.	+ / -	Est. Tons
Paper	19.5%	18.6%	27,122	Other Organic	69.0%	28.6%	95,739
Uncoated Corrugated Cardboard	7.6%	2.6%	10,501	Food	62.4%	34.3%	86,560
Paper Bags	0.4%	0.7%	550	Leaves & Grass	0.5%	1.7%	718
Newspaper	0.5%	0.9%	646	Prunings & Trimmings	0.1%	0.5%	168
White Ledger Paper	1.2%	2.0%	1,601	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.2%	80	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	92	Manures	0.0%	0.0%	0
Other Office Paper	0.6%	1.0%	802	Textiles	3.8%	12.2%	5,275
Magazines and Catalogs	0.5%	0.8%	633	Remainder/Composite Organic	2.2%	5.2%	3,017
Phone Books and Directories	0.0%	0.0%	1				
Other Miscellaneous Paper	4.6%	2.6%	6,393	Construction & Demolition	4.2%	3.3%	5,838
Remainder/Composite Paper	4.2%	7.2%	5,824	Concrete	0.5%	2.0%	721
				Asphalt Paving	0.0%	0.0%	0
Glass	0.9%	2.5%	1,232	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.4%	0.6%	504	Lumber	3.7%	2.6%	5,117
Green Glass Bottles & Containers	0.0%	0.1%	36	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.1%	47	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.5%	1.4%	645	Hazardous Waste	0.2%	0.6%	213
				Paint	0.1%	0.6%	178
Metal	0.5%	1.2%	707	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.2%	191	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	2
Other Ferrous Metal	0.2%	0.8%	317	Remainder/Composite HW	0.0%	0.1%	32
Aluminum Cans	0.1%	0.2%	132				
Other Non-Ferrous Metal	0.0%	0.1%	56	Special Waste	0.2%	0.6%	230
Remainder/Composite Metal	0.0%	0.0%	11	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	5.3%	10.8%	7,393	Treated Medical Waste	0.2%	0.6%	230
HDPE Containers	0.2%	0.3%	263	Bulky Items	0.0%	0.0%	0
PETE Containers	0.1%	0.2%	200	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.3%	0.6%	427	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	3.7%	6.5%	5,077				
Durable Plastic Items	0.1%	0.1%	108	Mixed Residue	0.3%	0.7%	348
Remainder/Composite Plastic	0.9%	1.6%	1,319				
				Totals	100.0%		138,823
				Sample count:	39		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 24: Composition of Waste from Group 10, Government Facilities

	Est. Pct.	+ / -	Est. Tons	Other Organic	Est. Pct.	+ / -	Est. Tons
Paper	40.3%	9.2%	22,814	Other Organic	29.8%	9.3%	16,852
Uncoated Corrugated Cardboard	4.6%	1.9%	2,623	Food	23.5%	9.5%	13,279
Paper Bags	0.6%	0.2%	326	Leaves & Grass	1.8%	2.0%	1,038
Newspaper	4.2%	1.7%	2,358	Prunings & Trimmings	2.2%	3.9%	1,233
White Ledger Paper	6.2%	3.7%	3,535	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.1%	131	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	18	Manures	0.0%	0.0%	0
Other Office Paper	1.2%	0.7%	688	Textiles	1.4%	0.9%	792
Magazines and Catalogs	2.9%	2.5%	1,614	Remainder/Composite Organic	0.9%	0.4%	511
Phone Books and Directories	0.0%	0.0%	6				
Other Miscellaneous Paper	4.2%	1.5%	2,396	Construction & Demolition	4.3%	4.0%	2,442
Remainder/Composite Paper	16.1%	3.5%	9,117	Concrete	0.5%	0.7%	305
				Asphalt Paving	0.0%	0.0%	0
Glass	8.1%	8.8%	4,581	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.9%	1.5%	1,102	Lumber	1.6%	1.6%	921
Green Glass Bottles & Containers	4.6%	6.8%	2,593	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.7%	1.1%	423	Rock, Soil & Fines	0.8%	1.3%	428
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	1.4%	1.7%	788
Flat Glass	0.1%	0.2%	55				
Remainder/Composite Glass	0.7%	0.9%	408	Hazardous Waste	0.6%	1.2%	320
				Paint	0.0%	0.0%	3
Metal	3.6%	2.8%	2,028	Vehicle & Equipment Fluids	0.0%	0.0%	1
Tin/Steel Cans	0.4%	0.3%	219	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.1%	21	Batteries	0.0%	0.1%	27
Other Ferrous Metal	1.7%	1.4%	971	Remainder/Composite HW	0.5%	1.2%	290
Aluminum Cans	0.3%	0.2%	169				
Other Non-Ferrous Metal	0.1%	0.1%	69	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.7%	1.2%	419	Ash	0.0%	0.0%	0
Electronics	0.3%	0.4%	160	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	12.8%	1.6%	7,244	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.4%	0.2%	228	Bulky Items	0.0%	0.0%	0
PETE Containers	1.1%	0.5%	601	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.0%	0.8%	590	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	5.8%	1.3%	3,285				
Durable Plastic Items	1.7%	0.9%	980	Mixed Residue	0.6%	0.4%	342
Remainder/Composite Plastic	2.8%	1.3%	1,559				
				Totals	100.0%		56,623
				Sample count:	42		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 25: Composition of Waste from Group 11, Retail -- Miscellaneous

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	51.6%	8.1%	13,694	Other Organic	17.5%	9.1%	4,647
Uncoated Corrugated Cardboard	12.0%	7.4%	3,176	Food	4.3%	1.8%	1,146
Paper Bags	0.8%	0.3%	219	Leaves & Grass	7.1%	7.7%	1,882
Newspaper	4.2%	1.0%	1,126	Prunings & Trimmings	1.8%	2.9%	475
White Ledger Paper	6.9%	3.2%	1,834	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.4%	0.3%	113	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.0%	1.4%	277	Manures	0.0%	0.0%	0
Other Office Paper	1.4%	0.6%	379	Textiles	1.1%	0.9%	292
Magazines and Catalogs	3.3%	1.3%	864	Remainder/Composite Organic	3.2%	2.1%	853
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	6.8%	1.7%	1,808	Construction & Demolition	5.0%	3.8%	1,323
Remainder/Composite Paper	14.7%	5.8%	3,899	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	6.7%	6.4%	1,774	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.5%	0.9%	385	Lumber	1.8%	1.7%	487
Green Glass Bottles & Containers	0.2%	0.2%	55	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.1%	22	Rock, Soil & Fines	0.2%	0.2%	52
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	3.0%	3.7%	784
Flat Glass	4.9%	6.9%	1,287				
Remainder/Composite Glass	0.1%	0.1%	24	Hazardous Waste	0.1%	0.1%	28
				Paint	0.0%	0.0%	4
Metal	3.9%	1.9%	1,021	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.5%	0.3%	144	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	16
Other Ferrous Metal	1.1%	0.9%	298	Remainder/Composite HW	0.0%	0.0%	8
Aluminum Cans	0.1%	0.0%	22				
Other Non-Ferrous Metal	0.3%	0.4%	83	Special Waste	0.7%	0.9%	179
Remainder/Composite Metal	1.8%	1.9%	475	Ash	0.4%	0.8%	94
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	13.6%	4.8%	3,604	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.7%	0.5%	181	Bulky Items	0.0%	0.0%	7
PETE Containers	0.4%	0.2%	114	Tires	0.3%	0.5%	78
Miscellaneous Plastic Containers	0.4%	0.2%	102	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.9%	2.0%	1,291				
Durable Plastic Items	1.6%	1.9%	428	Mixed Residue	0.9%	0.3%	245
Remainder/Composite Plastic	5.6%	2.5%	1,488				
				Totals	100.0%		26,515
				Sample count:	41		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 26: Composition of Waste from Group 12, Manufacturing – Printing and Publishing

	Est. Pct.	+ / -	Est. Tons	Est. Pct.	+ / -	Est. Tons
Paper	68.9%	7.7%	8,511	4.8%	1.8%	591
Uncoated Corrugated Cardboard	8.2%	4.2%	1,012	3.1%	1.4%	381
Paper Bags	1.7%	0.9%	213	0.1%	0.1%	8
Newspaper	4.3%	2.5%	537	0.0%	0.0%	0
White Ledger Paper	8.2%	4.2%	1,014	0.0%	0.0%	0
Colored Ledger Paper	0.8%	0.6%	103	0.0%	0.0%	0
Computer Paper	0.8%	1.6%	100	0.0%	0.0%	0
Other Office Paper	2.6%	1.8%	322	0.3%	0.2%	34
Magazines and Catalogs	4.9%	1.8%	603	1.4%	0.9%	168
Phone Books and Directories	0.8%	0.9%	102			
Other Miscellaneous Paper	15.6%	6.0%	1,929			
Remainder/Composite Paper	20.8%	12.9%	2,575			
	0.5%	0.3%	57	4.4%	3.4%	541
Glass						
Clear Glass Bottles & Containers	0.3%	0.3%	36	0.0%	0.0%	0
Green Glass Bottles & Containers	0.0%	0.0%	2	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.1%	17	4.3%	3.5%	534
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0	0.1%	0.1%	6
Remainder/Composite Glass	0.0%	0.0%	1	0.0%	0.0%	1
	2.5%	1.9%	313	2.2%	2.8%	268
Metal						
Tin/Steel Cans	0.4%	0.2%	49	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	0.0%	0.0%	0
Other Ferrous Metal	1.2%	1.7%	147	0.0%	0.0%	0
Aluminum Cans	0.1%	0.0%	11	0.0%	0.0%	0
Other Non-Ferrous Metal	0.2%	0.1%	25	2.2%	3.1%	268
Remainder/Composite Metal	0.6%	1.0%	80			
Electronics	0.0%	0.0%	0			
	16.0%	10.5%	1,974	0.0%	0.0%	0
Plastic						
HDPE Containers	0.5%	0.4%	68	0.0%	0.0%	0
PETE Containers	0.2%	0.1%	19	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.4%	0.2%	45	0.0%	0.0%	0
Film Plastic	3.8%	0.9%	467	0.0%	0.0%	0
Durable Plastic Items	0.7%	0.4%	83	0.0%	0.0%	0
Remainder/Composite Plastic	10.5%	8.4%	1,292			
				0.8%	0.3%	101
Mixed Residue						
Totals				100.0%		12,356
Sample count:				26		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 27: Composition of Waste from Group 13, Manufacturing – Apparel and Textile

	Est. Pct.	+ / -	Est. Tons	Other Organic	Est. Pct.	+ / -	Est. Tons
Paper	21.6%	15.4%	12,891	Other Organic	69.5%	16.6%	41,467
Uncoated Corrugated Cardboard	1.5%	1.3%	893	Food	4.1%	1.7%	2,456
Paper Bags	1.6%	1.1%	942	Leaves & Grass	0.0%	0.0%	4
Newspaper	0.6%	0.2%	350	Prunings & Trimmings	0.0%	0.0%	1
White Ledger Paper	1.1%	1.0%	638	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	26	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	11	Manures	0.0%	0.0%	0
Other Office Paper	0.8%	0.8%	490	Textiles	63.3%	17.8%	37,797
Magazines and Catalogs	0.3%	0.2%	200	Remainder/Composite Organic	2.0%	2.5%	1,210
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	11.6%	13.7%	6,895	Construction & Demolition	0.3%	0.3%	180
Remainder/Composite Paper	4.1%	2.8%	2,447	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.2%	0.3%	107
Glass	0.5%	0.5%	293	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.4%	0.3%	239	Lumber	0.1%	0.1%	43
Green Glass Bottles & Containers	0.0%	0.1%	18	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.1%	30
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.1%	0.1%	37	Hazardous Waste	0.1%	0.0%	30
				Paint	0.0%	0.0%	3
Metal	0.6%	0.5%	383	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.1%	43	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	7
Other Ferrous Metal	0.0%	0.0%	12	Remainder/Composite HW	0.0%	0.0%	20
Aluminum Cans	0.0%	0.0%	21				
Other Non-Ferrous Metal	0.0%	0.0%	18	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.5%	0.6%	289	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	7.1%	3.5%	4,234	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.0%	32	Bulky Items	0.0%	0.0%	0
PETE Containers	0.2%	0.1%	123	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.0%	56	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	5.7%	3.0%	3,414				
Durable Plastic Items	0.2%	0.2%	146	Mixed Residue	0.3%	0.3%	193
Remainder/Composite Plastic	0.8%	0.5%	462				
				Totals	100.0%		59,671
				Sample count:	25		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 28: Composition of Waste from Group 14, Retail – Food Stores

	Est. Pct.	+ / -	Est. Tons	Est. Pct.	+ / -	Est. Tons
Paper	17.4%	9.0%	19,732	67.3%	15.1%	76,108
Uncoated Corrugated Cardboard	4.9%	4.2%	5,555	65.3%	15.3%	73,918
Paper Bags	0.3%	0.2%	316	0.1%	0.2%	105
Newspaper	1.2%	1.0%	1,408	0.0%	0.0%	0
White Ledger Paper	0.3%	0.3%	345	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.2%	90	0.0%	0.0%	0
Computer Paper	0.1%	0.0%	59	0.0%	0.0%	0
Other Office Paper	0.5%	0.3%	512	1.1%	1.0%	1,231
Magazines and Catalogs	0.5%	0.6%	544	0.8%	0.4%	854
Phone Books and Directories	0.0%	0.0%	0			
Other Miscellaneous Paper	1.8%	0.8%	2,039			
Remainder/Composite Paper	7.8%	4.2%	8,862			
Glass	1.3%	1.3%	1,489	3.5%	6.6%	3,909
Clear Glass Bottles & Containers	0.6%	0.3%	625	0.0%	0.0%	0
Green Glass Bottles & Containers	0.1%	0.2%	152	0.6%	0.6%	707
Brown Glass Bottles & Containers	0.6%	0.9%	699	0.0%	0.0%	24
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0	2.8%	7.0%	3,178
Remainder/Composite Glass	0.0%	0.0%	12			
Metal	1.2%	0.6%	1,324	0.0%	0.0%	14
Tin/Steel Cans	0.4%	0.5%	398	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	0.0%	0.0%	0
Other Ferrous Metal	0.1%	0.2%	162	0.0%	0.0%	0
Aluminum Cans	0.1%	0.1%	112	0.0%	0.0%	0
Other Non-Ferrous Metal	0.1%	0.1%	90			
Remainder/Composite Metal	0.5%	0.5%	562			
Electronics	0.0%	0.0%	0			
Plastic	9.2%	3.8%	10,372	0.0%	0.0%	0
HDPE Containers	1.0%	0.8%	1,174	0.0%	0.0%	0
PETE Containers	0.3%	0.2%	364	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.1%	163	0.0%	0.0%	0
Film Plastic	6.1%	3.2%	6,895	0.0%	0.0%	0
Durable Plastic Items	0.2%	0.1%	199			
Remainder/Composite Plastic	1.4%	1.0%	1,576			
Other Organic						
Food						
Leaves & Grass						
Prunings & Trimmings						
Branches & Stumps						
Agricultural Crop Residues						
Manures						
Textiles						
Remainder/Composite Organic						
Construction & Demolition						
Concrete						
Asphalt Paving						
Asphalt Roofing						
Lumber						
Gypsum Board						
Rock, Soil & Fines						
Remainder/Composite C&D						
Hazardous Waste						
Paint						
Vehicle & Equipment Fluids						
Used Oil						
Batteries						
Remainder/Composite HW						
Special Waste						
Ash						
Sewage Solids						
Industrial Sludge						
Treated Medical Waste						
Bulky Items						
Tires						
Remainder/Composite Special Waste						
Mixed Residue						
Totals						
Sample count:						

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 29: Composition of Waste from Group 15, Services – Motion Picture

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	53.3%	13.6%	20,948	Other Organic	15.3%	5.8%	6,027
Uncoated Corrugated Cardboard	10.5%	6.6%	4,129	Food	10.5%	3.4%	4,118
Paper Bags	0.8%	0.3%	329	Leaves & Grass	1.6%	2.6%	620
Newspaper	5.1%	2.2%	2,016	Prunings & Trimmings	1.3%	1.7%	514
White Ledger Paper	10.3%	5.7%	4,034	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.7%	0.9%	257	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.1%	16	Manures	0.0%	0.0%	0
Other Office Paper	4.2%	2.6%	1,668	Textiles	0.4%	0.4%	170
Magazines and Catalogs	5.8%	3.0%	2,294	Remainder/Composite Organic	1.5%	1.4%	605
Phone Books and Directories	0.0%	0.0%	4				
Other Miscellaneous Paper	3.6%	1.0%	1,427	Construction & Demolition	8.9%	11.6%	3,491
Remainder/Composite Paper	12.2%	3.2%	4,775	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	2.9%	1.5%	1,136	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.7%	0.7%	683	Lumber	5.5%	8.1%	2,161
Green Glass Bottles & Containers	0.1%	0.1%	23	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.5%	0.6%	181	Rock, Soil & Fines	0.7%	1.5%	273
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	2.7%	4.0%	1,057
Flat Glass	0.2%	0.4%	63				
Remainder/Composite Glass	0.5%	0.8%	186	Hazardous Waste	0.1%	0.1%	29
				Paint	0.0%	0.0%	0
Metal	4.0%	3.3%	1,572	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.5%	0.4%	184	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	27
Other Ferrous Metal	0.7%	0.5%	260	Remainder/Composite HW	0.0%	0.0%	1
Aluminum Cans	0.5%	0.2%	197				
Other Non-Ferrous Metal	0.0%	0.0%	18	Special Waste	3.7%	8.0%	1,444
Remainder/Composite Metal	1.3%	0.9%	520	Ash	0.0%	0.1%	16
Electronics	1.0%	2.2%	392	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.5%	3.8%	4,504	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.1%	79	Bulky Items	3.6%	7.4%	1,428
PETE Containers	1.2%	0.4%	458	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.9%	0.4%	353	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.3%	1.8%	1,672				
Durable Plastic Items	0.8%	0.4%	322	Mixed Residue	0.3%	0.2%	120
Remainder/Composite Plastic	4.1%	2.1%	1,619				
				Totals	100.0%		39,271
				Sample count:	34		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 30: Composition of Waste from Group 16, Manufacturing – Transportation Equipment

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	33.1%	7.8%	2,793	Other Organic	18.0%	10.3%	1,521
Uncoated Corrugated Cardboard	8.8%	1.5%	741	Food	3.0%	1.1%	252
Paper Bags	1.1%	0.8%	91	Leaves & Grass	1.1%	1.8%	91
Newspaper	2.3%	1.0%	196	Prunings & Trimmings	0.3%	0.4%	23
White Ledger Paper	4.3%	3.5%	361	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.0%	6	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.3%	0.4%	30	Manures	0.0%	0.0%	0
Other Office Paper	1.2%	0.7%	101	Textiles	2.1%	1.3%	177
Magazines and Catalogs	1.5%	0.9%	127	Remainder/Composite Organic	11.6%	10.7%	978
Phone Books and Directories	1.2%	1.8%	102				
Other Miscellaneous Paper	3.3%	1.3%	283	Construction & Demolition	16.5%	8.6%	1,394
Remainder/Composite Paper	9.0%	3.4%	757	Concrete	0.0%	0.0%	1
				Asphalt Paving	0.0%	0.0%	0
Glass	1.3%	0.6%	109	Asphalt Roofing	0.5%	0.6%	43
Clear Glass Bottles & Containers	0.7%	0.5%	60	Lumber	8.0%	6.3%	679
Green Glass Bottles & Containers	0.1%	0.1%	8	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.3%	0.3%	28	Rock, Soil & Fines	0.4%	0.5%	33
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	7.6%	8.0%	638
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.1%	0.2%	13	Hazardous Waste	1.4%	1.2%	120
				Paint	0.1%	0.1%	6
Metal	14.2%	11.5%	1,201	Vehicle & Equipment Fluids	0.0%	0.0%	1
Tin/Steel Cans	1.3%	1.0%	108	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.4%	0.6%	35
Other Ferrous Metal	5.7%	2.7%	477	Remainder/Composite HW	0.9%	1.3%	79
Aluminum Cans	0.2%	0.2%	17				
Other Non-Ferrous Metal	0.3%	0.1%	22	Special Waste	1.4%	1.9%	115
Remainder/Composite Metal	6.8%	8.4%	574	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	2	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.4%	4.5%	959	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.4%	0.3%	30	Bulky Items	1.4%	1.8%	115
PETE Containers	0.3%	0.1%	21	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.1%	16	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	2.7%	1.4%	224				
Durable Plastic Items	1.2%	0.9%	101	Mixed Residue	2.8%	2.2%	234
Remainder/Composite Plastic	6.7%	4.5%	567				
				Totals	100.0%		8,446
				Sample count:	39		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 31: Composition of Waste from Group 17, Services – Hotel and Lodging

