CITY OF KEY WEST, FLORIDA
2010/2011 WASTE COMPOSITION STUDY

May 2011

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City of Key West, Florida
2010/2011 Waste Composition Study
Executive Summary

The City of Key West (City) contracted Kessler Consulting, Inc. (KCI) to conduct a two-season Waste Composition Study (WCS) to determine the composition of solid waste (single-family residential, multi-family residential, and commercial waste) delivered to the City of Key West Transfer Station. Two five-day sorting events were conducted on November 15-19, 2010 and April 4-8, 2011 to account for seasonal variability in the waste stream.

Figure ES.1 depicts the overall composition (combined composition of the three generator sectors) of waste disposed at the City's Transfer Station. To visually identify the most common types of recyclable or compostable materials, all grades of recyclable paper are in dark blue, recyclable containers are in dark red, and organics (yard waste and food waste) are in dark green.

Figure ES.1: Composition of Citywide Waste Disposed at Transfer Station (% by weight)

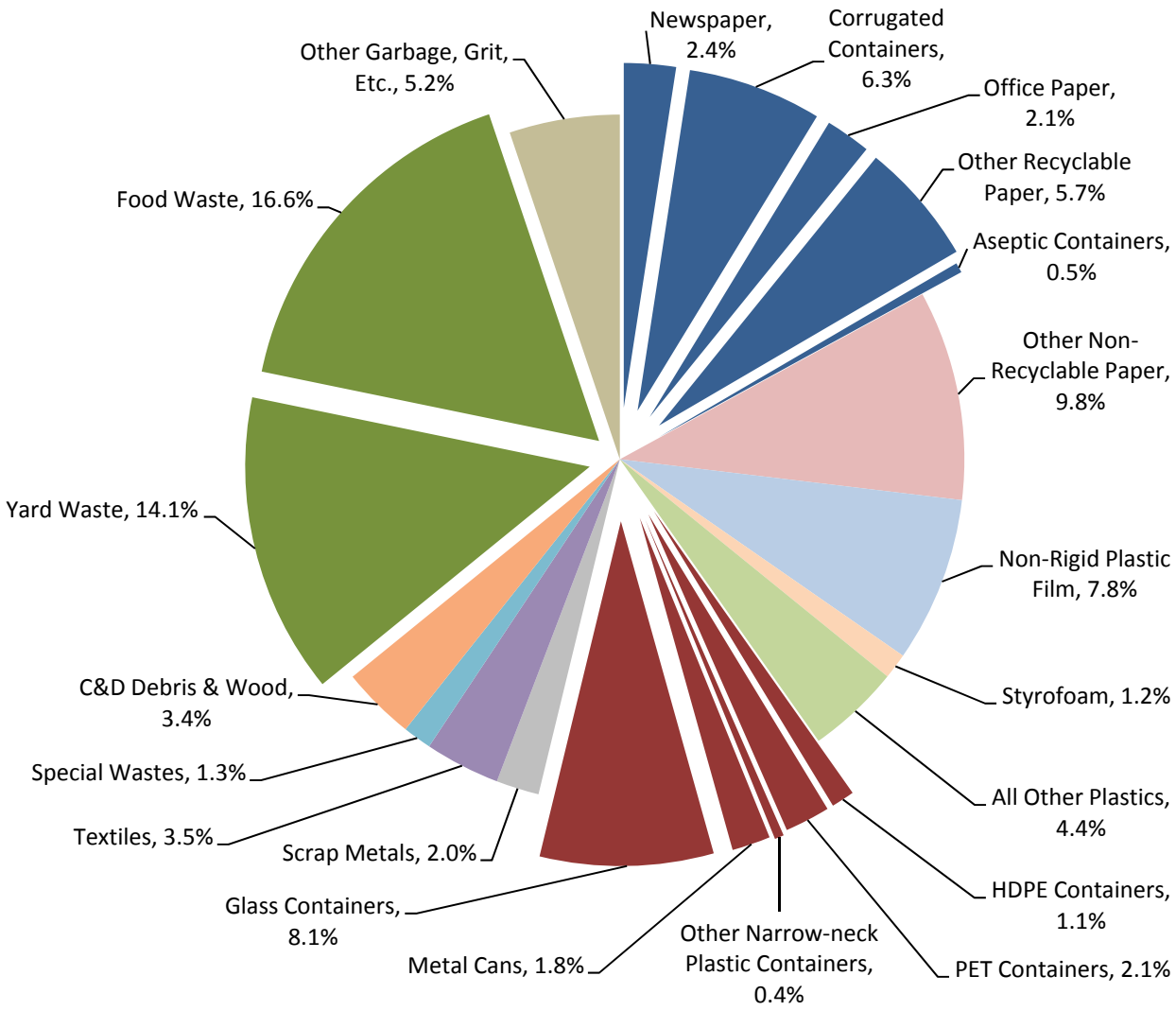


Table ES.1 presents the WCS results, starting with the overall composition of waste disposed at the City's transfer station, followed by the composition of waste disposed by the three generator sectors.

Table ES.1: Composition of Waste Disposed at City's Transfer Station (percent by weight)

	Material Category	Citywide	Generator Sectors		
			Single-Family Residential	Multi-Family Residential	Commercial
1	Newspaper	2.4%	1.6%	5.1%	2.9%
2	Corrugated Containers	6.3%	4.3%	2.1%	7.8%
3	Office Paper	2.1%	1.9%	0.7%	2.3%
4	Other Recyclable Paper	5.7%	6.1%	10.8%	5.3%
5	Other Non-Recyclable Paper	9.8%	7.7%	11.0%	11.2%
6	Aseptic Containers	0.5%	0.6%	0.7%	0.4%
7	PET Containers	2.1%	1.9%	5.6%	2.1%
8	HDPE Containers	1.1%	1.0%	1.4%	1.1%
9	Other Narrow-neck Plastic Containers	0.4%	0.5%	0.6%	0.4%
10	Non-Rigid Plastic Film	7.8%	6.0%	9.1%	8.9%
11	Styrofoam	1.2%	0.7%	1.4%	1.5%
12	All Other Plastics	4.4%	3.2%	1.9%	5.3%
13	Tin/Steel Cans	0.9%	1.0%	1.4%	0.9%
14	White Goods	0.0%	0.0%	0.0%	0.0%
15	Other Ferrous	1.2%	1.3%	1.1%	1.1%
16	Aluminum Cans	0.9%	0.9%	0.9%	0.8%
17	Other Non-Ferrous	0.8%	0.6%	0.6%	0.9%
18	Glass Containers	8.1%	6.3%	13.0%	9.3%
19	Other Glass	0.4%	0.5%	0.3%	0.2%
20	Textiles	3.5%	5.0%	3.4%	2.5%
21	Household Hazardous Waste	0.0%	0.0%	0.1%	0.0%
22	Electronics	1.0%	1.4%	0.1%	0.8%
23	Household Batteries	0.0%	0.1%	0.0%	0.0%
24	Wood Waste	1.7%	2.7%	1.4%	1.0%
25	C&D Debris	1.7%	2.4%	1.6%	1.3%
26	Tires and Rubber	0.3%	0.3%	0.1%	0.2%
27	Yard Waste	14.1%	27.4%	12.3%	5.0%
28	Food Waste	16.6%	9.0%	11.6%	22.0%
29	All Other Garbage	3.3%	4.3%	1.3%	2.7%
30	Liquids	1.0%	0.7%	0.3%	1.3%
31	Grit	0.5%	0.5%	0.1%	0.5%
	TOTALS	100.0%	100.0%	100.0%	100.0%

Table ES.2 identifies materials in the waste disposed that offer the greatest potential for recycling or composting. More than 70 percent of the waste currently disposed consists of recyclable or compostable materials, offering significant opportunities for the City to divert waste from disposal. The challenge is to establish effective programs to capture and process these materials in lieu of disposing of them.

Table ES.2: Potentially Recyclable or Compostable Materials in Waste Disposed (% by weight)

Material Categories	Citywide	Generator Sectors		
		Single-Family Residential	Multi-Family Residential	Commercial
Newspaper	2.4%	1.6%	5.1%	2.9%
Corrugated Containers	6.3%	4.3%	2.1%	7.8%
Office Paper	2.1%	1.9%	0.7%	2.3%
Other Recyclable Paper	5.7%	6.1%	10.8%	5.3%
Aseptic Containers	0.5%	0.6%	0.7%	0.4%
TOTAL RECYCLABLE PAPER	**17.1%**	**14.5%**	**19.5%**	**18.7%**
PET Containers	2.1%	1.9%	5.6%	2.1%
HDPE Containers	1.1%	1.0%	1.4%	1.1%
Other Narrow-neck Plastic Containers	0.4%	0.5%	0.6%	0.4%
Tin/Steel Cans	0.9%	1.0%	1.4%	0.9%
Aluminum Cans	0.9%	0.9%	0.9%	0.8%
Glass Containers	8.1%	6.3%	13.0%	9.3%
TOTAL RECYCLABLE CONTAINERS	**13.6%**	**11.6%**	**22.9%**	**14.6%**
Yard Waste	14.1%	27.4%	12.3%	5.0%
Food Waste	16.6%	9.0%	11.6%	22.0%
Other Non-Recyclable Paper	9.8%	7.7%	11.0%	11.2%
TOTAL COMPOSTABLES	**40.5%**	**44.1%**	**35.0%**	**38.2%**
COMBINED TOTAL	**71.2%**	**70.2%**	**77.4%**	**71.6%**

Recyclable paper and containers that are commonly included in recycling programs comprise nearly 31 percent of the waste disposed at the Transfer Station. Yard waste, which is segregated for mulching or composting in numerous communities throughout the State, makes up 14 percent of the waste disposed. Other types of organics (food waste and non-recyclable paper) contribute an additional 28 percent. Recovery of organics other than yard waste is not common in Florida, although programs for source separating organics prior to collection or separating them after collection through mixed waste processing have been implemented in a number of communities in the United States.