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	37.3%	40.6%	22,100	Other Organic	41.8%	51.2%	24,793
Uncoated Corrugated Cardboard	5.7%	4.3%	3,403	Food	33.4%	15.9%	19,794
Paper Bags	0.4%	0.1%	218	Leaves & Grass	4.2%	3.9%	2,499
Newspaper	12.2%	3.8%	7,215	Prunings & Trimmings	0.0%	0.0%	2
White Ledger Paper	4.7%	3.2%	2,764	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.3%	0.2%	189	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.6%	1.5%	953	Manures	0.0%	0.0%	0
Other Office Paper	0.7%	0.4%	398	Textiles	1.8%	0.5%	1,043
Magazines and Catalogs	2.0%	0.7%	1,200	Remainder/Composite Organic	2.5%	3.7%	1,455
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	2.8%	1.2%	1,677	Construction & Demolition	5.5%	9.2%	3,285
Remainder/Composite Paper	6.9%	3.0%	4,083	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	7.1%	8.3%	4,206	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	3.5%	2.0%	2,088	Lumber	5.3%	5.3%	3,152
Green Glass Bottles & Containers	1.6%	1.5%	952	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	1.6%	2.5%	968	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.2%	0.2%	132
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.3%	0.6%	197	Hazardous Waste	0.0%	2.0%	5
				Paint	0.0%	0.0%	0
Metal	1.6%	3.4%	969	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.5%	0.7%	294	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	4
Other Ferrous Metal	0.1%	0.1%	76	Remainder/Composite HW	0.0%	0.0%	1
Aluminum Cans	0.3%	0.1%	151				
Other Non-Ferrous Metal	0.3%	0.2%	157	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.5%	0.5%	286	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	5	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	6.5%	7.2%	3,868	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.6%	0.2%	381	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.1%	228	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.4%	0.2%	266	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	2.7%	0.6%	1,628				
Durable Plastic Items	0.8%	0.5%	468	Mixed Residue	0.1%	0.1%	57
Remainder/Composite Plastic	1.5%	0.7%	897				
				Totals	100.0%		59,282
				Sample count:	39		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 32: Composition of Waste from Group 18, Manufacturing – Primary and Fabricated Metal

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	30.6%	5.8%	5,851	Other Organic	18.5%	10.7%	3,536
Uncoated Corrugated Cardboard	5.1%	3.2%	976	Food	4.4%	2.3%	844
Paper Bags	3.8%	4.9%	722	Leaves & Grass	0.7%	1.7%	136
Newspaper	1.4%	1.0%	265	Prunings & Trimmings	0.0%	0.0%	2
White Ledger Paper	1.9%	1.5%	373	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	6	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.6%	1.0%	122	Manures	0.0%	0.0%	0
Other Office Paper	0.8%	0.5%	150	Textiles	6.2%	5.7%	1,193
Magazines and Catalogs	2.4%	2.5%	465	Remainder/Composite Organic	7.1%	10.1%	1,361
Phone Books and Directories	0.0%	0.0%	2				
Other Miscellaneous Paper	2.6%	1.5%	501	Construction & Demolition	17.9%	8.6%	3,423
Remainder/Composite Paper	11.9%	4.6%	2,270	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	0.6%	0.5%	111	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.4%	0.3%	82	Lumber	8.8%	7.7%	1,691
Green Glass Bottles & Containers	0.1%	0.1%	10	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.2%	17	Rock, Soil & Fines	0.0%	0.1%	6
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	9.0%	8.4%	1,726
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	2	Hazardous Waste	4.6%	8.1%	879
				Paint	4.6%	7.4%	871
Metal	12.3%	6.0%	2,346	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.3%	0.3%	48	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	8
Other Ferrous Metal	10.0%	6.4%	1,920	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.0%	0.0%	9				
Other Non-Ferrous Metal	0.2%	0.1%	33	Special Waste	1.1%	2.4%	219
Remainder/Composite Metal	1.8%	1.2%	335	Ash	0.0%	0.0%	1
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	14.1%	8.7%	2,689	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	5.7%	8.7%	1,082	Bulky Items	1.1%	2.4%	218
PETE Containers	0.3%	0.2%	57	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.3%	0.2%	48	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	3.8%	2.1%	721				
Durable Plastic Items	0.4%	0.2%	78	Mixed Residue	0.4%	0.4%	71
Remainder/Composite Plastic	3.7%	2.3%	703				
				Totals	100.0%		19,125
				Sample count:	26		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 33: Composition of Waste from Group 19, Other Transportation

	Est. Pct.	+ / -	Est. Tons	Est. Pct.	+ / -	Est. Tons
Paper	56.5%	7.9%	9,091	16.7%	7.6%	2,684
Uncoated Corrugated Cardboard	9.6%	7.3%	1,548	14.6%	7.7%	2,342
Paper Bags	0.4%	0.3%	72	0.4%	0.5%	60
Newspaper	5.4%	5.9%	871	0.1%	0.1%	14
White Ledger Paper	10.9%	7.0%	1,750	0.0%	0.0%	0
Colored Ledger Paper	0.5%	0.8%	73	0.0%	0.0%	0
Computer Paper	0.4%	0.4%	65	0.0%	0.0%	0
Other Office Paper	7.4%	8.7%	1,195	0.7%	0.5%	107
Magazines and Catalogs	3.3%	2.9%	531	1.0%	1.0%	161
Phone Books and Directories	0.0%	0.0%	0			
Other Miscellaneous Paper	5.2%	2.8%	828			
Remainder/Composite Paper	13.4%	4.7%	2,157			
Glass	3.9%	1.7%	625	2.8%	2.3%	456
Clear Glass Bottles & Containers	2.1%	1.1%	331	0.0%	0.0%	0
Green Glass Bottles & Containers	1.0%	0.6%	156	1.5%	1.3%	239
Brown Glass Bottles & Containers	0.3%	0.3%	49	0.0%	0.1%	6
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	0.2%	0.3%	26
Flat Glass	0.0%	0.0%	0	1.2%	1.6%	185
Remainder/Composite Glass	0.6%	0.8%	89			
Metal	3.4%	2.5%	541	0.1%	0.2%	17
Tin/Steel Cans	0.3%	0.2%	54	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	0.0%	0.0%	0
Other Ferrous Metal	2.5%	2.7%	394	0.1%	0.2%	12
Aluminum Cans	0.3%	0.2%	55	0.0%	0.0%	5
Other Non-Ferrous Metal	0.1%	0.0%	10	0.0%	0.0%	0
Remainder/Composite Metal	0.1%	0.2%	18			
Electronics	0.1%	0.1%	11			
Plastic	13.4%	3.4%	2,150	0.9%	1.4%	146
HDPE Containers	1.1%	1.3%	173	0.0%	0.0%	3
PETE Containers	0.6%	0.2%	103	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.9%	0.2%	141	0.9%	1.5%	143
Film Plastic	4.9%	1.3%	785	0.0%	0.0%	0
Durable Plastic Items	1.1%	0.5%	176	0.0%	0.0%	0
Remainder/Composite Plastic	4.8%	3.1%	772			
Totals				100.0%	1.8%	366
Sample count:				41		16,076

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 34: Composition of Waste from Group 20, Manufacturing -- Other

	Est. Pct.	+ / -	Est. Tons	Est. Pct.	+ / -	Est. Tons
Paper			9,613			2,073
Uncoated Corrugated Cardboard	24.8%	11.6%	2,246	5.3%	3.6%	2,073
Paper Bags	5.8%	7.1%	336	2.5%	1.6%	985
Newspaper	0.9%	0.4%	345	0.2%	0.2%	70
White Ledger Paper	0.9%	0.5%	755	0.0%	0.0%	1
Colored Ledger Paper	1.9%	1.1%	39	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	1,001	0.0%	0.0%	0
Other Office Paper	2.6%	3.0%	928	0.0%	0.0%	0
Magazines and Catalogs	2.4%	1.8%	219	1.2%	1.8%	450
Phone Books and Directories	0.6%	0.5%	0	1.5%	1.7%	568
Other Miscellaneous Paper	0.0%	0.0%	1,983			
Remainder/Composite Paper	5.1%	3.8%	1,760			
	4.5%	2.7%				
Glass			3,018			18,748
Clear Glass Bottles & Containers	7.8%	8.5%	113	48.4%	17.2%	18,748
Green Glass Bottles & Containers	0.3%	0.1%	336	1.5%	3.5%	599
Brown Glass Bottles & Containers	0.9%	1.2%	118	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.3%	0.4%	0	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	1,954	0.0%	0.0%	0
Remainder/Composite Glass	5.0%	6.2%	496	16.7%	11.6%	6,475
	1.3%	1.4%		0.1%	0.1%	32
				2.8%	2.9%	1,099
				27.2%	21.1%	10,537
Metal			695			3
Tin/Steel Cans	1.8%	1.2%	83	0.0%	0.0%	0
Major Appliances	0.2%	0.2%	0	0.0%	0.0%	0
Other Ferrous Metal	0.0%	0.0%	519	0.0%	0.0%	0
Aluminum Cans	1.3%	0.9%	37	0.0%	0.0%	3
Other Non-Ferrous Metal	0.1%	0.1%	23	0.0%	0.0%	0
Remainder/Composite Metal	0.1%	0.1%	33	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	0.0%	0.0%	0
Plastic			4,232			144
HDPE Containers	10.9%	4.4%	42	0.4%	0.9%	144
PETE Containers	0.1%	0.1%	81	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.1%	38	0.0%	0.0%	0
Film Plastic	0.1%	0.1%	2,088	0.4%	0.9%	144
Durable Plastic Items	5.4%	2.8%	452	0.0%	0.0%	0
Remainder/Composite Plastic	1.2%	1.4%	1,533	0.0%	0.0%	0
	4.0%	2.8%		0.6%	0.6%	241
Totals				100.0%		38,766
Sample count:				44		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 35: Composition of Waste from Group 21, Manufacturing – Instruments and Related Products

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	49.0%	6.3%	1,275	Other Organic	11.1%	3.5%	290
Uncoated Corrugated Cardboard	4.5%	3.0%	118	Food	7.1%	2.3%	186
Paper Bags	0.6%	0.4%	15	Leaves & Grass	1.4%	1.8%	37
Newspaper	2.8%	0.9%	72	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	7.1%	3.5%	185	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	3	Agricultural Crop Residues	0.0%	0.1%	1
Computer Paper	0.7%	1.2%	19	Manures	0.0%	0.0%	0
Other Office Paper	2.4%	1.3%	63	Textiles	0.4%	0.3%	10
Magazines and Catalogs	4.3%	2.7%	113	Remainder/Composite Organic	2.1%	1.4%	56
Phone Books and Directories	0.7%	0.9%	19				
Other Miscellaneous Paper	5.0%	2.7%	130	Construction & Demolition	11.9%	8.4%	311
Remainder/Composite Paper	20.7%	6.1%	538	Concrete	0.0%	0.0%	0
				Asphalt Paving	4.0%	6.2%	104
Glass	2.4%	1.2%	62	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.0%	0.3%	25	Lumber	6.1%	7.3%	158
Green Glass Bottles & Containers	1.0%	1.2%	25	Gypsum Board	0.2%	0.3%	6
Brown Glass Bottles & Containers	0.1%	0.1%	3	Rock, Soil & Fines	1.5%	1.5%	39
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.1%	0.2%	3
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.3%	0.5%	9	Hazardous Waste	0.7%	0.7%	18
				Paint	0.3%	0.6%	7
Metal	4.7%	3.5%	122	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.5%	0.3%	12	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	2
Other Ferrous Metal	3.2%	3.4%	83	Remainder/Composite HW	0.3%	0.5%	9
Aluminum Cans	0.2%	0.1%	5				
Other Non-Ferrous Metal	0.1%	0.0%	3	Special Waste	4.7%	5.2%	122
Remainder/Composite Metal	0.3%	0.3%	9	Ash	0.0%	0.0%	0
Electronics	0.4%	0.8%	10	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	15.0%	4.5%	390	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	1.5%	1.9%	39	Bulky Items	4.7%	5.1%	122
PETE Containers	0.6%	0.3%	16	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.0%	0.5%	26	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	6.9%	4.3%	180				
Durable Plastic Items	1.0%	0.7%	25	Mixed Residue	0.6%	0.3%	17
Remainder/Composite Plastic	3.9%	1.9%	103				
				Totals	100.0%		2,605
				Sample count:	38		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 36: Composition of Waste from Group 22, Communications

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	48.5%	21.7%	3,915	Other Organic	6.0%	3.8%	487
Uncoated Corrugated Cardboard	8.2%	6.7%	659	Food	3.7%	2.6%	299
Paper Bags	0.4%	0.3%	28	Leaves & Grass	1.1%	1.6%	88
Newspaper	3.6%	1.6%	292	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	11.8%	9.2%	951	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	5	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.1%	1.4%	87	Manures	0.0%	0.0%	0
Other Office Paper	3.4%	2.8%	278	Textiles	0.5%	0.4%	41
Magazines and Catalogs	5.2%	4.2%	418	Remainder/Composite Organic	0.7%	0.5%	58
Phone Books and Directories	4.6%	8.3%	375				
Other Miscellaneous Paper	4.2%	4.2%	340	Construction & Demolition	8.7%	8.1%	702
Remainder/Composite Paper	6.0%	4.1%	482	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	0.8%	0.6%	62	Asphalt Roofing	1.5%	3.2%	123
Clear Glass Bottles & Containers	0.5%	0.4%	37	Lumber	5.3%	7.1%	430
Green Glass Bottles & Containers	0.2%	0.4%	18	Gypsum Board	0.4%	0.7%	32
Brown Glass Bottles & Containers	0.0%	0.1%	2	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	1	Remainder/Composite C&D	1.5%	2.2%	117
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.1%	3	Hazardous Waste	0.0%	0.1%	4
				Paint	0.0%	0.0%	0
Metal	6.1%	3.0%	490	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.1%	8	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.1%	4
Other Ferrous Metal	1.4%	1.2%	109	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.2%	0.2%	15				
Other Non-Ferrous Metal	0.0%	0.0%	3	Special Waste	0.4%	0.7%	29
Remainder/Composite Metal	4.4%	3.9%	353	Ash	0.2%	0.4%	14
Electronics	0.0%	0.0%	1	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	29.1%	22.4%	2,349	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.1%	5	Bulky Items	0.2%	0.4%	14
PETE Containers	0.4%	0.3%	32	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.4%	0.3%	34	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	2.0%	1.3%	159				
Durable Plastic Items	0.8%	0.7%	62	Mixed Residue	0.3%	0.3%	28
Remainder/Composite Plastic	25.5%	23.7%	2,057				
				Totals	100.0%		8,065
				Sample count:	25		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 37: Composition of Waste from Group 23, Manufacturing – Food and Kindred Products

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	28.4%	8.1%	11,400	Other Organic	37.0%	18.3%	14,867
Uncoated Corrugated Cardboard	5.7%	5.5%	2,310	Food	34.1%	17.6%	13,725
Paper Bags	1.4%	1.7%	563	Leaves & Grass	0.1%	0.2%	60
Newspaper	1.3%	1.1%	519	Prunings & Trimmings	0.0%	0.1%	9
White Ledger Paper	1.6%	0.8%	634	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.1%	18	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.4%	0.4%	154	Manures	0.0%	0.0%	0
Other Office Paper	0.3%	0.3%	127	Textiles	0.8%	0.8%	333
Magazines and Catalogs	1.1%	1.7%	438	Remainder/Composite Organic	1.8%	1.5%	740
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	3.5%	1.1%	1,400	Construction & Demolition	1.4%	1.4%	567
Remainder/Composite Paper	13.0%	3.9%	5,237	Concrete	0.3%	0.5%	101
				Asphalt Paving	0.0%	0.0%	0
Glass	0.8%	0.7%	308	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.6%	0.6%	249	Lumber	1.1%	0.7%	457
Green Glass Bottles & Containers	0.1%	0.1%	40	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	10	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.1%	9
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	9	Hazardous Waste	0.1%	0.2%	54
				Paint	0.1%	0.2%	46
Metal	1.6%	0.8%	625	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.2%	0.2%	99	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.3%	0.2%	104	Remainder/Composite HW	0.0%	0.0%	7
Aluminum Cans	0.3%	0.1%	119				
Other Non-Ferrous Metal	0.2%	0.2%	92	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.2%	0.3%	95	Ash	0.0%	0.0%	0
Electronics	0.3%	0.6%	117	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	30.5%	17.2%	12,250	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.5%	0.4%	219	Bulky Items	0.0%	0.0%	0
PETE Containers	0.3%	0.2%	130	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.1%	88	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	14.7%	12.5%	5,907				
Durable Plastic Items	4.8%	7.0%	1,917	Mixed Residue	0.3%	0.2%	120
Remainder/Composite Plastic	9.9%	9.6%	3,990				
				Totals	100.0%		40,192
				Sample count:	31		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 38: Composition of Waste from Group 24, Manufacturing – Electronic Equipment

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	53.2%	12.6%	3,855	Other Organic	7.3%	5.8%	532
Uncoated Corrugated Cardboard	18.9%	13.7%	1,374	Food	4.0%	2.8%	289
Paper Bags	0.4%	0.2%	30	Leaves & Grass	0.9%	1.4%	66
Newspaper	1.1%	1.0%	78	Prunings & Trimmings	0.2%	0.3%	14
White Ledger Paper	11.5%	12.7%	831	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	7	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.2%	0.1%	11	Manures	0.0%	0.0%	0
Other Office Paper	1.2%	1.0%	88	Textiles	0.7%	1.1%	49
Magazines and Catalogs	2.7%	3.0%	196	Remainder/Composite Organic	1.6%	2.2%	115
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	8.3%	5.6%	599	Construction & Demolition	13.0%	8.7%	946
Remainder/Composite Paper	8.9%	5.0%	643	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	0.6%	0.5%	43	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.5%	0.5%	36	Lumber	12.9%	9.1%	935
Green Glass Bottles & Containers	0.0%	0.1%	3	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	1	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.1%	0.2%	11
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.1%	3	Hazardous Waste	0.2%	0.2%	12
				Paint	0.0%	0.0%	0
Metal	4.1%	2.9%	295	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.6%	1.2%	42	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.2%	11
Other Ferrous Metal	0.3%	0.3%	23	Remainder/Composite HW	0.0%	0.1%	2
Aluminum Cans	0.1%	0.1%	6				
Other Non-Ferrous Metal	0.1%	0.1%	7	Special Waste	0.7%	1.7%	49
Remainder/Composite Metal	2.2%	1.7%	160	Ash	0.0%	0.0%	0
Electronics	0.8%	1.5%	59	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	20.6%	12.1%	1,492	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.3%	15	Bulky Items	0.7%	1.6%	49
PETE Containers	0.2%	0.2%	15	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.4%	0.3%	28	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	8.6%	6.4%	626				
Durable Plastic Items	2.1%	1.6%	155	Mixed Residue	0.4%	0.3%	27
Remainder/Composite Plastic	9.0%	5.5%	654				
				Totals	100.0%		7,252
				Sample count:	31		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 39: Composition of Waste from Group 25, Other Industries

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	26.0%	15.3%	43,201	Other Organic	40.3%	18.9%	67,110
Uncoated Corrugated Cardboard	3.8%	4.1%	6,305	Food	4.3%	2.3%	7,199
Paper Bags	0.2%	0.3%	399	Leaves & Grass	8.7%	8.0%	14,528
Newspaper	2.0%	1.2%	3,273	Prunings & Trimmings	4.5%	4.4%	7,481
White Ledger Paper	1.9%	1.0%	3,125	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	55	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	1.1%	1.3%	1,787	Manures	0.0%	0.0%	0
Other Office Paper	2.2%	2.2%	3,656	Textiles	3.8%	3.7%	6,258
Magazines and Catalogs	1.1%	0.8%	1,766	Remainder/Composite Organic	19.0%	17.4%	31,644
Phone Books and Directories	0.2%	0.1%	276				
Other Miscellaneous Paper	1.7%	1.0%	2,902	Construction & Demolition	18.7%	9.0%	31,144
Remainder/Composite Paper	11.8%	6.2%	19,656	Concrete	8.0%	7.8%	13,381
				Asphalt Paving	0.0%	0.0%	0
Glass	0.6%	0.5%	1,015	Asphalt Roofing	0.0%	0.0%	16
Clear Glass Bottles & Containers	0.4%	0.4%	695	Lumber	9.9%	4.2%	16,395
Green Glass Bottles & Containers	0.1%	0.1%	184	Gypsum Board	0.0%	0.0%	14
Brown Glass Bottles & Containers	0.0%	0.0%	31	Rock, Soil & Fines	0.2%	0.9%	318
Other Colored Glass Bottles & Containers	0.0%	0.0%	1	Remainder/Composite C&D	0.6%	0.6%	1,020
Flat Glass	0.0%	0.0%	50				
Remainder/Composite Glass	0.0%	0.0%	56	Hazardous Waste	0.3%	0.3%	547
				Paint	0.0%	0.0%	20
Metal	3.8%	2.5%	6,244	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.2%	167	Used Oil	0.0%	0.0%	48
Major Appliances	0.0%	0.0%	0	Batteries	0.2%	0.2%	251
Other Ferrous Metal	1.4%	1.0%	2,376	Remainder/Composite HW	0.1%	0.2%	229
Aluminum Cans	0.1%	0.1%	237				
Other Non-Ferrous Metal	0.2%	0.2%	310	Special Waste	0.2%	0.4%	308
Remainder/Composite Metal	1.9%	2.1%	3,150	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	4	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	9.6%	3.8%	15,970	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.2%	361	Bulky Items	0.0%	0.0%	0
PETE Containers	0.5%	0.3%	816	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.4%	0.2%	723	Remainder/Composite Special Waste	0.2%	0.4%	308
Film Plastic	4.5%	2.0%	7,499				
Durable Plastic Items	1.3%	0.7%	2,208	Mixed Residue	0.5%	0.3%	850
Remainder/Composite Plastic	2.6%	1.4%	4,364				
				Totals	100.0%		166,389
				Sample count:	67		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

APPENDIX A: DETAILED METHODOLOGY

Appendix A presents a detailed description of the methods used to conduct the City of Los Angeles waste characterization study. Few waste composition studies have been attempted that involved such a wide range of sampling methods.

Since waste composition estimates are based fundamentally on samples of waste, Section A.1 of this appendix addresses the choices made regarding the number and allocation of samples. Section A.2 follows with a discussion of the preparation that led to the selection of actual business and institutional sites to participate in the study of commercial waste, which was the primary focus of the study.

Section A.3 describes the various methods that were used to quantify the different sectors of the waste stream. Sections A.4 and A.5 then describe the process of obtaining and sorting waste samples. Finally, section A.6 presents the methods used to calculate composition estimates for each type of waste.

A.1 ALLOCATION OF WASTE SAMPLES AND WASTE DISPOSAL MEASUREMENTS

This section presents the numbers of waste samples planned and actually obtained during the study for each waste sector. For samples obtained at disposal facilities, sample numbers are given by facility and season. For samples obtained at the point of generation, sample numbers are presented by industry category and season.

In addition to waste samples, disposal measurements were taken at commercial and multifamily sites to reflect waste disposal by sector and industry category.

A.1.1 ALLOCATION OF DISPOSAL SITE SAMPLES

Disposed waste from the single-family residential, construction/demolition, and landscaping sectors was characterized by obtaining samples at disposal sites rather than at individual waste generators. Waste samples from these sectors were obtained directly from collection vehicles at disposal sites (landfills or transfer stations).

In order to provide reliable waste composition estimates, the following numbers of waste samples were planned from the three sectors characterized by disposal-site sampling:

- 80 samples from haulers of single-family residential waste,
- 160 samples from haulers of construction/demolition waste, and
- 80 samples from haulers of landscaping waste.

A larger number of samples was allocated to the construction/demolition sector due to the greater expected variability among loads. It was anticipated that more samples from this sector would be required to achieve precision levels comparable to those of the single-family and landscaping sectors.

Waste sampling occurred during two seasons to account for seasonal variations in waste disposal patterns. The winter sampling occurred in mid-January, 2001 and the summer sampling occurred in mid-July, 2001. The planned and actual numbers of samples are listed in Table 40.

Table 40: Planned and Actual Numbers of Samples, by Sector

	Planned Number of Samples	Actual Number of Samples Sorted
Single-family residential	80	80
Winter	40	40
Summer	40	40
Construction/Demolition	160	160
Winter	80	61
Summer	80	99
Landscaping	80	83
Winter	40	42
Summer	40	41
Total	320	323

A.1.1.1 SINGLE-FAMILY RESIDENTIAL WASTE

Three sites were selected to provide single-family residential waste samples: Central LA Transfer (BFI), Bradley Landfill, and Sunshine Canyon Landfill. These three sites were deemed representative, because they receive more than 80% of Los Angeles’s disposed single-family waste, with the remaining waste split among four facilities. The numbers of samples collected at each of the three sites were allocated based on the relative tons of single-family waste disposed at each facility in 2000. Table 41 shows the actual number of single-family samples sorted at each facility in each season.

Table 41: Number of Single-Family Samples, by Site

	Single-Family Samples Sorted
Central LA Transfer	46
Winter	30
Summer	16
Sunshine Canyon Landfill	24
Winter	0
Summer	24
Bradley Landfill	10
Winter	10
Summer	0
Total	80

A.1.1.2 CONSTRUCTION AND DEMOLITION WASTE

Construction and demolition (C&D) waste consists of two subsectors – inert materials that are disposed at dedicated C&D landfills or C&D material that is disposed at standard municipal solid waste (MSW) facilities. Cascadia characterized each C&D subsector separately, as well as the total construction and demolition waste stream. In general, facilities were chosen which receive significant fractions of the total construction and

demolition waste disposed, based on a survey of all appropriate landfills and transfer stations.

The composition of C&D waste disposed at dedicated, inert fills was represented by samples obtained at the Nu-Way landfill. This landfill received about 90% of all inert C&D disposal from Los Angeles City in 2000, with the remaining 10% disposed at three other dedicated C&D landfills.

The composition of C&D loads disposed as MSW was characterized by obtaining samples at two landfills (Bradley and Calabasas) and one transfer station (Southgate – LACSD). An extensive survey of all appropriate landfills and transfer stations determined the quantity of C&D waste disposed at each facility. Over 95% of C&D waste disposed as MSW at landfills from Los Angeles is disposed at Bradley or Calabasas, so the composition of waste at these facilities is clearly representative. Samples were obtained at a transfer station because it was expected that the composition of C&D waste at these facilities might vary from that at the landfills.

Table 42 shows the actual number of C&D samples sorted at each facility in each season.

Table 42: Number of Construction/Demolition Samples, by Site

	Const/Demo Samples Sorted
Nu-Way Landfill	40
Winter	0
Summer	40
Calabasas Landfill	25
Winter	12
Summer	13
Bradley Landfill	85
Winter	49
Summer	36
South Gate Transfer	10
Winter	0
Summer	10
Total	160

A.1.1.3 LANDSCAPING WASTE

The composition of disposed (not recycled) landscaping industry (or do-it-yourself landscaper) waste was characterized by obtaining samples at two landfills (Bradley and Calabasas) and one transfer station (Southgate — LACSD). Over 95% of landscaping waste disposed at landfills from Los Angeles is disposed at Bradley or Calabasas, so the composition of waste at these facilities is clearly representative. Samples were also obtained at a transfer station because it was expected that the composition of landscaping waste at these facilities might vary from that at the landfills.

Table 43 shows the actual number of landscaping samples sorted at each facility in each season.

Table 43: Number of Landscaping Samples, by Site

	Landscaping Samples Sorted
Calabases Landfill	15
Winter	8
Summer	7
Bradley Landfill	58
Winter	34
Summer	24
South Gate Transfer	10
Winter	0
Summer	10
Total	83

A.1.2 ALLOCATION OF GENERATOR SAMPLES

A.1.2.1 ALLOCATION OF MULTIFAMILY SAMPLES

Eighty waste samples were allocated to the multifamily residential sector. This number represents twice the number of samples called for in the California Uniform Waste Characterization Method for residential waste characterization via generator samples. The planned and actual numbers of waste samples, as well as the number of waste characterization measurements, are presented in Table 44.

Table 44: Numbers of Samples and Waste Disposal Measurements Obtained from Multifamily Buildings

Planned Number of Samples	Number of Waste Samples Included in Analysis			Number of Generation Measurements Included in Analysis			Number of Sites Considered in Study
	Winter 2000-01	Summer 2001	Total Samples	Winter 2000-01	Summer 2001	Total Measurements	
80	44	45	89	35	42	77	86

A.1.2.2 ALLOCATION OF COMMERCIAL WASTE SAMPLES

This section describes the process of stratifying the commercial waste stream according to industry groups, based on the assumption that similar businesses dispose of waste with similar composition and at similar rates. *Industry groups* were identified and defined to be consistent with the categories of commercial, industrial, and institutional establishments that were used in both the 1999 California statewide waste characterization study and the 1995 City of Los Angeles waste characterization study. The list of industry groups was prioritized based on preliminary estimates of employment by industry group, which were derived through a procedure that was developed for the 1995 Los Angeles study. Waste samples were then allocated to the industry groups. The specific methods for these procedures are presented below.

A.1.2.2.1 DEVELOPING PRELIMINARY EMPLOYMENT ESTIMATES

The method for developing preliminary employment estimates by industry group essentially replicates the method described in the documentation for the 1995 waste characterization

study conducted by the City of Los Angeles². The preliminary employment estimates were used only for the purpose of allocating a fixed number of samples among industry groups. It should be noted that more accurate employment figures were obtained later for use in developing the waste composition analysis and tonnage projections that appear in this report. The preliminary employment estimation procedure is described below.

First, a set of zip codes was selected, such that their boundaries encompassed all of the City of Los Angeles. A list of all commercial, industrial, and institutional sites was then purchased from ABI, an national provider of mailing and marketing lists, for all sites that lay within the selected zip codes.

Each entry on the ABI list included a company name, street address, phone number, and information indicating which SIC (Standard Industrial Classification) group it belonged to, as well as a code designating a range for the number of employees at that company. Pertinent to the development of employment estimates, the possible size ranges that a company could belong to were as follows: 1 to 4 employees, 5 – 9, 10 – 19, 20 – 49, 50 – 99, 100 – 249, 250 – 499, 500 – 999, 1000 – 4999, 5000 – 9999, or 10000 – 14999.

Sites on the ABI list were assigned to their appropriate industry groups based on their SIC codes. Then, for each industry group, the number of sites belong to each employment size range was counted. The count of companies belonging to a particular size range, times the mid-point employment figure for that size range, produced a combined employment estimate for all companies belonging to that size range, in that industry group. The summation of employment estimates across size ranges provided an estimate of total Los Angeles employment for an entire industry group. The industry groups were then prioritized based on their estimated relative employment levels, as described in the following section.

A.1.2.2.2 PRIORITIZING INDUSTRY GROUPS AND ALLOCATING WASTE SAMPLES

First, groups that were estimated to represent more than 1% of total Los Angeles employment were assigned “major group” status. Major groups are listed as Groups 1 through 24 in Table 45 below. Groups that were estimated to represent less than 1% of total Los Angeles employment were assigned the status of “minor groups” and were clustered within *Group 25 – Other Industries*. Minor groups are listed as Groups 25.1 through 25.9 in Table 45 below.

Second, certain groups that were examined distinctly as part of the statewide study, but that were not examined distinctly during the 1995 Los Angeles study, were given the status of “minor” groups and were clustered. These additional minor groups are listed as Groups 1.1, 1.2, 1.3, 7.1, 7.2, 7.3, 7.4, 20.1, and 20.2 in Table 45 below.

In addition to the groups listed in Table 45, the study design called for 25 samples to be obtained from each of two specially constructed generator groups: *Shopping Malls* and *Large Office Buildings*.

² The procedure used to develop preliminary employment estimates by industry group is described in the Documentation of Generator Based Approach for Surveying and Waste Composition Sampling, Generator Based Approach – Step by Step Procedures, page 5.

A.1.2.2.3 PLANNED AND ACTUAL NUMBERS OF COMMERCIAL WASTE SAMPLES AND DISPOSAL MEASUREMENTS

Table 45 presents the planned and actual numbers of waste samples, as well as the number of waste disposal measurements for each industry group. The sorting of waste samples led to estimates of waste composition by group, while an analysis of waste disposal measurements produced citywide disposal tonnage estimates for each group.

When a commercial site appeared to produce multiple “substreams” of waste (e.g., cafeteria waste, office waste, etc.) that were associated with different waste containers, more than one sample was allocated to that site. Therefore, within a given industry group, the number of sites visited by the research team may not equal the number of waste samples obtained. In addition, the sites at which successful disposal measurements were obtained do not correspond exactly to the sites from which waste samples were obtained.

Table 45: Numbers of Commercial Waste Samples and Disposal Measurements Planned and Obtained

Industry Group	Planned Number of Samples	Number of Waste Samples Included in Analysis			Number of Generation Measurements Included in Analysis			Number of Sites Considered in Study
		Winter 2000-01	Summer 2001	Total Samples	Winter 2000-01	Summer 2001	Total Measurements	
1 Services – Other	40	14	30	44	11	28	39	36
1.1 Services – Other Miscellaneous		8	15	23	8	14	22	19
1.2 Services – Legal		7	7	14	7	7	14	7
1.3 Services – Other Professional		6	8	14	3	7	10	10
2 Services – Medical & Health	25	18	16	34	16	15	31	22
3 Finance, Insurance & Real Estate	25	7	17	24	8	16	24	23
4 Retail – Restaurants	25	16	11	27	15	10	25	25
5 Services – Business	25	12	13	25	11	12	23	23
6 Services – Education	25	23	15	38	18	13	31	27
7 Retail – Remainder	40	37	25	62	30	24	54	52
7.1 Retail Trade – Building Material & Garden		5	2	7	5	2	7	7
7.2 Retail Trade – General Merchandise Store		7	1	8	5	1	6	6
7.3 Retail Trade – Automotive Dealers & Service Stations		10	11	21	10	11	21	19
7.4 Retail Trade – Apparel and Furniture Stores		15	11	26	10	10	20	20
8 Wholesale Trade – Durable Goods	40	25	16	41	21	16	37	37
9 Wholesale Trade – Nondurable Goods	40	21	18	39	17	16	33	33
10 Government Facilities	40	16	26	42	17	22	39	33
11 Retail – Miscellaneous	40	18	23	41	16	23	39	37
12 Manufacturing – Printing & Publishing	25	17	9	26	16	8	24	23
13 Manufacturing – Apparel & Textile	25	17	8	25	15	7	22	21
14 Retail – Food Stores	25	14	13	27	13	13	26	25
15 Services – Motion Picture	25	12	22	34	9	22	31	24
16 Manufacturing – Transportation Equipment	40	16	23	39	17	23	40	38
17 Services – Hotel & Lodging	25	13	16	29	11	14	25	24
18 Manufacturing – Primary & Fabricated Metal	25	16	10	26	16	10	26	26
19 Other Transportation	40	16	25	41	14	24	38	37
20 Manufacturing – Other	40	28	16	44	24	16	40	40
20.1 Manufacturing – Lumber & Wood Products		5	1	6	4	1	5	5
20.2 Manufacturing – Other		23	15	38	20	15	35	35
21 Manufacturing – Instrument & Related Products	40	19	19	38	16	18	34	30
22 Communications	25	9	16	25	8	14	22	22
23 Manufacturing – Food & Kindred Products	25	19	12	31	12	10	22	19
24 Manufacturing – Electronic Equipment	25	18	13	31	18	13	31	29
25 Other Industries	50	33	34	67	28	32	60	55
25.1 Manufacturing – Industrial Machinery		7	6	13	6	6	12	10
25.2 Trucking & Warehousing		5	4	9	4	4	8	8
25.3 Manufacturing – Furniture & Fixtures		6	3	9	5	2	7	7
25.4 Utilities		2	6	8	1	5	6	5
25.5 Manufacturing – Chemical & Allied Products		3	5	8	2	5	7	7
25.6 Mining		2	4	6	2	4	6	6
25.7 Air Transportation		4	1	5	3	1	4	4
25.8 Agriculture, Forestry & Fisheries		2	4	6	2	4	6	5
25.9 Manufacturing – Paper & Allied Products		2	1	3	3	1	4	3
Overall Commercial Sector	800	454	446	900	397	419	816	761

The numbers of waste samples and numbers of sites visited for the *Shopping Malls* and *Large Office Buildings* industry groups are presented in Table 46.

Table 46: Sample Counts from Shopping Malls and Office Buildings

Industry Group	Planned Number of Samples	Number of Waste Samples Included in Analysis			Number of Sites Considered in Study
		Winter 2000-01	Summer 2001	Total Samples	
Shopping Malls	25	10	25	35	19
Office Buildings	25	11	12	23	25

A.2 RECRUITING SITES TO PARTICIPATE IN THE STUDY

The process of recruiting sites to participate and of collecting relevant data from them was fairly elaborate. First, listings of sites belonging to each category were obtained from a commercial list provider. Then, sites were contacted and screened to determine their cooperativeness and suitability for the study. If a site met the study's criteria, arrangements were made to obtain a waste sample as well as a measurement or estimate of the quantity of waste produced weekly, monthly, or annually. The process is described more thoroughly in the sections below.

A.2.1 SELECTION OF SITES

A list of all commercial, industrial, and institutional sites within the City of Los Angeles was purchased from American Business Information (ABI). A size designation (small, medium, or large) was given to each site on the list, according to the same formula used in the 1995 Los Angeles waste characterization study. Then, quotas were established for the numbers of sites to recruit from each industry group and each size group.

For certain generator groups, including Group 10 – Government Facilities and including some schools within Group 6 – Services – Education, some specific sites were designated by City staff for inclusion in the study. Besides the sites thus designated, additional sites were chosen from the ABI list to fulfill the sampling quotas.

A database record was created for each site in the ABI list, and the records were placed in a random order. Businesses and institutions within each industry group were contacted by letter and/or phone approximately in the order that they occurred in the database (i.e., in a random order).

To facilitate the recruitment of sites, approximately 10,000 letters were sent to businesses and institutions, requesting their participation in the waste study. Recruiters then followed up with phone calls requesting cooperation with the study.

A.2.2 RECRUITING OF BUSINESSES

Working from a shared database, several individuals in various locations in California and Washington recruited Los Angeles businesses and institutions to participate in the solid waste study. Recruitment was accomplished through the following steps, although the steps may have varied in sequence for particular candidates. If the recruiter discarded the

candidate site for any reason, or could not obtain the necessary information on the first phone call, the next business on the list for that industry group and size tier was contacted.

Step 1: Verify that the site was within City limits. Upon contacting the site, the recruiter verified that it was within City limits. Because the zip code boundaries differ from actual City boundaries in the Los Angeles area, and because the respondent did not always know whether his/her business was within Los Angeles City limits, it became important to verify location using Thomas Guide™ maps. Sites that were outside City limits were discarded.

Step 2: Gain permission to obtain a waste sample. The recruiter would attempt to speak with a manager or supervisor who could give permission for the site's trash to be sampled. If the contact refused sampling, the site was discarded.

Step 3: Obtain information about the site. The recruiter verified the address, name of the supervisor, contact phone number or extension, name of the business/institution, type of business/institution, number of employees, and hours and days of operation. Based on this information, the database was updated and the site's size designation (i.e., small, medium, or large) was updated as necessary. The number of employees was based on Full-Time Equivalents (FTE). For example, two half-time employees were considered as equal to one full-time employee.

Step 4: Obtain information about the handling of trash. Obtaining information about trash handling at the site often required speaking with someone other than the original contact. Information necessary for sampling included the number and size of dumpsters, the hauler name, the day and time of normal trash pick-up, and the procedure for accessing the dumpsters. If it was not possible to verify the pick-up schedule with the people working at the site, the recruiter called the hauler to try to obtain the information.

If the site had a compactor and had tonnage figures from the waste hauler, the recruiter used those for waste disposal rate information and arranged for a toter sample to obtain waste composition information. If the site did not have information about their waste disposal rate for a compactor, the recruiter contacted the hauler for the same information and then arranged for a composition sample to be taken from the site.

Many scenarios existed that required problem-solving on the part of the recruiter or sampling crew. If the dumpsters were not accessible, or if the site had a compactor but did not know how much trash was disposed, the recruiter might instruct the responsible person on-site in how to prepare a toter sample or a set-aside sample. If the hauler arrived early in the morning before business hours and the dumpster was locked outside of normal hours, or if the hauler pick-up time could not be accurately pinpointed, then the site might also be a candidate for a toter or set-aside sample. Also, if the hauler arrived early in the morning or late in the afternoon, outside the sampling crew's limited hours, then alternate arrangements might be made for sampling.

If the site shared trash service with one or more other sites (e.g., with other businesses in the same building), then the recruiter first determined whether the other nearby sites belonged to the same industry group as the site that was originally targeted. If so, then a sample of waste could be obtained and be considered representative of the waste disposed by that industry group. This situation occurred only rarely. More frequently, the recruiter arranged for a waste sample to be obtained directly from the site, excluding the waste from the nearby sites. This was usually done by arranging for a toter or set-aside sample. If the

site was in an office building and had a janitorial staff that handled the trash, the recruiter might contact the building management office. Contacting the property manager involved ensuring that the site had authorized the sampling of their trash and making specific arrangements about the time of drop-off and pick-up of plastic totes. The recruiter worked with the property manager to arrange for the isolation of the site's trash, and if necessary, the recruiter contacted the janitorial service to explain the purpose of the study and to coordinate the process for obtaining a sample.

If the site shared dumpsters and was a large site (i.e., in a day, it was expected to dispose far more than the three totes-full that comprised the standard waste sample), then the recruiter might arrange for only a portion of the site to be sampled. For example with a large accounting firm occupying numerous floors in an office building, the actual waste sample might come from the employees occupying just a portion of one floor. The waste disposal rate for the entire site was then extrapolated based on the total number of employees working at the site.

If distinct kinds of trash at the site were sent to distinct containers, so that sampling from one container would not be representative, then the site was considered to produce multiple "substreams" of waste. In those cases, the recruiter created more than one record for the site in the recruiting database, and specific sampling arrangements were established for each waste substream at the site.

If trash handling information was not available, the site was excluded from sampling.

Step 5: Preparing instructions for the sampling crew. Instructions for the sampling crew were written based on directions to the dumpster(s), hauler pick-up schedule, and procedure for accessing trash. They explained who to speak with to get access to the dumpster(s) if necessary. If the site required a tote or set-aside sample, the recruiter provided the sampling crew with the name of a specific person to contact at the site and an estimate of the amount of accumulation time that should be allowed for the sample.

The instructions recommended possible times and days for sampling. When possible, the sampling was scheduled for just before hauler pick-up. Otherwise, the crew instructions might specify to arrive the day before pick-up, after trash had been taken to the dumpsters for the day. This ensured that there would be an adequate amount of trash disposed and that the trash disposal cycle could be quantified based on the sample. Estimating trash based on some fraction of a cycle was less reliable. In other words, trash disposal is more likely to be consistent from day to day, or week to week, rather than from hour to hour.

Instructions to the sampling crews were recorded in the recruiting database, and an instruction form for each site to be visited was printed using the database. The instruction forms were then mailed or faxed to the sampling crew. An example of an instruction sheet for the sampling crew is presented in Figure 10 in Appendix E.

A.3 QUANTIFYING MSW FOR EACH SECTOR

The calculated tonnage of waste disposed by each of the five waste sectors considered in this study is shown in Table 2 and Table 3, which appear in the main body of the report. Descriptions of the calculation methods for those five sectors, plus self-hauled MSW and "other" waste, are provided in the sections below.

A.3.1 QUANTIFYING SINGLE-FAMILY RESIDENTIAL WASTE

To estimate the total amount of waste disposed by single-family residents of the City of Los Angeles, the Bureau of Sanitation calculated the sum of reported net weights for Bureau vehicles carrying primarily single-family residential waste to local MSW facilities. The calculated total of 863,640 tons is used in the present study to represent the amount of single-family residential waste disposed by the city in the year 2000.

In this study, single-family households are defined as households in buildings with 1, 2, 3, or 4 units, as well as mobile homes. It should be noted that a small but unknown portion of the waste that was counted as single-family was actually collected from multifamily residential sources – i.e., from buildings with more than 4 units.

A.3.2 QUANTIFYING CONSTRUCTION AND DEMOLITION WASTE

Construction and demolition waste was characterized for two subsectors: Inert C&D waste, disposed at dedicated, inert landfills; and C&D waste disposed at municipal solid waste (MSW) landfills and transfer stations. The total C&D waste disposed at inert landfills is reported by the CIWMB on its on-line Disposal Reporting System. The sum of the C&D waste disposed at the four inert facilities in 2000 is 364,703 tons. An additional 39,396 tons of asbestos and tires were disposed at the Azusa Land Reclamation Inc.'s special facilities for these materials, but these wastes will be considered under Other Waste, below.

To estimate the total C&D waste disposed as MSW, Cascadia conducted a survey of all MSW landfills and transfer stations that accept waste from within the Los Angeles city limits. The survey inquired about each facility's disposal of C&D, landscaping (green) and self-haul wastes. However, because Bradley and Calabasas landfills dispose such a large fraction of the total C&D waste disposed as MSW, Cascadia conducted gatehouse surveys at those facilities to determine the relative fraction of C&D waste they receive. (Please see Section A.3.7, *Vehicle Surveys*.) Total C&D waste disposed at those landfills was then estimated by considering the fraction of waste that was C&D from Los Angeles and the total waste disposed at each site as reported to the CIWMB. Through this process, Cascadia estimated that 71,335 tons of C&D waste were disposed at Calabasas and 17,158 tons were disposed at Bradley. Similar gatehouse surveys were conducted at the SouthGate (LACSD) and American Waste (Gardena) transfer stations to estimate their C&D waste. The total C&D waste disposed at MSW facilities, including that estimated by survey respondents, is 104,194 tons.

The total estimated C&D waste disposed is the sum of the inert and MSW subsectors, for a total of 468,897 tons.

A.3.3 QUANTIFYING LANDSCAPING WASTE

Landscaping waste hauled by landscaping contractors and private individuals was estimated in a manner similar to construction and demolition waste. Cascadia's survey of all MSW landfills and transfer stations that accept waste from within the Los Angeles city limits asked about green waste disposal. In addition, gatehouse surveys at the Calabasas and Bradley landfills and the SouthGate (LACSD) and American Waste (Gardena) transfer stations further quantified landscaping waste disposed at those facilities. (Please see Section A.3.7,

Vehicle Surveys.) It is estimated that 31,193 tons of landscaping waste from the City of Los Angeles were disposed in 2000.

A.3.4 QUANTIFYING MULTI-FAMILY RESIDENTIAL WASTE AND COMMERCIAL WASTE

Annual disposed tonnage of multi-family residential waste and commercial waste were estimated based on actual measurements of the amount of waste at selected sites shortly before the regular pick-up by the hauler. The procedure for measuring waste and calculating disposal for a typical site is described below.

- 1) Measurements were obtained for each dumpster or bin at the site that contained waste. The measurements included the length and width of the container, as well as the height of trash inside. Measurements were made to the nearest inch. When possible, waste measurements were taken at the same time that waste samples were obtained. However in many cases, a special crew was sent to the site expressly for the purpose of collecting waste disposal measurements. The **volume of waste in each dumpster** was calculated from the dimensional measurements.
- 2) The **volume of each sample** was measured in gallons when the sample was obtained from the participating site. Later, the recorded volume was converted from gallons to cubic yards. The weight of each sample also was calculated as the sum of the weight of all sorted components. From the combination of sample weight and sample volume, a density could be calculated for the waste in the sample.
- 3) The project team determined the **time it took for the observed waste to accumulate** (i.e., the time since the last pick-up). This was determined by either (a) asking the responsible party at the site or (b) extrapolating it from the regular pick-up schedule as reported previously by site personnel.
- 4) Based on the observations and measurements, a **waste disposal rate** was calculated for each site in units of cubic yards per week. It should be noted that some commercial sites were able to supply the researchers with waste disposal data in terms of cubic yards or tons per time period, based on hauler records and invoices.
- 5) An **average waste density** figure was calculated for each industry group and for multifamily buildings. The average waste density for an industry group was calculated as the sum of all sample weights divided by the sum of all sample volumes.
- 6) A city-wide waste disposal figure was calculated for all sites belonging to the industry group, and for all multifamily buildings. Slightly different calculation methods were used for industry groups versus apartment buildings, and the methods are described in the sections below.

A.3.4.1 QUANTITY CALCULATION FOR MULTIFAMILY BUILDINGS

For the multifamily buildings that were considered in the study, an average waste disposal figure was calculated in terms of the volume of waste disposed per apartment unit per year. The figure was calculated as the sum of projected volume of waste for all the participating multifamily buildings divided by the total number of units in all of the buildings. The average

volume of waste disposed per apartment unit per year was 16.89 cubic yards. Note that no correction was made to reflect an average vacancy rate of apartment units.

Next, the average volume of waste per apartment unit was multiplied by the average density of multifamily waste (110.14 pounds per cubic yard) to produce an average disposal of **0.93 tons per multifamily unit per year**. This figure describes an average refuse disposal rate for all existing apartment units, including occupied and vacant units.

Finally, the citywide waste disposal figure for multifamily buildings was calculated as the product of the average waste disposal per apartment unit times the reported 593,000 multifamily units that exist throughout the city. This produced an estimate of **551,650 tons of multifamily waste** disposed in the year 2000 in the City of Los Angeles.

A.3.4.2 QUANTITY CALCULATION FOR INDUSTRY GROUPS

A figure for waste disposal was calculated for the majority of sites participating in the study, based on either the waste disposal measurements or on hauler records that quoted specific tonnage or volume of waste disposed over a particular time period. In cases where the measurements were used, the projected volume of waste disposed annually at a site was multiplied by the average waste density for the relevant industry group, to produce a **projected tonnage of waste disposed by each site**.

Next, the following equation was used to estimate the tonnage of waste disposed annually by each industry group. This portion of the calculation method is identical to the method used in the City's 1995 solid waste study.

$$T_j = \frac{\sum_j \sum_i \frac{N_j}{n_j} T_{ij}}{\sum_j \sum_i \frac{N_j}{n_j} E_{ij}} \times E_j$$

where:

T_j = estimate of industry group's tonnage citywide

N_j = total number of sites in size group j within the industry group

n_j = number of sites that contributed waste disposal measurements to the study

T_{ij} = tonnage at i^{th} site in size group j within the industry group

E_{ij} = employment at i^{th} site in size group j within the industry group

E_j = independent estimate of overall employment for industry group j

The procedure for assigning each business to a size group (i.e., small, medium, or large) were identical to those used in the City's 1995 solid waste study.³

Values for E_j , the total citywide employment in each industry group, were obtained from the Labor Market Information Division, California Department of Labor and were based on an average of quarterly employment and payroll figures submitted to that agency for the calendar year 2000. Figures were obtained for the set of zip codes encompassing all of the City of Los Angeles, and those figures were scaled down in a normalized way to correspond to the area covered by the City of Los Angeles proper.

³ Documentation of Generator Based Approach for Surveying and Waste Composition Sampling, Generator Based Approach – Step by Step Procedures, page 5.

A.3.5 QUANTIFYING OTHER WASTE

Azusa Land Reclamation Inc. operates an ACW Disposal Site and a Major Waste Tire Facility in addition to its inert landfill for C&D waste. Azusa reported disposing 39,396 tons of asbestos and tires in 2000 at these facilities. Since these wastes are not easily assigned to any of the above sectors, they are included as Other Waste.

A.3.6 QUANTIFYING SELF-HAULED MSW

Self-hauled waste was not the specific focus of this study, and the research team did not gather primary data to quantify self-hauled waste. Rather, the team relied on secondary data to estimate the quantity of self-hauled MSW disposed in the City of Los Angeles. Two independent methods were used for the estimation, resulting in two different figures. The true quantity of self-hauled waste disposed in 2000 probably lies somewhere between the research team's estimates of 222,000 tons and 357,476 tons. The methods for developing the estimates are described below.

The first method of quantifying self-hauled MSW involved surveying MSW landfills and transfer stations that accept waste originating from within the City of Los Angeles. The total quantity of self-hauled MSW reported by those facilities was 222,000 tons for the year 2000. However, it is important to note that different facilities may employ different definitions of self-hauled waste. For example, waste that is self-hauled by city agencies might not be classified as self-hauled waste in the recordkeeping systems of the disposal facilities. This phenomenon could result in the estimate of 222,000 tons being too low.

The second method of quantifying self-hauled MSW involved subtracting the estimates for other waste sectors from the total 3,584,007 tons of disposed waste that were recorded for the City of Los Angeles in the CIWMB's Disposal Reporting System. After subtracting the estimated quantities for single-family, multifamily, commercial, construction/demolition, landscaping, and "other" waste, it was deduced that the remaining waste consisted of 357,476 tons of self-hauled MSW. However, it is important to remember that the estimates for all of the waste sectors mentioned here contain an element of uncertainty. For example, if the research team's estimate for commercial waste was too low, that would result in the deductive estimate of self-hauled MSW being too high.

The estimates of 222,000 tons and 357,476 tons of self-hauled MSW represent 6% and 9%, respectively, of the total waste disposed from the City of Los Angeles. In addition to those quantities, an estimated 82,000 tons of the construction, demolition, and landscaping waste that is described in previous sections of Appendix A was self-hauled. (This quantity is based on Cascadia's facility survey and the gatehouse surveys). Therefore, total 2000 self-hauled waste, including MSW, construction, demolition, and landscaping waste, is estimated at either 304,000 tons or 439,000 tons, depending on the method used. These figures represent 8% and 11% of the total disposed waste. For comparison, the CIWMB's 1999 Statewide Waste Characterization Study (conducted by Cascadia) estimated that self-hauled waste comprised 13.3% of waste in Southern California, an area that includes the City of Los Angeles.

A.3.7 VEHICLE SURVEYS

The objective of the vehicle surveys was to estimate the portion of City of Los Angeles waste disposed by the C&D and landscaping sectors. The vehicle surveys were conducted at two of three landfills selected to provide C&D and landscaping waste samples. No survey was conducted at the third site, because it is a dedicated inert landfill and all waste going there was assumed to be C&D. In addition, vehicle surveys were conducted at the American Waste – Gardena transfer station to more precisely estimate the portion of that transfer station’s throughput that was either C&D or landscaping waste.

A total of 216 surveys were completed. Table 47 presents the number of surveys conducted at each solid waste facility.

Table 47: Number of Vehicle Surveys Conducted at Each Site

Facility	Number of Surveys
Bradley	36
Calabasas	166
American Waste	14

The surveys were conducted at each sampling site on the same day that waste sampling occurred. The surveyor generally was on site for an eight-hour period.

The surveyor conducted a brief interview with the driver of each relevant vehicle entering the site, and he recorded the following data for each vehicle:

- information to enable identification of the weight of loads that did not have a tare weight on file at the scalehouse
- the weight of the contents as recorded by the scalehouse
- the type of vehicle
- the type of waste
- the percent of each waste type in the load, if it was a “mixed” load
- the hauler type (contractor/builder, landscaper, do-it-yourself hauler, or commercial hauler)

A copy of the form that was used to collect the data is included as Figure 9 in Appendix E.

A.4 OBTAINING WASTE SAMPLES

A.4.1 OBTAINING SAMPLES AT DISPOSAL SITES

At each site chosen for sampling, loads of single-family residential, C&D, and landscaping waste were systematically selected to ensure unbiased and reliable waste composition estimates. Systematic selection consists of taking every n^{th} vehicle after a random start time. To calculate truckload sampling frequency by sector and vehicle type, a sampling interval (n) was established for each. Prior to conducting waste sampling at a disposal site, the site coordinator ascertained the average number of municipal or commercial hauler vehicles delivering residential waste on a given day. This number was divided by the number of samples needed at each site. This determined the sampling interval. For example, if $n = 20$, the 20th, 40th, etc. truck was selected for sampling. On the day of the sampling, vehicle surveyors assisted the sampling crew by flagging every n^{th} truck and the driver was directed

to dump the load in a designated area. Figure 6 in Appendix E presents an example of one of the forms used to select vehicles systematically.

A.4.2 OBTAINING SAMPLES AT GENERATOR SITES

At most participating sites, a single, randomly chosen waste container was selected to provide the refuse that was included in the sample. In cases where there were two or more distinct waste streams at a site, one of the waste containers that was used for each distinct waste stream was chosen at random to provide the sample.

Samples were removed from dumpsters or similar waste containers so that a vertical cross section “slice” was taken that included waste from the top to the bottom of the container. When possible, the sampling crew obtained samples that were either 150 pounds or 1.5 cubic yards. As the sampling crew pulled each sample from the containers, they attempted to maintain the relative density of the material as the sample was captured (e.g. they would not place heavy waste from the bottom of the container on the top of a sample). Each waste sample was segregated, labeled, and transported to one of the nearby disposal sites, where it was sorted by hand into 58 material categories.

At the same time a waste sample was obtained, the sampling crew measured the volume of the sample (in terms of the extent to which the sample filled up the plastic totes used to transport it to the sorting area) and the volume of trash in each of the site’s dumpsters.

A.5 WASTE SORTING PROCEDURES

This section summarizes the general field procedures that were used at transfer stations and disposal sites. However, the specific protocols and procedures varied among sites so that the waste sampling and vehicle surveying were compatible with the operations of the site, and did not cause undue disruptions.

A.5.1 EXTRACTING SAMPLES FROM LOADS

A randomly selected load of single-family residential, C&D, or landscaping waste was dumped in an elongated pile. From the load, one waste sample was selected using an imaginary 16-cell grid superimposed over the dumped material. Then, with the assistance of the landfill’s loader operator, approximately 200 pounds of waste was removed by machine from the designated cell and placed on a tarp. If a loader was not available, samples were removed from the pile by hand.

A sample of commercial or multifamily waste was removed from the totes that were used to transport it to the sorting facility and was placed on a tarp for sorting.

A.5.2 SORTING SAMPLES

Once the sample was placed on a tarp, the material was sorted by hand into the prescribed 58 component categories. Plastic laundry baskets were used to contain the separated components. The sorting crew members typically specialize in groups of materials, such as papers or plastics, and sort from the baskets containing their specialty.

The manager of the sorting crew monitored the homogeneity of the component baskets as they accumulated, rejecting materials that were improperly classified. Open laundry baskets allowed the manager to see the material at all times. The manager also verified the purity of each component as it was weighed, before recording the weight into the database or on field sheets. The materials were sorted to the greatest reasonable level of detail by hand, until no more than a small amount of homogeneous fine material (“mixed residue”) remained. The overall goal was to sort each sample directly into component categories in order to reduce the amount of indistinguishable fines or miscellaneous categories.

A.5.3 RECORDING SAMPLE DATA

The manager of the sorting crew recorded composition weights on paper forms, examples of which are presented in Figure 8 and Figure 11 of Appendix E. Copies were made of the forms produced on each sorting day, and the originals were shipped to Cascadia’s home office for entry into a database. Random spot checks were conducted to ensure the accuracy of the data entry process.

A.5.4 HEALTH AND SAFETY PROTECTION

The sampling crew has an established, on-going safety and training program. Before sampling began at each site, the sampling crew first identified and discussed all of the unique hazards, emergency procedures, and operational restrictions that might be present. Sky Valley Associates, the contractor for waste sorting, maintains written safety procedures and conduct guidelines, including a Bloodborne Pathogen Exposure Control Plan. These procedures are updated whenever new safety information, products or regulations appear.

In addition to continued training and practice, the sampling crew used its own high-quality safety equipment, field gear, and scales.

A.6 ESTIMATING WASTE COMPOSITION FOR EACH SECTOR

Two separate methods were used to calculate waste composition, depending on how the waste samples were obtained. For the single-family residential, C&D, and landscaping sectors, waste samples were obtained from vehicles as they arrived at disposal facilities. The waste on those vehicles was considered to be “mixed up enough” so that a particular sample of waste could not be said to represent a specific household or business that generated it. Since no information was available to connect the size of a household or business with an individual waste sample, all waste samples from a particular sector were given equal importance – i.e., the samples were analyzed in an *unweighted* manner.

For the commercial sector, information generally *was* available to connect the magnitude of waste disposal at a site to the actual waste sample. Because some sites disposed far more waste than others, it is reasonable to assign relatively greater importance in the composition analysis to the waste samples originating at those large sites. The relative weighting factor that was used in analyzing the waste composition for commercial industry groups was the calculated *tons of waste disposed per week*.

A tons-per-week figure was assigned to each site, or in cases where multiple samples were obtained from a site, a figure was assigned to each sample. The tons-per-week figure was based on actual waste volume measurements, average waste density calculations by

industry group, and the volume and/or tonnage of waste that the survey team calculated as being disposed at each site. In cases where insufficient data had been collected to project a reliable waste disposal estimate for a site, the number of employees at the site was multiplied by an average per-employee waste disposal figure for that industry group to produce an extrapolation of the tons of waste disposed per week.

For the multifamily residential sector, it was determined that the waste disposal measurements for individual sites reflected a wider variation than was reasonable for the purpose of linking individual site disposal figures to individual samples. The reason for this variance was not determined with surety, but it was probably related to the uncertain and irregular time of day for most multifamily waste collection. Samples of multifamily waste were analyzed in an unweighted manner.

A similar problem occurred with the specially constructed groups of Large Office Buildings and Shopping Malls. With those groups, it frequently was impossible to access the dumpsters at an appropriate time to get disposal measurements (often true with office buildings), or it was impossible to obtain disposal measurements from all of the dumpsters and compactors serving all of the waste substreams (often true with shopping malls). Therefore, individual office buildings and shopping malls were not assigned relative weights in the waste composition calculations. Rather, all samples from the Office Building or the Shopping Mall groups were treated equally and analyzed in an unweighted manner.

A.6.1 COMPOSITION FROM DISPOSAL-SITE SAMPLES

A.6.1.1 COMPOSITION PERCENTS

This section describes the method for calculating the estimated mean composition and error range for each of 58 materials in the waste from the single-family residential, C&D, and landscaping sectors. The composition estimates represent the **ratio of the components' weight to the total waste** for each noted substream. They were 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 was derived in two steps. First, the variance around the estimate was calculated, accounting for the fact that the ratio included two random variables (the component and total sample weights). The **variance of the ratio estimator** equation follows:

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

where:

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

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

$$r_j \pm \left(t \cdot \sqrt{s^2_{r_j}}\right)$$

where:

t = the value of the t-statistic 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).

A.6.1.2 WEIGHTED AVERAGES

The overall construction and demolition, landscaping, and single-family residential waste composition estimates were calculated by performing weighted averages across the relevant subsectors. For the single-family residential sector, the overall estimate was calculated by performing a weighted average based on the tonnage hauled to each site.

For the landscaping sector, the overall estimate was calculated by performing a weighted average of the waste composition at landfills and the waste composition at transfer stations. In turn, waste composition at these two types of facilities was estimated using a weighted average of sampled facilities within each type.

For the construction and demolition sector, the overall estimate was calculated by performing a weighted average of the waste composition at dedicated, inert landfills and the waste composition at standard, MSW landfills and transfer stations. In turn, waste composition at these two types of facilities was estimated using a weighted average of sampled facilities within each type, where weighting factors were based on the tonnage hauled by each vehicle type (large or small) to each site..

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

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

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:

$$VarO_j = (p_1^2 * \bar{V}_{r_{j1}}^2) + (p_2^2 * \bar{V}_{r_{j2}}^2) + (p_3^2 * \bar{V}_{r_{j3}}^2) + \dots$$

A.6.2 COMPOSITION FROM GENERATOR SAMPLES

This section describes the method for calculating the estimated mean composition and error range for each of 58 materials in the waste from the commercial and multifamily residential sectors.

For each material at each site, a composition percent, p , was calculated as the weight of the material component, c , divided by the total weight of the sample, w . For each material, composition was calculated as follows within a single industry group.

$$\hat{p} = \frac{\sum_j \sum_i \frac{N_j}{n_j} T_{ij} p_{ij}}{\sum_j \sum_i \frac{N_j}{n_j} T_{ij}}$$

where:

\hat{p} = composition percent for the industry group (for a specific material)

p_{ij} = composition percent for the i^{th} site in the j^{th} size-tier

N_j = number of total sites in the j^{th} size-tier

n_j = number of sampled sites in the j^{th} size-tier

T_{ij} = Relative tonnage (tons disposed per week) at the i^{th} site in j^{th} size-tier

The standard deviation for the composition estimates was calculated as follows.

$$s^2 = \frac{\sum_j \sum_i \frac{N_j}{n_j} T_{ij} (p_{ij} - \hat{p})^2}{\sum_j \sum_i \frac{N_j}{n_j} T_{ij}}$$

where:

s^2 = standard deviation squared of composition percent (for a specific material)

Note, in the equation given above for calculating composition percent for each material, it is implied that the tonnage disposed by each site serves as the weighting factor that reflects the “importance” of that site in the calculations. For sites with multiple waste substreams, a waste sample was obtained from each of the substreams. For weighting purposes, a tonnage figure associated with each substream was used to weight each sample during the composition calculations.

APPENDIX B: FINDINGS FOR SUBGROUPS WITHIN THE COMMERCIAL SECTOR

This appendix presents results related to subgroups that were identified within the commercial sector. In part, the reason for distinguishing particular subgroups is to make the results of the present study comparable to other waste composition studies conducted under the guidelines established in the California Uniform Waste Disposal Characterization Method. Table 48 indicates the relationship of the industry subgroups to the primary groups described in this study. Composition findings related to industry subgroups are presented in Table 49 through Table 66. In addition, composition findings for Large Office Buildings and Shopping Malls are given in Table 67 and Table 68.

Table 48: Estimated Annual Commercial Waste Disposal, by Industry Subgroup

Industry Group and Subgroups	Estimated Annual Tons MSW	Estimated Employment	Estimated Tons per Employee per Year	Average Waste Density (pounds per cubic yard)
1 Services – Other	129,866	176,748	0.73	99
1.1 Services – Other Miscellaneous	91,790	90,060	1.02	96
1.2 Services – Legal	8,399	29,655	0.28	109
1.3 Services – Other Professional	29,677	57,033	0.52	101
7 Retail – Remainder	109,781	72,457	1.52	73
7.1 Retail Trade – Building Material & Garden	26,597	6,053	4.39	82
7.2 Retail Trade – General Merchandise Store	29,587	19,116	1.55	57
7.3 Retail Trade – Automotive Dealers & Service Stations	16,434	18,614	0.88	77
7.4 Retail Trade – Apparel and Furniture Stores	37,162	28,674	1.30	69
20 Manufacturing – Other	38,766	23,262	1.67	106
20.1 Manufacturing – Lumber & Wood Products	5,688	3,481	1.63	72
20.2 Manufacturing – Other	33,078	19,781	1.67	110
25 Other Industries	166,389	88,831	1.87	95
25.1 Manufacturing – Industrial Machinery	8,511	10,183	0.84	86
25.2 Trucking & Warehousing	10,369	13,511	0.77	96
25.3 Manufacturing – Furniture & Fixtures	60,913	9,549	6.38	101
25.4 Utilities	1,146	3,797	0.30	107
25.5 Manufacturing – Chemical & Allied Products	9,285	9,940	0.93	78
25.6 Mining	726	1,006	0.72	101
25.7 Air Transportation	25,719	29,410	0.87	81
25.8 Agriculture, Forestry & Fisheries	46,823	8,521	5.50	122
25.9 Manufacturing – Paper & Allied Products	2,898	2,914	0.99	85

Table 49: Composition of Waste from Subgroup 1.1, Services – Other Miscellaneous

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	31.2%	5.6%	28,658	Other Organic	37.7%	7.3%	34,603
Uncoated Corrugated Cardboard	4.7%	2.2%	4,303	Food	15.0%	12.3%	13,743
Paper Bags	0.9%	0.5%	813	Leaves & Grass	2.5%	6.2%	2,319
Newspaper	3.9%	2.7%	3,619	Prunings & Trimmings	0.0%	0.0%	4
White Ledger Paper	3.2%	2.1%	2,967	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.1%	140	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.4%	134	Manures	0.0%	0.0%	0
Other Office Paper	1.1%	0.8%	970	Textiles	7.5%	8.7%	6,840
Magazines and Catalogs	3.3%	2.7%	3,075	Remainder/Composite Organic	12.7%	7.5%	11,696
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	4.1%	1.0%	3,750	Construction & Demolition	2.0%	2.4%	1,797
Remainder/Composite Paper	9.7%	2.6%	8,889	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	2.7%	0.9%	2,475	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.7%	1.0%	1,536	Lumber	0.4%	0.6%	323
Green Glass Bottles & Containers	0.1%	0.4%	82	Gypsum Board	0.0%	0.1%	25
Brown Glass Bottles & Containers	0.1%	0.1%	77	Rock, Soil & Fines	0.2%	0.8%	187
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	1.4%	3.2%	1,263
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.8%	0.9%	780	Hazardous Waste	0.0%	0.0%	26
				Paint	0.0%	0.0%	0
Metal	7.0%	7.3%	6,396	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.8%	0.6%	709	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.1%	16
Other Ferrous Metal	2.3%	2.7%	2,106	Remainder/Composite HW	0.0%	0.0%	10
Aluminum Cans	0.4%	0.5%	399				
Other Non-Ferrous Metal	0.5%	0.5%	425	Special Waste	1.0%	2.1%	934
Remainder/Composite Metal	2.5%	4.0%	2,322	Ash	1.0%	3.5%	934
Electronics	0.5%	1.8%	435	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	17.3%	4.7%	15,855	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	3.3%	4.4%	3,021	Bulky Items	0.0%	0.0%	0
PETE Containers	1.0%	0.5%	915	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.8%	0.5%	734	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	8.7%	4.5%	7,968				
Durable Plastic Items	1.0%	1.6%	929	Mixed Residue	1.1%	0.7%	1,046
Remainder/Composite Plastic	2.5%	0.9%	2,298				
				Totals	100.0%		91,790
				Sample count:	23		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 50: Composition of Waste from Subgroup 1.2, Services – Legal

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	71.1%	15.2%	5,972	Other Organic	13.9%	7.1%	1,167
Uncoated Corrugated Cardboard	3.7%	1.8%	311	Food	13.7%	9.1%	1,150
Paper Bags	0.6%	0.5%	50	Leaves & Grass	0.1%	0.1%	8
Newspaper	4.6%	3.6%	386	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	22.1%	25.0%	1,855	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	1.5%	3.4%	124	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.4%	0.4%	31	Manures	0.0%	0.0%	0
Other Office Paper	7.2%	3.5%	606	Textiles	0.1%	0.1%	7
Magazines and Catalogs	7.8%	2.2%	656	Remainder/Composite Organic	0.0%	0.0%	2
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	7.1%	3.3%	599	Construction & Demolition	0.0%	0.0%	0
Remainder/Composite Paper	16.1%	7.5%	1,353	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.2%	1.2%	99	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.5%	0.5%	44	Lumber	0.0%	0.0%	0
Green Glass Bottles & Containers	0.7%	0.7%	55	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	0	Hazardous Waste	0.0%	0.1%	1
				Paint	0.0%	0.0%	1
Metal	4.1%	3.6%	342	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.5%	0.5%	46	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.4%	2.8%	38	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.3%	0.2%	25				
Other Non-Ferrous Metal	0.0%	0.0%	4	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	2.7%	2.7%	229	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	9.2%	5.2%	770	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.2%	17	Bulky Items	0.0%	0.0%	0
PETE Containers	0.6%	0.5%	49	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.1%	0.7%	91	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.2%	2.9%	356				
Durable Plastic Items	1.5%	1.3%	124	Mixed Residue	0.6%	0.6%	48
Remainder/Composite Plastic	1.6%	1.2%	133				
				Totals	100.0%		8,399
				Sample count:	7		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 51: Composition of Waste from Subgroup 1.3, Services – Other Professional

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	42.0%	15.1%	12,474	Other Organic	11.8%	2.2%	3,510
Uncoated Corrugated Cardboard	4.2%	2.1%	1,248	Food	7.4%	3.7%	2,199
Paper Bags	0.4%	0.2%	110	Leaves & Grass	1.7%	1.6%	499
Newspaper	4.2%	2.7%	1,261	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	8.3%	5.1%	2,462	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.4%	59	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.2%	0.2%	62	Manures	0.0%	0.0%	0
Other Office Paper	2.5%	1.8%	734	Textiles	1.7%	2.9%	513
Magazines and Catalogs	2.0%	2.7%	606	Remainder/Composite Organic	1.0%	0.3%	298
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	4.6%	3.3%	1,369	Construction & Demolition	10.5%	10.3%	3,121
Remainder/Composite Paper	15.4%	5.1%	4,563	Concrete	0.2%	0.5%	55
				Asphalt Paving	0.0%	0.0%	0
Glass	0.6%	0.6%	186	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.6%	0.5%	163	Lumber	6.5%	11.3%	1,917
Green Glass Bottles & Containers	0.0%	0.0%	1	Gypsum Board	1.9%	3.4%	575
Brown Glass Bottles & Containers	0.0%	0.1%	8	Rock, Soil & Fines	0.2%	0.6%	62
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	1.7%	1.8%	513
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.1%	13	Hazardous Waste	1.9%	2.5%	558
				Paint	0.1%	0.1%	16
Metal	2.7%	1.9%	800	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.6%	0.7%	189	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.7%	0.6%	211	Remainder/Composite HW	1.8%	3.1%	541
Aluminum Cans	0.1%	0.1%	22				
Other Non-Ferrous Metal	0.3%	0.2%	101	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.8%	1.4%	251	Ash	0.0%	0.0%	0
Electronics	0.1%	0.2%	26	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	29.0%	15.8%	8,597	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.7%	1.5%	202	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.2%	132	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.7%	0.3%	204	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	7.6%	5.6%	2,269				
Durable Plastic Items	0.8%	0.9%	251	Mixed Residue	1.5%	0.8%	431
Remainder/Composite Plastic	18.7%	26.7%	5,539				
				Totals	100.0%		29,677
				Sample count:	14		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 52: Composition of Waste from Subgroup 7.1, Retail Trade – Building Material and Garden

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	18.0%	17.8%	4,800	Other Organic	2.8%	7.7%	745
Uncoated Corrugated Cardboard	6.8%	3.4%	1,800	Food	2.0%	5.1%	533
Paper Bags	0.2%	0.4%	60	Leaves & Grass	0.0%	0.0%	0
Newspaper	4.6%	11.7%	1,222	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	0.5%	1.1%	128	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	1.0%	3.5%	263	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	1	Manures	0.0%	0.0%	0
Other Office Paper	0.4%	0.9%	118	Textiles	0.5%	1.7%	129
Magazines and Catalogs	0.1%	0.3%	24	Remainder/Composite Organic	0.3%	0.6%	83
Phone Books and Directories	0.1%	0.5%	38				
Other Miscellaneous Paper	1.9%	1.5%	514	Construction & Demolition	42.8%	36.4%	11,396
Remainder/Composite Paper	2.4%	4.2%	632	Concrete	2.7%	8.9%	719
				Asphalt Paving	0.0%	0.0%	0
Glass	2.1%	5.5%	567	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.7%	1.4%	179	Lumber	37.6%	33.2%	9,998
Green Glass Bottles & Containers	0.0%	0.0%	0	Gypsum Board	0.1%	0.3%	25
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	2.2%	8.0%	596
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.2%	0.8%	58
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	1.5%	3.8%	388	Hazardous Waste	0.2%	0.9%	54
				Paint	0.0%	0.0%	0
Metal	4.3%	6.1%	1,135	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.3%	36	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.1%	6
Other Ferrous Metal	3.2%	3.0%	848	Remainder/Composite HW	0.2%	0.6%	47
Aluminum Cans	0.0%	0.1%	8				
Other Non-Ferrous Metal	0.4%	1.5%	113	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.5%	1.5%	130	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	29.3%	21.8%	7,805	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.4%	41	Bulky Items	0.0%	0.0%	0
PETE Containers	0.0%	0.1%	9	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.2%	28	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	12.1%	8.1%	3,209				
Durable Plastic Items	7.6%	19.1%	2,014	Mixed Residue	0.4%	0.9%	95
Remainder/Composite Plastic	9.4%	7.4%	2,503				
				Totals	100.0%		26,597
				Sample count:		7	

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 53: Composition of Waste from Subgroup 7.2 Retail Trade – General Merchandise Stores

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	66.0%	18.5%	19,531	Other Organic	10.5%	5.5%	3,119
Uncoated Corrugated Cardboard	39.1%	31.4%	11,557	Food	8.2%	2.3%	2,435
Paper Bags	0.7%	0.3%	211	Leaves & Grass	1.1%	3.5%	322
Newspaper	1.7%	1.0%	512	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	0.4%	0.4%	109	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	3	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.3%	0.6%	90	Manures	0.0%	0.0%	0
Other Office Paper	0.2%	0.3%	56	Textiles	0.1%	0.3%	38
Magazines and Catalogs	0.8%	0.4%	247	Remainder/Composite Organic	1.1%	0.7%	324
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	11.3%	6.0%	3,345	Construction & Demolition	0.8%	2.1%	228
Remainder/Composite Paper	11.5%	12.6%	3,401	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.8%	1.3%	532	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.9%	0.6%	278	Lumber	0.0%	0.0%	4
Green Glass Bottles & Containers	0.8%	0.8%	243	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.1%	11	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.8%	2.0%	223
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	0	Hazardous Waste	0.1%	0.1%	39
				Paint	0.0%	0.0%	0
Metal	2.0%	2.0%	603	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.0%	0.0%	0	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	39
Other Ferrous Metal	0.1%	0.0%	18	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.7%	1.1%	221				
Other Non-Ferrous Metal	1.0%	1.2%	284	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.3%	0.3%	81	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	18.6%	14.2%	5,500	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.4%	0.3%	109	Bulky Items	0.0%	0.0%	0
PETE Containers	0.7%	0.5%	202	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.2%	1.3%	351	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	6.5%	6.3%	1,935				
Durable Plastic Items	1.8%	1.6%	534	Mixed Residue	0.1%	0.4%	36
Remainder/Composite Plastic	8.0%	8.0%	2,370				
				Totals	100.0%		29,587
				Sample count:	8		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 54: Composition of Waste from Subgroup 7.3, Retail Trade – Automotive Dealers and Service Stations

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	41.0%	6.3%	6,736	Other Organic	22.4%	5.5%	3,682
Uncoated Corrugated Cardboard	8.3%	2.2%	1,365	Food	12.3%	3.8%	2,028
Paper Bags	0.6%	0.4%	105	Leaves & Grass	3.5%	4.1%	578
Newspaper	4.8%	1.6%	782	Prunings & Trimmings	0.1%	0.1%	15
White Ledger Paper	2.1%	0.6%	345	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.1%	7	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.8%	0.6%	134	Manures	0.0%	0.0%	0
Other Office Paper	2.4%	1.7%	397	Textiles	2.6%	4.9%	425
Magazines and Catalogs	1.4%	1.1%	237	Remainder/Composite Organic	3.9%	2.9%	635
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	5.4%	1.9%	893	Construction & Demolition	1.7%	1.6%	272
Remainder/Composite Paper	15.0%	5.4%	2,472	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	2.3%	1.0%	373	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.8%	1.2%	297	Lumber	0.8%	1.1%	135
Green Glass Bottles & Containers	0.2%	0.3%	40	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.2%	19	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	3	Remainder/Composite C&D	0.8%	1.9%	137
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.1%	0.1%	14	Hazardous Waste	0.9%	0.9%	148
				Paint	0.0%	0.0%	1
Metal	14.5%	5.8%	2,385	Vehicle & Equipment Fluids	0.1%	0.1%	15
Tin/Steel Cans	2.1%	4.2%	347	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.2%	0.2%	29
Other Ferrous Metal	5.7%	6.6%	938	Remainder/Composite HW	0.6%	1.4%	104
Aluminum Cans	0.5%	0.3%	86				
Other Non-Ferrous Metal	0.2%	0.1%	40	Special Waste	1.4%	2.8%	237
Remainder/Composite Metal	5.9%	2.2%	973	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	14.9%	3.6%	2,455	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	2.6%	1.2%	427	Bulky Items	0.0%	0.0%	0
PETE Containers	0.8%	0.3%	129	Tires	1.4%	3.8%	237
Miscellaneous Plastic Containers	0.8%	0.3%	124	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	5.6%	3.2%	926				
Durable Plastic Items	1.3%	0.8%	221	Mixed Residue	0.9%	0.4%	145
Remainder/Composite Plastic	3.8%	3.6%	627				
				Totals	100.0%		16,434
				Sample count:	21		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 55: Composition of Waste from Subgroup 7.4, Retail Trade – Apparel and Furniture Stores

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	35.9%	24.1%	13,356	Other Organic	30.4%	24.2%	11,315
Uncoated Corrugated Cardboard	8.5%	17.4%	3,171	Food	2.9%	2.0%	1,070
Paper Bags	0.2%	0.2%	89	Leaves & Grass	0.0%	0.2%	13
Newspaper	3.5%	4.8%	1,316	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	3.9%	5.0%	1,460	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.1%	12	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	2.8%	4.3%	1,032	Manures	0.0%	0.0%	0
Other Office Paper	1.7%	2.3%	621	Textiles	2.5%	6.2%	917
Magazines and Catalogs	1.3%	1.2%	474	Remainder/Composite Organic	25.1%	24.5%	9,315
Phone Books and Directories	0.1%	0.5%	35				
Other Miscellaneous Paper	6.6%	2.5%	2,447	Construction & Demolition	14.1%	9.9%	5,231
Remainder/Composite Paper	7.3%	5.7%	2,699	Concrete	1.6%	7.4%	579
				Asphalt Paving	0.0%	0.0%	0
Glass	0.4%	0.5%	165	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.3%	0.2%	104	Lumber	11.1%	10.0%	4,119
Green Glass Bottles & Containers	0.0%	0.0%	2	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	2	Rock, Soil & Fines	1.2%	5.8%	452
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.2%	0.4%	82
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.2%	0.4%	56	Hazardous Waste	0.4%	1.0%	165
				Paint	0.0%	0.0%	0
Metal	4.7%	4.8%	1,749	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.1%	42	Used Oil	0.4%	1.9%	148
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.1%	17
Other Ferrous Metal	1.3%	2.0%	480	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.1%	0.1%	46				
Other Non-Ferrous Metal	0.0%	0.1%	18	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	3.1%	5.0%	1,163	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	12.7%	12.4%	4,702	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.3%	41	Bulky Items	0.0%	0.0%	0
PETE Containers	0.3%	0.3%	103	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.3%	0.2%	118	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.1%	3.7%	1,507				
Durable Plastic Items	4.4%	15.8%	1,619	Mixed Residue	1.3%	1.7%	478
Remainder/Composite Plastic	3.5%	2.7%	1,315				
				Totals	100.0%		37,162
				Sample count:	26		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 56: Composition of Waste from Subgroup 20.1, Manufacturing – Lumber and Wood Products

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	58.0%	18.4%	3,300	Other Organic	3.5%	1.6%	197
Uncoated Corrugated Cardboard	6.9%	0.6%	390	Food	3.0%	1.5%	171
Paper Bags	0.3%	0.3%	20	Leaves & Grass	0.0%	0.0%	1
Newspaper	2.4%	2.4%	136	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	1.7%	1.1%	97	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	0	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	14.4%	25.9%	820	Manures	0.0%	0.0%	0
Other Office Paper	7.7%	13.3%	437	Textiles	0.1%	0.2%	8
Magazines and Catalogs	0.0%	0.0%	0	Remainder/Composite Organic	0.3%	0.3%	17
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	22.0%	20.8%	1,254	Construction & Demolition	14.9%	3.9%	850
Remainder/Composite Paper	2.6%	1.7%	146	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	14.1%	13.2%	802	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.9%	0.1%	51	Lumber	4.3%	2.9%	243
Green Glass Bottles & Containers	0.0%	0.0%	0	Gypsum Board	0.2%	0.4%	14
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	7.6%	3.0%	431
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	2.8%	3.9%	161
Flat Glass	4.5%	4.5%	258				
Remainder/Composite Glass	8.7%	8.7%	492	Hazardous Waste	0.0%	0.0%	0
				Paint	0.0%	0.0%	0
Metal	2.3%	1.2%	134	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.2%	7	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	2.0%	1.2%	115	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.1%	0.0%	4				
Other Non-Ferrous Metal	0.1%	0.0%	8	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.0%	0.0%	0	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	7.2%	4.4%	407	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.3%	0.4%	18	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.1%	21	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.1%	7	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	1.8%	0.7%	105				
Durable Plastic Items	0.0%	0.0%	2	Mixed Residue	0.0%	0.0%	0
Remainder/Composite Plastic	4.5%	4.3%	254				
				Totals	100.0%		5,688
				Sample count:	6		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 57: Composition of Waste from Subgroup 20.2, Manufacturing – Other Miscellaneous

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	19.1%	13.1%	6,313	Other Organic	5.7%	4.1%	1,877
Uncoated Corrugated Cardboard	5.6%	8.7%	1,856	Food	2.5%	1.8%	813
Paper Bags	1.0%	0.5%	316	Leaves & Grass	0.2%	0.3%	69
Newspaper	0.6%	0.5%	209	Prunings & Trimmings	0.0%	0.0%	1
White Ledger Paper	2.0%	1.5%	658	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	39	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.5%	0.6%	181	Manures	0.0%	0.0%	0
Other Office Paper	1.5%	1.2%	491	Textiles	1.3%	2.2%	442
Magazines and Catalogs	0.7%	0.6%	219	Remainder/Composite Organic	1.7%	2.0%	551
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	2.2%	1.8%	730	Construction & Demolition	54.1%	20.9%	17,898
Remainder/Composite Paper	4.9%	3.4%	1,614	Concrete	1.8%	3.8%	599
				Asphalt Paving	0.0%	0.0%	0
Glass	6.7%	9.0%	2,216	Asphalt Roofing	0.0%	0.0%	6
Clear Glass Bottles & Containers	0.2%	0.2%	62	Lumber	18.8%	11.9%	6,231
Green Glass Bottles & Containers	1.0%	1.5%	336	Gypsum Board	0.1%	0.1%	18
Brown Glass Bottles & Containers	0.4%	0.5%	118	Rock, Soil & Fines	2.0%	3.2%	668
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	31.4%	23.4%	10,376
Flat Glass	5.1%	7.8%	1,697				
Remainder/Composite Glass	0.0%	0.0%	3	Hazardous Waste	0.0%	0.0%	3
				Paint	0.0%	0.0%	0
Metal	1.7%	1.3%	562	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.2%	0.2%	77	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	3
Other Ferrous Metal	1.2%	1.2%	405	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.1%	0.1%	32				
Other Non-Ferrous Metal	0.0%	0.0%	15	Special Waste	0.4%	1.1%	144
Remainder/Composite Metal	0.1%	0.1%	33	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.6%	5.0%	3,825	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.1%	24	Bulky Items	0.4%	1.0%	144
PETE Containers	0.2%	0.2%	61	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.1%	30	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	6.0%	3.3%	1,983				
Durable Plastic Items	1.4%	1.7%	450	Mixed Residue	0.7%	0.7%	241
Remainder/Composite Plastic	3.9%	3.3%	1,279				
				Totals	100.0%		33,078
				Sample count:		38	

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 58: Composition of Waste from Subgroup 25.1, Manufacturing – Industrial Machinery

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	49.3%	15.6%	4,196	Other Organic	7.8%	4.8%	664
Uncoated Corrugated Cardboard	10.3%	2.9%	875	Food	3.1%	1.6%	266
Paper Bags	0.8%	0.2%	65	Leaves & Grass	1.1%	2.3%	96
Newspaper	8.4%	3.7%	712	Prunings & Trimmings	0.1%	0.0%	5
White Ledger Paper	2.8%	1.1%	236	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	5	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	6	Manures	0.0%	0.0%	0
Other Office Paper	2.3%	1.8%	199	Textiles	1.4%	1.3%	122
Magazines and Catalogs	4.1%	2.8%	349	Remainder/Composite Organic	2.1%	1.9%	175
Phone Books and Directories	3.2%	2.6%	272				
Other Miscellaneous Paper	2.2%	0.7%	185	Construction & Demolition	10.8%	8.0%	922
Remainder/Composite Paper	15.2%	8.9%	1,292	Concrete	3.1%	6.2%	262
				Asphalt Paving	0.0%	0.0%	0
Glass	0.5%	0.6%	42	Asphalt Roofing	0.2%	0.2%	15
Clear Glass Bottles & Containers	0.3%	0.3%	26	Lumber	5.8%	5.6%	490
Green Glass Bottles & Containers	0.0%	0.0%	1	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.1%	0.1%	5	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	1.8%	1.8%	154
Flat Glass	0.1%	0.2%	7				
Remainder/Composite Glass	0.0%	0.1%	3	Hazardous Waste	2.7%	4.6%	228
				Paint	0.2%	0.4%	20
Metal	7.6%	5.7%	644	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.4%	0.4%	34	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	3
Other Ferrous Metal	3.2%	3.3%	271	Remainder/Composite HW	2.4%	5.0%	206
Aluminum Cans	0.2%	0.1%	13				
Other Non-Ferrous Metal	2.5%	2.5%	213	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	1.3%	1.6%	109	Ash	0.0%	0.0%	0
Electronics	0.0%	0.1%	4	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	19.3%	9.4%	1,638	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.9%	1.0%	76	Bulky Items	0.0%	0.0%	0
PETE Containers	0.5%	0.4%	41	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.1%	18	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	3.0%	0.7%	254				
Durable Plastic Items	10.7%	8.8%	913	Mixed Residue	2.1%	1.9%	177
Remainder/Composite Plastic	3.9%	2.1%	336				
				Totals	100.0%		8,511
				Sample count:	13		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 59: Composition of Waste from Subgroup 25.2, Trucking and Warehousing

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	38.5%	28.7%	3,995	Other Organic	7.5%	1.3%	774
Uncoated Corrugated Cardboard	6.4%	6.2%	661	Food	5.7%	2.0%	591
Paper Bags	0.2%	0.2%	20	Leaves & Grass	0.0%	0.0%	0
Newspaper	1.3%	1.3%	137	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	4.7%	5.0%	483	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.2%	14	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	6.0%	7.3%	623	Manures	0.0%	0.0%	0
Other Office Paper	6.3%	6.2%	652	Textiles	1.4%	1.3%	141
Magazines and Catalogs	2.3%	3.4%	242	Remainder/Composite Organic	0.4%	0.4%	43
Phone Books and Directories	0.0%	0.0%	4				
Other Miscellaneous Paper	2.1%	0.4%	214	Construction & Demolition	14.5%	5.5%	1,502
Remainder/Composite Paper	9.1%	7.3%	945	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.5%	0.8%	158	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.8%	1.1%	87	Lumber	7.0%	8.5%	722
Green Glass Bottles & Containers	0.0%	0.0%	2	Gypsum Board	0.1%	0.3%	14
Brown Glass Bottles & Containers	0.0%	0.0%	2	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	1	Remainder/Composite C&D	7.4%	7.1%	765
Flat Glass	0.4%	0.4%	42				
Remainder/Composite Glass	0.2%	0.4%	24	Hazardous Waste	0.1%	0.1%	15
				Paint	0.0%	0.0%	0
Metal	25.4%	25.1%	2,631	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.1%	11	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.1%	0.1%	6
Other Ferrous Metal	0.6%	0.5%	61	Remainder/Composite HW	0.1%	0.1%	9
Aluminum Cans	0.1%	0.1%	13				
Other Non-Ferrous Metal	0.2%	0.1%	17	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	24.4%	24.4%	2,529	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.9%	5.2%	1,232	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.1%	16	Bulky Items	0.0%	0.0%	0
PETE Containers	0.7%	0.8%	71	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.5%	0.3%	47	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.6%	4.3%	480				
Durable Plastic Items	4.1%	3.4%	422	Mixed Residue	0.6%	0.6%	61
Remainder/Composite Plastic	1.9%	0.4%	197				
				Totals	100.0%		10,369
				Sample count:	9		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 60: Composition of Waste from Subgroup 25.3, Manufacturing – Furniture and Fixtures

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	21.6%	20.5%	13,133	Other Organic	58.3%	30.0%	35,524
Uncoated Corrugated Cardboard	3.9%	3.2%	2,396	Food	5.1%	4.1%	3,120
Paper Bags	0.0%	0.2%	28	Leaves & Grass	0.6%	0.7%	336
Newspaper	0.4%	1.5%	254	Prunings & Trimmings	0.0%	0.0%	0
White Ledger Paper	0.1%	0.2%	81	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	5	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0	Manures	0.0%	0.0%	0
Other Office Paper	0.1%	0.2%	91	Textiles	8.9%	20.8%	5,411
Magazines and Catalogs	0.2%	0.3%	124	Remainder/Composite Organic	43.8%	40.8%	26,657
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	0.8%	0.9%	497	Construction & Demolition	9.2%	13.4%	5,626
Remainder/Composite Paper	15.9%	19.6%	9,658	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	0.1%	0.4%	61	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.0%	0.2%	30	Lumber	9.2%	12.6%	5,624
Green Glass Bottles & Containers	0.0%	0.0%	0	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.1%	22	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.0%	2
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.1%	8	Hazardous Waste	0.0%	0.0%	5
				Paint	0.0%	0.0%	0
Metal	2.9%	3.1%	1,747	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.2%	35	Used Oil	0.0%	0.0%	5
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	2.8%	3.1%	1,679	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.0%	0.0%	2				
Other Non-Ferrous Metal	0.0%	0.1%	18	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.0%	0.1%	13	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	7.3%	6.9%	4,417	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.3%	0.3%	164	Bulky Items	0.0%	0.0%	0
PETE Containers	0.3%	0.4%	189	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.0%	0.0%	18	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.4%	5.3%	2,671				
Durable Plastic Items	0.3%	0.3%	174	Mixed Residue	0.7%	0.8%	400
Remainder/Composite Plastic	2.0%	1.6%	1,201				
				Totals	100.0%		60,913
				Sample count:	9		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 61: Composition of Waste from Subgroup 25.4, Utilities

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	39.3%	20.0%	450	Other Organic	28.3%	16.7%	324
Uncoated Corrugated Cardboard	3.4%	2.3%	39	Food	14.3%	4.4%	164
Paper Bags	0.2%	0.1%	3	Leaves & Grass	9.6%	12.4%	111
Newspaper	8.4%	7.2%	96	Prunings & Trimmings	2.5%	2.5%	29
White Ledger Paper	4.6%	6.6%	53	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.2%	1	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.1%	0.1%	1	Manures	0.0%	0.0%	0
Other Office Paper	0.8%	1.9%	9	Textiles	0.2%	0.9%	3
Magazines and Catalogs	1.7%	3.8%	19	Remainder/Composite Organic	1.7%	7.1%	19
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	2.7%	1.4%	31	Construction & Demolition	4.6%	21.2%	53
Remainder/Composite Paper	17.3%	11.3%	198	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	1.0%	1.7%	11	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.8%	1.3%	9	Lumber	0.4%	1.3%	5
Green Glass Bottles & Containers	0.0%	0.0%	0	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.1%	0	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	4.2%	20.0%	48
Flat Glass	0.1%	0.6%	1				
Remainder/Composite Glass	0.1%	0.1%	1	Hazardous Waste	0.1%	0.3%	1
				Paint	0.0%	0.0%	0
Metal	14.1%	13.1%	161	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	1.1%	1.0%	13	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.8%	0.7%	9	Remainder/Composite HW	0.0%	0.4%	1
Aluminum Cans	0.4%	0.3%	4				
Other Non-Ferrous Metal	1.1%	1.1%	13	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	10.7%	10.3%	122	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	11.9%	3.7%	137	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.4%	0.2%	5	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.2%	4	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.8%	0.4%	9	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	6.4%	4.3%	73				
Durable Plastic Items	0.3%	0.6%	3	Mixed Residue	0.8%	0.8%	9
Remainder/Composite Plastic	3.7%	8.4%	42				
				Totals	100.0%		1,146
				Sample count:		8	

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 62: Composition of Waste from Subgroup 25.5, Manufacturing – Chemical and Allied Products

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	44.7%	20.6%	4,147	Other Organic	5.7%	3.0%	528
Uncoated Corrugated Cardboard	5.9%	5.2%	551	Food	3.3%	2.3%	311
Paper Bags	0.9%	0.9%	81	Leaves & Grass	0.2%	0.4%	19
Newspaper	0.3%	0.5%	27	Prunings & Trimmings	0.1%	0.2%	10
White Ledger Paper	4.0%	2.4%	375	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.1%	5	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0	Manures	0.0%	0.0%	0
Other Office Paper	1.1%	1.1%	106	Textiles	0.7%	0.9%	68
Magazines and Catalogs	2.9%	4.9%	274	Remainder/Composite Organic	1.3%	0.5%	121
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	4.2%	2.0%	388	Construction & Demolition	9.1%	10.7%	848
Remainder/Composite Paper	25.2%	15.6%	2,340	Concrete	0.5%	1.1%	50
				Asphalt Paving	0.0%	0.0%	0
Glass	0.4%	0.5%	38	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.4%	0.5%	35	Lumber	8.5%	11.1%	789
Green Glass Bottles & Containers	0.0%	0.1%	3	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.1%	0.2%	9
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	0	Hazardous Waste	0.0%	0.0%	0
				Paint	0.0%	0.0%	0
Metal	2.2%	3.6%	207	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.0%	0.1%	4	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	2.1%	3.5%	191	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.1%	0.1%	5				
Other Non-Ferrous Metal	0.1%	0.1%	6	Special Waste	3.3%	6.6%	308
Remainder/Composite Metal	0.0%	0.0%	2	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	33.9%	11.9%	3,149	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.5%	16	Bulky Items	0.0%	0.0%	0
PETE Containers	3.7%	3.5%	348	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.2%	0.2%	20	Remainder/Composite Special Waste	3.3%	6.9%	308
Film Plastic	16.3%	7.9%	1,516				
Durable Plastic Items	0.1%	0.3%	13	Mixed Residue	0.7%	0.2%	60
Remainder/Composite Plastic	13.3%	11.8%	1,235				
				Totals	100.0%		9,285
				Sample count:	8		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 63: Composition of Waste from Subgroup 25.6, Mining

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	40.8%	34.3%	296	Other Organic	39.1%	37.9%	284
Uncoated Corrugated Cardboard	2.9%	11.3%	21	Food	30.4%	30.2%	221
Paper Bags	0.6%	0.9%	5	Leaves & Grass	0.2%	0.2%	1
Newspaper	14.1%	11.8%	102	Prunings & Trimmings	7.2%	45.2%	53
White Ledger Paper	1.3%	1.1%	9	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.2%	0.2%	2	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0	Manures	0.0%	0.0%	0
Other Office Paper	4.3%	4.3%	31	Textiles	0.5%	3.2%	4
Magazines and Catalogs	0.2%	0.2%	1	Remainder/Composite Organic	0.7%	1.1%	5
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	0.3%	0.6%	2	Construction & Demolition	9.7%	49.7%	70
Remainder/Composite Paper	16.8%	16.4%	122	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	0.3%	0.3%	2	Asphalt Roofing	0.0%	0.1%	0
Clear Glass Bottles & Containers	0.3%	0.3%	2	Lumber	4.9%	37.2%	35
Green Glass Bottles & Containers	0.0%	0.0%	0	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	4.8%	30.3%	35
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	0	Hazardous Waste	0.0%	0.0%	0
				Paint	0.0%	0.0%	0
Metal	1.3%	5.4%	9	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.1%	0.6%	1	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	1.0%	5.7%	7	Remainder/Composite HW	0.0%	0.0%	0
Aluminum Cans	0.1%	0.1%	1				
Other Non-Ferrous Metal	0.0%	0.0%	0	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.0%	0.3%	0	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	8.7%	5.5%	63	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.1%	0.5%	1	Bulky Items	0.0%	0.0%	0
PETE Containers	0.1%	0.2%	1	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.1%	0.0%	1	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	4.9%	3.0%	36				
Durable Plastic Items	0.7%	0.7%	5	Mixed Residue	0.1%	0.7%	1
Remainder/Composite Plastic	2.8%	2.7%	20				
				Totals	100.0%		726
				Sample count:	6		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 64: Composition of Waste from Subgroup 25.7, Air Transportation

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	54.2%	15.3%	13,949	Other Organic	8.7%	1.3%	2,238
Uncoated Corrugated Cardboard	2.9%	2.2%	738	Food	6.8%	1.3%	1,759
Paper Bags	0.6%	0.2%	148	Leaves & Grass	0.6%	0.4%	145
Newspaper	6.8%	2.7%	1,759	Prunings & Trimmings	0.0%	0.0%	2
White Ledger Paper	7.2%	1.9%	1,851	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.1%	0.0%	23	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	4.5%	7.1%	1,149	Manures	0.0%	0.0%	0
Other Office Paper	9.9%	10.6%	2,556	Textiles	0.3%	0.3%	78
Magazines and Catalogs	2.7%	1.1%	683	Remainder/Composite Organic	1.0%	0.6%	254
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	3.0%	0.8%	767	Construction & Demolition	18.7%	12.0%	4,810
Remainder/Composite Paper	16.6%	7.2%	4,276	Concrete	0.0%	0.0%	0
				Asphalt Paving	0.0%	0.0%	0
Glass	2.3%	0.9%	604	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	1.7%	0.7%	446	Lumber	18.1%	12.2%	4,662
Green Glass Bottles & Containers	0.5%	0.3%	138	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.5%	0.2%	141
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.0%	6
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.1%	0.0%	20	Hazardous Waste	1.0%	1.4%	248
				Paint	0.0%	0.0%	0
Metal	2.4%	1.5%	611	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.2%	0.1%	50	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.9%	0.9%	242
Other Ferrous Metal	0.1%	0.0%	17	Remainder/Composite HW	0.0%	0.0%	6
Aluminum Cans	0.7%	0.3%	187				
Other Non-Ferrous Metal	0.1%	0.1%	37	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	1.2%	1.1%	320	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	12.3%	4.4%	3,151	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.2%	0.1%	57	Bulky Items	0.0%	0.0%	0
PETE Containers	0.4%	0.1%	107	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	0.5%	0.3%	135	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	7.4%	2.5%	1,910				
Durable Plastic Items	0.7%	0.4%	192	Mixed Residue	0.4%	0.4%	108
Remainder/Composite Plastic	2.9%	0.8%	750				
				Totals	100.0%		25,719
				Sample count:	5		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 65: Composition of Waste from Subgroup 25.8, Agriculture, Forestry and Fisheries

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	3.1%	39.3%	1,440	Other Organic	56.8%	24.5%	26,591
Uncoated Corrugated Cardboard	1.9%	20.3%	892	Food	1.4%	7.6%	647
Paper Bags	0.1%	1.2%	43	Leaves & Grass	29.5%	28.9%	13,820
Newspaper	0.1%	3.0%	48	Prunings & Trimmings	15.8%	15.8%	7,384
White Ledger Paper	0.1%	1.4%	30	Branches & Stumps	0.0%	0.0%	0
Colored Ledger Paper	0.0%	0.0%	0	Agricultural Crop Residues	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0	Manures	0.0%	0.0%	0
Other Office Paper	0.0%	0.1%	3	Textiles	0.8%	0.2%	383
Magazines and Catalogs	0.1%	1.8%	49	Remainder/Composite Organic	9.3%	8.0%	4,356
Phone Books and Directories	0.0%	0.0%	0				
Other Miscellaneous Paper	0.2%	3.2%	83	Construction & Demolition	36.7%	36.4%	17,180
Remainder/Composite Paper	0.6%	9.8%	293	Concrete	27.9%	27.9%	13,069
				Asphalt Paving	0.0%	0.0%	0
Glass	0.1%	1.1%	30	Asphalt Roofing	0.0%	0.0%	0
Clear Glass Bottles & Containers	0.1%	1.0%	28	Lumber	8.4%	8.2%	3,934
Green Glass Bottles & Containers	0.0%	0.1%	2	Gypsum Board	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0	Rock, Soil & Fines	0.4%	6.3%	177
Other Colored Glass Bottles & Containers	0.0%	0.0%	0	Remainder/Composite C&D	0.0%	0.0%	1
Flat Glass	0.0%	0.0%	0				
Remainder/Composite Glass	0.0%	0.0%	0	Hazardous Waste	0.0%	0.4%	7
				Paint	0.0%	0.0%	0
Metal	0.2%	3.7%	112	Vehicle & Equipment Fluids	0.0%	0.0%	0
Tin/Steel Cans	0.0%	0.8%	15	Used Oil	0.0%	0.0%	0
Major Appliances	0.0%	0.0%	0	Batteries	0.0%	0.0%	0
Other Ferrous Metal	0.1%	1.0%	28	Remainder/Composite HW	0.0%	0.4%	7
Aluminum Cans	0.0%	0.3%	11				
Other Non-Ferrous Metal	0.0%	0.1%	3	Special Waste	0.0%	0.0%	0
Remainder/Composite Metal	0.1%	1.7%	55	Ash	0.0%	0.0%	0
Electronics	0.0%	0.0%	0	Sewage Solids	0.0%	0.0%	0
				Industrial Sludge	0.0%	0.0%	0
Plastic	3.1%	3.0%	1,444	Treated Medical Waste	0.0%	0.0%	0
HDPE Containers	0.0%	0.6%	19	Bulky Items	0.0%	0.0%	0
PETE Containers	0.1%	0.0%	24	Tires	0.0%	0.0%	0
Miscellaneous Plastic Containers	1.0%	0.6%	470	Remainder/Composite Special Waste	0.0%	0.0%	0
Film Plastic	0.9%	0.9%	405				
Durable Plastic Items	1.0%	1.3%	482	Mixed Residue	0.0%	0.6%	18
Remainder/Composite Plastic	0.1%	1.3%	44				
				Totals	100.0%		46,823
				Sample count:	6		

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 66: Composition of Waste from Subgroup 25.9, Manufacturing – Paper and Allied Products

	Est. Pct.	+ / -	Est. Tons		Est. Pct.	+ / -	Est. Tons
Paper	55.0%		1,595	Other Organic	6.3%		183
Uncoated Corrugated Cardboard	4.5%		132	Food	4.2%		121
Paper Bags	0.3%		7	Leaves & Grass	0.0%		0
Newspaper	4.7%		137	Prunings & Trimmings	0.0%		0
White Ledger Paper	0.3%		8	Branches & Stumps	0.0%		0
Colored Ledger Paper	0.0%		0	Agricultural Crop Residues	0.0%		0
Computer Paper	0.3%		9	Manures	0.0%		0
Other Office Paper	0.3%		8	Textiles	1.7%		48
Magazines and Catalogs	0.9%		26	Remainder/Composite Organic	0.5%		14
Phone Books and Directories	0.0%		0				
Other Miscellaneous Paper	25.4%		735	Construction & Demolition	4.6%		134
Remainder/Composite Paper	18.4%		533	Concrete	0.0%		0
				Asphalt Paving	0.0%		0
Glass	2.4%		69	Asphalt Roofing	0.0%		0
Clear Glass Bottles & Containers	1.1%		31	Lumber	4.6%		134
Green Glass Bottles & Containers	1.3%		38	Gypsum Board	0.0%		0
Brown Glass Bottles & Containers	0.0%		0	Rock, Soil & Fines	0.0%		0
Other Colored Glass Bottles & Containers	0.0%		0	Remainder/Composite C&D	0.0%		0
Flat Glass	0.0%		0				
Remainder/Composite Glass	0.0%		0	Hazardous Waste	1.5%		43
				Paint	0.0%		0
Metal	4.2%		121	Vehicle & Equipment Fluids	0.0%		0
Tin/Steel Cans	0.1%		4	Used Oil	1.5%		43
Major Appliances	0.0%		0	Batteries	0.0%		0
Other Ferrous Metal	3.9%		112	Remainder/Composite HW	0.0%		0
Aluminum Cans	0.1%		2				
Other Non-Ferrous Metal	0.1%		4	Special Waste	0.0%		0
Remainder/Composite Metal	0.0%		0	Ash	0.0%		0
Electronics	0.0%		0	Sewage Solids	0.0%		0
				Industrial Sludge	0.0%		0
Plastic	25.5%		738	Treated Medical Waste	0.0%		0
HDPE Containers	0.2%		6	Bulky Items	0.0%		0
PETE Containers	1.1%		31	Tires	0.0%		0
Miscellaneous Plastic Containers	0.2%		5	Remainder/Composite Special Waste	0.0%		0
Film Plastic	5.3%		155				
Durable Plastic Items	0.1%		3	Mixed Residue	0.5%		15
Remainder/Composite Plastic	18.6%		539				
				Totals	100.0%		2,898
				Sample count:		3	

There were not enough samples from this business group to determine error ranges for the composition estimates.

Table 67: Composition of Waste from Large Office Buildings

	Est. Pct.	+ / -	Est. Pct.	+ / -
Paper				
Uncoated Corrugated Cardboard	69.8%	4.4%	Other Organic	14.6%
Paper Bags	3.3%	1.1%	Food	2.8%
Newspaper	0.6%	0.2%	Leaves & Grass	2.6%
White Ledger Paper	9.5%	2.0%	Prunings & Trimmings	0.3%
Colored Ledger Paper	18.7%	4.0%	Branches & Stumps	0.0%
Computer Paper	0.4%	0.3%	Agricultural Crop Residues	0.0%
Other Office Paper	0.5%	0.5%	Manures	0.0%
Magazines and Catalogs	7.2%	2.4%	Textiles	0.2%
Phone Books and Directories	6.5%	1.3%	Remainder/Composite Organic	0.8%
Other Miscellaneous Paper	0.0%	0.0%		
Remainder/Composite Paper	6.0%	1.7%	Construction & Demolition	1.9%
	17.0%	2.9%	Concrete	0.0%
			Asphalt Paving	0.0%
Glass			Asphalt Roofing	0.0%
Clear Glass Bottles & Containers	1.5%	0.3%	Lumber	0.5%
Green Glass Bottles & Containers	1.2%	0.3%	Gypsum Board	0.9%
Brown Glass Bottles & Containers	0.3%	0.2%	Rock, Soil & Fines	1.0%
Other Colored Glass Bottles & Containers	0.0%	0.0%	Remainder/Composite C&D	0.0%
Flat Glass	0.0%	0.0%		0.4%
Remainder/Composite Glass	0.0%	0.0%	Household Hazardous Waste	0.0%
			Paint	0.0%
Metal			Vehicle & Equipment Fluids	0.0%
Tin/Steel Cans	2.6%	1.4%	Used Oil	0.0%
Major Appliances	0.5%	0.3%	Batteries	0.0%
Other Ferrous Metal	0.0%	0.0%	Remainder/Composite HHW	0.0%
Aluminum Cans	0.4%	0.5%		
Other Non-Ferrous Metal	0.4%	0.2%	Special Waste	0.0%
Remainder/Composite Metal	0.2%	0.1%	Ash	0.0%
Electronics	0.0%	0.0%	Sewage Solids	0.0%
	1.0%	1.2%	Industrial Sludge	0.0%
Plastic			Treated Medical Waste	0.0%
HDPE Containers	9.1%	1.1%	Bulky Items	0.0%
PETE Containers	0.2%	0.1%	Tires	0.0%
Miscellaneous Plastic Containers	0.7%	0.2%	Remainder/Composite Special Waste	0.0%
Film Plastic	1.2%	0.3%		
Durable Plastic Items	4.5%	0.8%	Mixed Residue	0.5%
Remainder/Composite Plastic	0.5%	0.1%		
	2.0%	0.4%	Totals	100.0%
			Sample count:	23

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

Table 68: Composition of Waste from Shopping Malls

	Est. Pct	+ / -	Est. Pct	+ / -
Paper	39.1%	7.6%	Other Organic	39.0%
Uncoated Corrugated Cardboard	7.4%	2.6%	Food	36.0%
Paper Bags	0.8%	0.3%	Leaves & Grass	0.5%
Newspaper	4.5%	1.8%	Prunings & Trimmings	0.0%
White Ledger Paper	2.5%	2.3%	Branches & Stumps	0.0%
Colored Ledger Paper	0.0%	0.1%	Agricultural Crop Residues	0.0%
Computer Paper	0.3%	0.3%	Manures	0.0%
Other Office Paper	1.1%	0.6%	Textiles	0.9%
Magazines and Catalogs	1.3%	0.6%	Remainder/Composite Organic	1.6%
Phone Books and Directories	0.0%	0.0%		
Other Miscellaneous Paper	5.7%	2.6%		
Remainder/Composite Paper	15.4%	3.9%		
Glass	1.9%	1.1%	Construction & Demolition	0.8%
Clear Glass Bottles & Containers	1.0%	0.4%	Concrete	0.0%
Green Glass Bottles & Containers	0.2%	0.1%	Asphalt Paving	0.0%
Brown Glass Bottles & Containers	0.1%	0.1%	Asphalt Roofing	0.0%
Other Colored Glass Bottles & Containers	0.0%	0.0%	Lumber	0.2%
Flat Glass	0.0%	0.0%	Gypsum Board	0.0%
Remainder/Composite Glass	0.7%	1.0%	Rock, Soil & Fines	0.0%
			Remainder/Composite C&D	0.6%
Metal	1.8%	0.7%	Household Hazardous Waste	2.0%
Tin/Steel Cans	0.5%	0.2%	Paint	1.6%
Major Appliances	0.0%	0.0%	Vehicle & Equipment Fluids	0.0%
Other Ferrous Metal	0.5%	0.5%	Used Oil	0.0%
Aluminum Cans	0.2%	0.1%	Batteries	0.0%
Other Non-Ferrous Metal	0.2%	0.1%	Remainder/Composite HHW	0.3%
Remainder/Composite Metal	0.3%	0.3%		
Electronics	0.2%	0.2%		
Plastic	13.9%	3.1%	Special Waste	1.0%
HDPE Containers	1.2%	0.6%	Ash	1.0%
PETE Containers	0.7%	0.3%	Sewage Solids	0.0%
Miscellaneous Plastic Containers	1.1%	0.5%	Industrial Sludge	0.0%
Film Plastic	6.8%	1.9%	Treated Medical Waste	0.0%
Durable Plastic Items	1.6%	0.7%	Bulky Items	0.0%
Remainder/Composite Plastic	2.5%	0.6%	Tires	0.0%
			Remainder/Composite Special Waste	0.0%
			Mixed Residue	0.4%
			Totals	100.0%
			Sample count:	35

Confidence intervals calculated at the 90% confidence level. Percentages for materials may not total 100% due to rounding.

APPENDIX C: DEFINITIONS OF INDUSTRY GROUPS

Assigned Code	Description of Group	SIC Codes Included	SIC Code Designations
1.1	Services-Other Miscellaneous	72	Personal Services
		75	Automotive repair, services, and parking
		76	Miscellaneous repair services
		79	Amusement and recreational services
		83	Social services
		84	Museums, art galleries, botanical & zoological gardens
1.2	Services-Legal	81	Legal Services
1.3	Services-Other Professional	86	Membership Organizations
		87	Engineer, Acct, Resrch, Mngmnt Services
		89	
2	Services-Medical/Health	80	
3	Finance, Insurance, Real Estate	60	Banking
		61	Credit Agencies Other than Banks
		62	Security, Commodity Brokers, and Servic
		63	Insurance Carriers
		64	Insurance Agents, Brokers, and Service
		65	Real Estate
		66	
		67	
		68	Holding and Other Investment Offices
		69	
4	Retail-Restaurants	58	Eating and Drinking Places
5	Services-Business	73	Business Services
6	Services-Education	82	Educational Services
7.1	Retail Trade-Building Material & Garden	52	Building Materials & Garden Supplies
7.2	Retail Trade-General Merchandise Store	53	General Merchandise Stores
7.3	Retail Trade-Automotive Dealers & Service Stations	55	Automotive Dealers & Service Stations
7.4	Retail Trade-Apparel and Furniture Stores	56	Apparel and Accessory Stores
		57	Furniture and Home Furnishing Stores
8	Wholesale Trade - Durable Goods	50	Wholesale Trade-Durable Goods
9	Wholesale Trade - Nondurable Goods	51	Wholesale Trade-Nondurable Goods

Assigned Code	Description of Group	SIC Codes	
		Included	SIC Code Designations
10	Government Facilities	43	
		90	
		91	Federal Government
		92	State Government
		93	Local Government
		94	
		95	
		96	
		97	
		98	
11	Retail-Miscellaneous	59	Miscellaneous Retail
12	Mfg.-Printing/Publishing	27	Coal Mining
13	Mfg.-Apparel/Textile	22	Textile Mill Products
		23	Apparel & Other Products Made From Fabrics
14	Retail-Food Stores	54	Food Stores
15	Services-Motion Picture	78	Motion Pictures
16	Mfg.-Transportation Equipment	37	Transportation Equipment
17	Services-Hotel & Lodging	70	Hotels and Other Lodging Places
18	Mfg.-Primary/Fabricated Metal	33	Primary Metal Industries
		34	Fabricated Metal Products
19	Other Transportation	40	
		41	Local and Interurban Passenger Transit
		44	Water Transportation
		46	Pipe Lines, Except Natural Gas
		47	Transportation Services
20.1	Mfg.-Lumber & Wood Products	24	Lumber/Wood Products, RX Furniture
20.2	Mfg.-Other	21	Tobacco Products
		29	Petroleum/Refining/Related Industries
		30	Rubber/Miscellaneous Plastic Products
		31	Leather/Leather Products
		32	Stone/Clay/Glass/Concrete Prod
		39	Misc Manufacturing Industries
21	Mfg.-Instrument/Related Products	38	Instruments/Related

Assigned Code	Description of Group	SIC Codes	
		Included	SIC Code Designations
22	Communications	48	Communication
23	Mfg.-Food/Kindred Products	20	Food & Kindred Products
24	Mfg.-Electronic Equipment	36	Electrical/Electronic Mach Equip
25.1	Mfg.-Industrial Machinery	35	Machinery, Except Electrical
25.2	Trucking & Warehousing	42	Trucking and Warehousing
25.3	Mfg.-Furniture/Fixtures	25	Furniture & Fixtures
25.4	Utilities	49	Electric, Gas, & Sanitary Services
25.5	Mfg.-Chemical/Allied Products	28	Chemicals & Allied Products
25.6	Mining	10 12 13 14	Metal Mining Coal Mining Oil & Gas Extraction Mining & Quarrying Nonmetallic Materials, Ex Fuels
25.7	Air Transportation	45	Transportation by Air
25.8	Agriculture, Forestry & Fisheries	01 02 07 08 09	Agricultural Production--Crops Agric Prod--Livestock & Animal Specialties Agricultural Services Forestry Fishing, Hunting, and Trapping
25.9	Mfg.-Paper/Allied Products	26	Paper & Allied Products

APPENDIX D: LIST AND DEFINITIONS OF MATERIAL TYPES

The list and definitions of the Standard Material Categories were drawn from the California Integrated Waste Management Board's Uniform Waste Disposal Characterization Method.

D.1 LIST OF STANDARD MATERIAL CATEGORIES

The list below shows a hierarchy of material classes and subclasses. Solid waste was sorted into the 58 specific material categories shown in bold type, and composition percentages were calculated for those material categories.

Paper

Uncoated Corrugated Cardboard and Paper Bags

Uncoated Corrugated Cardboard

Paper Bags

Newspaper

Office Paper

White Ledger

Colored Ledger

Computer Paper

Other Office Paper

Miscellaneous Paper

Magazines and Catalogs

Phone Books and Directories

Other Miscellaneous Paper

Remainder/Composite Paper

Glass

Clear Glass Bottles and Containers

Colored Glass Bottles and Containers

Green Glass Bottles and Containers

Brown Glass Bottles and Containers

Other Colored Glass Bottles and Containers

Flat Glass

Remainder/Composite Glass

Metal

Ferrous Metals

Tin/Steel Cans

Major Appliances

Other Ferrous

Non-Ferrous Metals

Aluminum Cans

Other Non-Ferrous

Electronics

Remainder/Composite Metal

Plastic

Plastic Containers

HDPE Containers

PETE Containers

Miscellaneous Plastic Containers

Film Plastic

Durable Plastic Items

Remainder/Composite Plastic

Other Organic

Food

Landscape and Agricultural

Leaves and Grass

Prunings and Trimmings

Branches and Stumps

Agricultural Crop Residues

Miscellaneous Organic

Manures

Textiles

Remainder/Composite Organic

Construction and Demolition

Concrete

Asphalt Paving

Asphalt Roofing

Lumber

Gypsum Board

Rock, Soil and Fines

Remainder/Composite Construction and Demolition

Household Hazardous Waste

Paint

Vehicle and Equipment Fluids

Used Oil

Batteries

Remainder/Composite Household Hazardous

Special Waste

Ash

Sewage Solids

Industrial Sludge

Treated Medical Waste

Bulky Items

Tires

Remainder/Composite Special Waste

Mixed Residue

D.2 DEFINITIONS OF STANDARD MATERIAL CATEGORIES

PAPER

"Uncoated Corrugated Cardboard and Paper Bags" includes the two subtypes described below. The subtypes are "uncoated corrugated cardboard" and "paper bags".

Uncoated Corrugated Cardboard usually has three layers. The center wavy layer is sandwiched between the two outer layers. It does not have any wax coating on the inside or outside.

Examples: This subtype includes entire cardboard containers, such as shipping and moving boxes, computer packaging cartons, and sheets and pieces of boxes and cartons. This subtype does not include chipboard.

Paper Bags means bags and sheets made from kraft paper.

Examples: This subtype includes paper grocery bags, fast food bags, department store bags, and heavyweight sheets of kraft packing paper.

Newspaper means paper used in newspapers. This type does not include any subtypes.

Examples: This type includes newspaper and glossy inserts, and all items made from newsprint, such as free advertising guides, election guides, and tax instruction booklets.

"Office Paper" includes the four subtypes described below. The subtypes are "white ledger", "colored ledger", "computer paper", and "other office paper".

White Ledger means uncolored bond, rag, or stationary grade paper. It may have colored ink on it. When the paper is torn, the fibers are white.

Examples: This subtype includes white photocopy, white laser print, and letter paper.

Colored Ledger means colored bond, rag, or stationery grade paper. When the paper is torn, the fibers are colored throughout.

Examples: This subtype includes colored photocopy and letter paper. This subtype does not include fluorescent dyed paper or deep-tone dyed paper such as goldenrod colored paper.

Computer Paper means paper used for computer printouts. This subtype usually has a strip of formfeed holes along two edges. If there are no holes, then the edges show tear marks. This subtype can be white or striped.

Examples: This subtype includes computer paper and printouts from continuous feed printers. This subtype does not include "white ledger" used in laser or impact printers, nor computer paper containing groundwood.

Other Office Paper means other kinds of paper used in offices.

Examples: This subtype includes manila folders, manila envelopes, index cards, white envelopes, white window envelopes, notebook paper, and carbonless forms. This subtype does not include "white ledger", "colored ledger" or "computer paper".

"Miscellaneous Paper" includes the three subtypes described below. The subtypes are "magazines and catalogs", "phone books and directories", and "other miscellaneous paper".

Magazines and Catalogs means items made of glossy coated paper. This paper is usually slick, smooth to the touch, and reflects light.

Examples: This subtype includes glossy magazines, catalogs, brochures and pamphlets.

Phone Books and Directories means thin paper between coated covers. These items are bound along the spine with glue.

Examples: This subtype includes whole or damaged telephone books, "yellow pages", real estate listings, and some non-glossy mail order catalogs.

Other Miscellaneous Paper means items made mostly of paper that do not fit into any of the above subtypes. Paper may be combined with minor amounts of other materials such as wax or glues. This subtype includes items made of chipboard, groundwood paper, and deep-toned or fluorescent dyed paper.

Examples: This subtype includes cereal and cracker boxes, unused paper plates and cups, goldenrod colored paper, and hardcover and softcover books.

Remainder/Composite Paper means items made mostly of paper but combined with large amounts of other materials such as wax, plastic, glues, foil, food, and moisture.

Examples: This type includes waxed corrugated cardboard, aseptic packages, wax coated milk cartons, waxed paper, tissue, paper towels, blueprints, sepia, onion skin, fast food wrappers, carbon paper, self adhesive notes, and photographs.

GLASS

Clear Glass Bottles and Containers means clear glass beverage and food containers with or without a CRV label.

Examples: This type includes whole or broken clear soda and beer bottles, fruit juice bottles, peanut butter jars, and mayonnaise jars.

"Colored Glass Bottles and Containers" includes food and beverage containers three subtypes described below. The subtypes are "green glass bottles and containers", "brown glass bottles", and "other colored containers".

Green Glass Bottles and Containers means green-colored glass containers with or without a CRV label.

Examples: This subtype includes whole or broken green soda and beer bottles, and whole or broken green wine bottles.

Brown Glass Bottles and Containers means brown-colored glass containers with or without a CRV label.

Examples: This subtype includes whole or broken brown soda and beer bottles, and whole or broken brown wine bottles.

Other Colored Glass Bottles and Containers means colored glass containers and bottles other than green or brown with or without a CRV label.

Examples: This subtype includes whole or broken blue or other colored bottles and containers.

Flat Glass means clear or tinted glass that is flat. This type does not include any subtypes.

Examples: This type includes glass window panes, doors, and table tops, flat automotive window glass (side windows), safety glass, and architectural glass. This subtype does not include windshields, laminated glass, or any curved glass.

Remainder/Composite Glass means glass that cannot be put in any other type or subtype. It includes items made mostly of glass but combined with other materials. This type does not include any subtypes.

Examples: This type includes Pyrex, Corningware, crystal and other glass tableware, mirrors, and auto windshields.

METAL

The type "ferrous metals" includes three subtypes described below. The subtypes are "tin/steel cans", "major appliances", and "other ferrous".

Tin/Steel Cans means rigid containers made mainly of steel. These items will stick to a magnet and may be tin-coated. This subtype is used to store food, beverages, paint, and a variety of other household and consumer products.

Examples: This subtype includes canned food and beverage containers, empty metal paint cans, empty spray paint and other aerosol containers, and bimetal containers with steel sides and aluminum ends.

Major Appliances means discarded major appliances of any color. These items are often enamel-coated.

Examples: This subtype includes washing machines, clothes dryers, hot water heaters, stoves, and refrigerators. This subtype does not include electronics, such as televisions and stereos.

Other Ferrous means any iron or steel that is magnetic or any stainless steel item. This subtype does not include "tin/steel cans".

Examples: This subtype includes structural steel beams, metal clothes hangers, metal pipes, stainless steel cookware, security bars, and scrap ferrous items.

"Non-Ferrous Metals" includes the two subtypes described below. The subtypes are "Aluminum Cans" and "Other Non-Ferrous".

Aluminum Cans means any food or beverage container made mainly of aluminum.

Examples: This subtype includes aluminum soda or beer cans, and some pet food cans. This subtype does not include bimetal containers with steel sides and aluminum ends.

Other Non-Ferrous means any metal item, other than aluminum cans, that is not stainless steel and that is not magnetic. These items may be made of aluminum, copper, brass, bronze, lead, zinc, or other metals.

Examples: This subtype includes aluminum window frames, aluminum siding, copper wire, shell casings, brass pipe, and aluminum foil.

Electronics means any item that contains a circuit board or electronic components that typically contain small quantities of hazardous materials. This category includes electronic appliances such computer equipment, stereo equipment, televisions, electronic toys, and other similar items.

Remainder/Composite Metal means metal that cannot be put in any other type or subtype. This type includes items made mostly of metal but combined with other materials and items made of both ferrous metals and non-ferrous metal combined. This type does not include any subtypes.

Examples: This type includes brown goods (electronics and other small appliances), computers, televisions, radios, and electronic parts.

PLASTIC

"Plastic Containers" includes the three subtypes described below. The subtypes are "HDPE Containers" "PETE Containers", and "Other Plastic Containers".

HDPE Containers means natural and colored HDPE containers. This plastic is usually either cloudy white, allowing light to pass through it (natural) or a solid color, preventing light from passing through it (colored). When marked for identification, it bears the number "2" in the triangular recycling symbol.

Examples: This subtype includes milk jugs, water jugs, detergent bottles, some hair-care bottles, empty motor oil, empty antifreeze, and other empty vehicle and equipment fluid containers.

PETE Containers means clear or colored PETE containers. When marked for identification, it bears the number "1" in the center of the triangular recycling symbol and may also bear the letters "PETE" or "PET". The color is usually transparent green or clear. A PETE container usually has a small dot left from the manufacturing process, not a seam. It does not turn white when bent.

Examples: This subtype includes soft drink and water bottles, some liquor bottles, cooking oil containers, and aspirin bottles.

Miscellaneous Plastic Containers means plastic containers made of types of plastic other than HDPE or PETE. Items may be made of PVC, PP, or PS. When marked for identification, these items may bear the number "3", "4", "5", "6", or "7" in the triangular recycling symbol.

Examples: This subtype includes food containers such as bottles for salad dressings and vegetable oils, flexible and brittle yogurt cups and lids, syrup bottles, margarine tubs, microwave food trays, and clamshell-shaped fast food containers. This subtype also includes some shampoo containers and vitamin bottles.

Film Plastic means flexible plastic sheeting. It is made from a variety of plastic resins including HDPE and LDPE. It can be easily contoured around an object by hand pressure. This type does not include any subtypes.

Examples: This type includes plastic garbage bags, food bags, dry cleaning bags, grocery store bags, packaging wrap, and food wrap. This type does not include rigid bubble packaging.

Durable Plastic Items means plastic objects other than containers and film plastic. This type also includes plastic objects other than containers or film that bear the numbers "1" through "7" in the triangular recycling symbol. These items are usually made to last for more than one use.

Examples: This type includes plastic outdoor furniture, plastic toys and sporting goods, and plastic housewares, such as mop buckets, dishes, cups, and cutlery. This type also includes building materials such as house siding, window sashes and frames, housings for electronics such as computers, televisions and stereos, and plastic pipes and fittings.

Remainder and Composite Plastic means plastic that cannot be put in any other type or subtype. This type includes items made mostly of plastic but combined with other materials. This type does not include any subtypes.

Examples: This type includes auto parts made of plastic attached to metal, plastic bubble packaging, drinking straws, foam drinking cups, produce trays, egg cartons, foam packing blocks, packing peanuts, and cookie and muffin trays.

OTHER ORGANIC

Food means food material resulting from the processing, storage, preparation, cooking, handling or consumption of food. This type includes material from industrial, commercial or residential sources. This type does not include any subtypes.

Examples: This type includes discarded meat scraps, dairy products, egg shells, fruit or vegetable peels, and other food items from homes, stores, and restaurants. This type includes grape pomace and other processed residues or material from canneries, wineries, or other industrial sources.

"Landscape and Agricultural" includes the four subtypes described below. The subtypes are "Leaves and Grass", "Prunings and Trimmings", "Branches and Stumps", and "Agricultural Crop Residues".

Leaves and Grass means plant material, except woody material, from any public or private landscapes.

Examples: This subtype includes leaves, grass clippings, and plants. This subtype does not include woody material or material from agricultural sources.

Prunings and Trimmings means woody plant material up to 4 inches in diameter from any public or private landscape.

Examples: This subtype includes prunings, shrubs, and small branches with branch diameters that do not exceed 4 inches. This subtype does not include stumps, tree trunks, or branches exceeding 4 inches in diameter. This subtype does not include material from agricultural sources.

Branches and Stumps means woody plant material, branches and stumps that exceed 4 inches in diameter from any public or private landscape.

Agricultural Crop Residues means plant material from agricultural sources.

Examples: This subtype includes orchard and vineyard prunings, vegetable by-products from farming, residual fruits, vegetables, and other crop remains after usable crop is harvested. This subtype does not include processed residues from canneries, wineries, or other industrial sources.

"Miscellaneous Organic" includes two subtypes described below. The subtypes are "Manures" and "Textiles".

Manures means manure and soiled bedding materials from domestic, farm, or ranch animals.

Examples: This subtype includes manure and soiled bedding from animal production operations, race-tracks, riding stables, animal hospitals, and other sources.

Textiles means items made of thread, yarn, fabric, or cloth.

Examples: This subtype includes clothes, fabric trimmings, draperies, and all natural and synthetic cloth fibers. This subtype does not include cloth covered furniture, mattresses, leather shoes, leather bags, or leather belts.

Remainder/Composite Organic means organic material that cannot be put in any other type or subtype. This type includes items made mostly of organic materials but combined with other materials. This type does not include any subtypes.

Examples: This type includes leather items, carpets, cork, hemp rope, garden hoses, rubber items, hair, and carpet padding.

CONSTRUCTION AND DEMOLITION

Concrete means a hard material made from sand, gravel, aggregate, cement mix and water.

Examples: This subtype includes pieces of building foundations, concrete paving, and cinder blocks.

Asphalt Paving means a black or brown, tar-like material mixed with aggregate used as a paving material.

Asphalt Roofing means composite shingles and other roofing material made with asphalt.

Examples: This type includes asphalt shingles and attached roofing tar and tar paper.

Lumber means processed wood for building, manufacturing, landscaping, packaging, and processed wood from demolition. This type does not include any subtypes.

Examples: This type includes dimensional lumber, lumber cutoffs, engineered wood such as plywood and particleboard, wood scraps, pallets, wood fencing, wood shake roofing, and wood siding.

Gypsum Board means interior wall covering made of a sheet of gypsum sandwiched between paper layers.

Examples: This subtype includes used or unused, broken or whole sheets of sheetrock, drywall, gypsum board, plasterboard, gypboard, gyproc, and wallboard.

Rock, Soil and Fines means rock pieces of any size and soil, dirt, and other matter.

Examples: This subtype includes rock, stones, and sand, clay, soil and other fines. This subtype also includes non-hazardous contaminated soil.

- (44) **Remainder/Composite Construction and Demolition** means construction and demolition material that cannot be put in any other type or subtype. This type may include items from different categories combined, which would be very hard to separate. This type does not include any subtypes.

Examples: This type includes brick, ceramics, tiles, toilets, sinks, and fiberglass insulation. This type may also include demolition debris that is a mixture of items such as plate glass, wood, tiles, gypsum board, and aluminum scrap.

HOUSEHOLD HAZARDOUS WASTE

Paint means containers with paint in them. This type does not include any subtypes.

Examples: This type includes latex paint, oil based paint, and tubes of pigment or fine art paint. This type does not include dried paint, empty paint cans, or empty aerosol containers.

Vehicle and Equipment Fluids means containers with fluids used in vehicles or engines, except used oil. This type does not include any subtypes.

Examples: This type includes used antifreeze and brake fluid. This type does not include empty vehicle and equipment fluid containers.

Used Oil means the same as defined in Health and Safety Code section 25250.1(a). This type does not include any subtypes.

Examples: This type includes spent lubricating oil such as crankcase and transmission oil, gear oil, and hydraulic oil.

Batteries means any type of battery including both drycell and lead acid. This type does not include any subtypes.

Examples: This type includes car, flashlight, small appliance, watch and hearing aid batteries.

Remainder/Composite Household Hazardous means household hazardous material that cannot be put in the "Paint", "Automotive Fluids", "Used Oil", or "Batteries" subtypes. This type also includes household hazardous material that is mixed. This type does not include any subtypes.

Examples: This type includes household hazardous waste which if improperly put in the solid waste stream may present handling problems or other hazards.

SPECIAL WASTE

Ash means a residue from the combustion of any solid or liquid material. This type does not include any subtypes.

Examples: This type includes ash from fireplaces, incinerators, biomass facilities, waste-to-energy facilities, and barbecues. This subtype also includes ash and burned debris from structure fires.

Sewage Solids means residual solids and semi-solids from the treatment of domestic waste water or sewage. This type does not include any subtypes.

Examples: This type includes biosolids, sludge, grit, screenings, and septage. This subtype does not include sewage or waste water discharged from the sewage treatment process.

Industrial Sludge means sludge from factories, manufacturing facilities, and refineries. This type does not include any subtypes.

Examples: This type includes paper pulp sludge, and water treatment filter cake sludge.

Treated Medical Waste has the same meaning as treated medical waste in Section 25023.5 of the Health and Safety Code. This type does not include any subtypes.

Bulky Items means large hard to handle items that are not defined separately, including furniture, mattresses, and other large items. This type does not include any subtypes.

Examples: This type includes all sizes and types of furniture, mattresses, box springs, and base components.

Tires means vehicle tires. This type does not include any subtypes.

Examples: This type includes tires from trucks, automobiles, motorcycles, heavy equipments, and bicycles.

Remainder/Composite Special Waste means special waste that cannot be put in any other type.

Examples: This type includes asbestos-containing materials, such as certain types of pipe insulation and floor tiles, auto fluff, auto-bodies, trucks, trailers, truck cabs, and artificial fireplace logs.

MIXED RESIDUE

Mixed Residue means material that cannot be put in any other type or subtype in the other categories. This category includes mixed residue that cannot be further sorted. This category does not include any types or subtypes.

Examples: This type includes residual material from a materials recovery facility or other sorting process that cannot be put in any of the previous remainder/composite types.

APPENDIX E: FIELD FORMS USED DURING THE STUDY

E.1 FORMS RELATED TO DISPOSAL SITE SAMPLES

Figure 6: Sample Vehicle Selection Form Used during Disposal-Site Sampling

**Los Angeles Waste Characterization and Quantification Study
Vehicle Selection Form**

Site: Bradley Landfill

Date: JANUARY 17, 2001

Cross off one number for each type of vehicle entering the station.
Continue for each block, beginning at #1, on the next line until the required number of vehicles is sampled.

SINGLE-FAMILY RESIDENTIAL :																	NEED <u>3</u> TOTAL - SAMPLE EVERY 18th VEHICLE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	(18)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	(18)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	(18)

C & D LARGE VEHICLES (Over 1 Ton)					NEED <u>5</u> TOTAL - SAMPLE EVERY 3rd VEHICLE
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	

C & D SMALL VEHICLES (1 Ton or Less)					NEED <u>5</u> TOTAL - SAMPLE EVERY 3rd VEHICLE
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	
1	2	(3)	4	5	

LANDSCAPING (Landscaper)					NEED <u>2</u> TOTAL - SAMPLE EVERY 4th VEHICLE
1	2	3	(4)	5	
1	2	3	(4)	5	

LANDSCAPING (Private Individual/Other)					NEED <u>2</u> TOTAL - SAMPLE EVERY 4th VEHICLE
1	2	3	(4)	5	
1	2	3	(4)	5	

Figure 8: Waste Sort Form Used for Disposal-Site Sampling

City of Los Angeles AB939

Cardboard			
Bags			
Newspaper			
White Ledger			
Colored Ledger			
Computer			
Office			
Magazines			
Directories			
Miscellaneous			
R/C Paper			

Clear Containers			
Green Containers			
Brown Containers			
Other Containers			
Flat Glass			
R/C Glass			

Aluminum Cans			
Tin Cans			
Ferrous			
Nonferrous			
White Goods			
R/C Metal			

Electr. - CPU			
Electr. - Monitor			
Electr. - Printer			
Electr. - TV Set			
Electr. - VCR/Stereo			
Electr. - Misc.			

Ash			
Sewage Sludge			
Industrial Sludge			
Treated Medical			
Bulky Items			
Tires			
R/C Special			

Food			
Textiles			
Leaves & Grass			
Prunings			
Stumps			
Crop Residue			
Manure			
R/C Organic			

#1 Containers			
#2 Containers			
Other Containers			
Film			
Durable			
R/C Plastic			

Concrete			
Asphalt Paving			
Asphalt Roofing			
Lumber			
Gypsum Board			
Rocks & Soil			
R/C Demo			

Paint			
Vehicle Fluids			
Oil			
Batteries			
R/C Hazardous			

Mixed Residue			
---------------	--	--	--

Untreated medical waste present
 Sharps present

Location: _____
 Date Sorted: _____

Gen Type:
 SF C&D Large C&D Small LS Landscaper LS Private

Sample ID: _____

Figure 9, continued

Complete this section for every page

Page _____ of _____

Circle the site:

Bradley

Date: _____

Calabasas

Complete this section for first page only

Start Time: _____

Stop Time: _____

Weather and Other Notes about Today's Surveying:

E.2 FORMS RELATED TO GENERATOR SAMPLES

Figure 10: Sampling Form used by Generator Sample Collection Crew

Site # **181028**

Region: South
 Zip: 90026

Thomas Guide _____
 Page _____ Grid _____

Group and Tier
11L

Hours of operation:
 Mon-Sat.

Best time to sample:
 Any day as late as possible.

Los Angeles

Contact person: **Walt or Joanne**
 Title: office mgr.

Ext: _____ LMP

Trash collected

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday
- Other schedule; see instructions

Normal pick-up time:
 5:00-6:30am

General description of waste containers:
 Two 3-yd bins behind main bldg.

- Locked area
- Multiple containers
- Compactor(s)

Detailed instructions:
 Two samples here. One from the 2 bins behind main building (#181028) and one from the bin near the machine shop (#181029). Call Walt or Joanne for access. There is a locked gate.

Container #	1	Notes to Sampling Crew:		
Type:	Square	3cy bin behind main bldg		
	Correct if necessary.			
Refuse Bin Data	_____ in.	_____ in.	_____ in.	_____ in.
	a.) Front Ht.	b.) Rear Ht.	c.) Depth	d.) Width
				e.) Ht. of Trash
Sampling Toter Data	First Toter	Second Toter	Third Toter	Fourth Toter
	_____ in.	_____ in.	_____ in.	_____ in.
	Ht. of Trash	Ht. of Trash	Ht. of Trash	Ht. of Trash

Figure 10, continued

Site # 181028

Container #	2	Notes to Sampling Crew:		
Type:	Square	3cy bin behind main bldg		
	Correct if necessary.			
Refuse Bin Data	_____ in. a.) Front Ht.	_____ in. b.) Rear Ht.	_____ in. c.) Depth	_____ in. d.) Width
				_____ in. e.) Ht. of Trash
Sampling Toter Data	First Toter _____ in. Ht. of Trash	Second Toter _____ in. Ht. of Trash	Third Toter _____ in. Ht. of Trash	Fourth Toter _____ in. Ht. of Trash

Additional Container (if necessary)	<input type="checkbox"/> Square	<input type="checkbox"/> Round	<input type="checkbox"/> Compactor
Refuse Bin Data	_____ in. a.) Front Ht.	_____ in. b.) Rear Ht.	_____ in. c.) Depth
			_____ in. d.) Length
			_____ in. e.) Ht. of Waste
Sampling Toter Data	First Toter _____ in. Ht. of Waste	Second Toter _____ in. Ht. of Waste	Third Toter _____ in. Ht. of Waste
			Fourth Toter _____ in. Ht. of Waste

Sampling Outcome

- Sampled successfully
- Sample failed
 - Locked out
 - Refused permission
 - Instructions incorrect (explain)
 - Nobody there
 - Correct time but no trash
 - Collection already happened
 - Did not visit
- Should another visit be attempted?
 - Yes
 - No

Sampling Crew's Notes to the Analysis Team

Figure 11: Sampling Form Used for Generator Sampling

City of Los Angeles AB939

Cardboard			
Bags			
Newspaper			
White Ledger			
Colored Ledger			
Computer			
Office			
Magazines			
Directories			
Miscellaneous			
R/C Paper			
Clear Containers			
Green Containers			
Brown Containers			
Other Containers			
Flat Glass			
R/C Glass			
Aluminum Cans			
Tin Cans			
Ferrous			
Nonferrous			
White Goods			
R/C Metal			
Electr. - CPU			
Electr. - Monitor			
Electr. - Printer			
Electr. - TV Set			
Electr. - VCR/Stereo			
Electr. - Misc.			

Sewage Sludge			
Industrial Sludge			
Treated Medical			
Bulky Items			
Tires			
R/C Special			
Food			
Textiles			
Leaves & Grass			
Prunings			
Stumps			
Crop Residue			
Manure			
R/C Organic			
#1 Containers			
#2 Containers			
Other Containers			
Film			
Durable			
R/C Plastic			
Concrete			
Asphalt Paving			
Asphalt Roofing			
Lumber			
Gypsum Board			
Rocks & Soil			
R/C Demo			

Ash			
Vehicle Fluids			
Oil			
Batteries			
R/C Hazardous			
Mixed Residue			

Untreated medical waste present

Sharps present

Date Sorted: _____

Sample ID: _____