As part of the April field work, KCI also conducted visual audits of 14 of the 30 loads (47 percent) of bulk waste and construction and demolition debris (bulk/C&D) received at the Transfer Station during the 5-day event. Although bulk/C&D represents a relatively small amount of the materials received at the Transfer Station (1,220 tons in FY 2010, or 2.5 percent of all materials received), KCI conducted the visual audits to obtain a more complete understanding of the waste stream managed by the City at the Transfer Station.

Table ES.3 summarizes the results of the visual audits. Using industry data for the average density of these various material categories, the percentage by volume of each material category was converted to percentage by weight. The largest components of this stream, both by volume and by weight, are dimensional lumber (wood) and furniture.

Table ES.3: Composition of Bulk/C&D Delivered to Transfer Station, Based on Visual Audits

Material Category	Weighted Average (% by volume)	Volume (cy)	Density (lbs/cy)	Estimated Weight (lbs)	Weighted Average (% by weight)
Corrugated Cardboard, Kraft Paper	**1.4%**	1.5	53	**79**	**0.5%**
Other Ferrous	**1.0%**	1.1	225	**241**	**1.7%**
Other Metal	**2.3%**	2.6	225	**576**	**4.0%**
Other Plastic	**4.0%**	4.4	50	**220**	**1.5%**
Carpet padding	**0.9%**	1.0	62	**63**	**0.4%**
Prunings & Trimmings	**1.7%**	1.8	127	**232**	**1.6%**
Leaves & Grass	**3.7%**	4.1	312	**1,269**	**8.8%**
Dimensional Lumber/Pallets	**39.9%**	43.7	169	**7,382**	**51.1%**
Engineered & Other Recyclable Wood	**1.1%**	1.2	268	**313**	**2.2%**
Painted/Stained Wood	**1.3%**	1.4	169	**241**	**1.7%**
E-waste	**0.3%**	0.3	405	**112**	**0.8%**
Furniture	**42.5%**	46.5	80	**3,721**	**25.7%**
Tires	**0.0%**	0.0	200	**0**	**0.0%**
Mixed MSW	**0.0%**	0.0	250	**9**	**0.1%**
TOTAL	**100.0%**	**109.5**	**-**	**14,458**	**100.0%**

During the April event, KCI also interviewed individuals self-hauling recyclable materials to the Transfer Station. KCI staff interviewed 21 of 32 (66 percent) of incoming self-haul recycling loads. The goal of the survey was to understand who currently self-hauls, why they self-haul, and what materials are being delivered. Analysis of the survey results revealed the following:

- Self-hauling represents 50 percent of incoming recycling loads but only 9.5 percent of recyclables received by weight.
- 19 (90 percent) of the self-haulers were businesses and 2 (10 percent) were residents.
- Corrugated cardboard was the most commonly self-hauled material with 15 (71 percent) of the incoming loads being comprised of nearly 100 percent cardboard.
- Only 4 (19 percent) of the self-hauled recycling loads were comprised primarily of commingled containers, and 3 of these were comprised of nearly 100 percent glass bottles.
- The reasons given by residents for self-hauling were (1) live in an apartment with no access to recycling and (2) want to be sure recyclables are actually being recovered.
- Of the businesses self-hauling recyclables to the transfer station:
    - 7 (37 percent) never requested a quote from WMI for recycling service.
    - 7 (37 percent) self-haul because it is free.
    - 3 (16 percent) self-haul because it is convenient.
    - 4 (21 percent) self-haul because they have always recycled this way.
    - 2 (11 percent) thought this was the only place to recycle.
    - 2 (11 percent) stated the quote received from WMI for service was too expensive.
    - 1 (5 percent) has recycling service, but generates an overflow of material.

The survey results provide useful information, especially as it relates to commercial recycling. Businesses that self-haul recyclables demonstrate a commitment to recycling, but their responses to the survey are also indicative of the commercial sector's perceptions of recycling and its availability. Lack of knowledge or understanding about the recycling program and commercial recycling fees that are too high are clearly barriers to commercial recycling within the City.

The WCS is part of a larger project to develop a Solid Waste Master Plan for the City. The resulting data will be utilized by KCI throughout the remainder of the project, both to identify near-term recommendations to enhance material recovery, as well as in the continuing development of longer-term waste diversion recommendations and a Solid Waste Master Plan.

1.0 Introduction

1.1 Scope and Purpose

The City of Key West (City) contracted Kessler Consulting, Inc. (KCI) to conduct a two-season Waste Composition Study (WCS) to determine the composition of solid waste (residential and commercial waste) delivered to the City of Key West Transfer Station.

The study consisted of sampling and sorting municipal solid waste delivered by Waste Management collection vehicles to determine the types and percentages of solid waste currently disposed. A two-season approach was used to account for the effects of seasonal impacts, such as the growing season, tourism, transient residents, and consumer habits. During the second sorting event, KCI also conducted visual audits of bulk waste and C&D debris loads, as well as interviewed individuals self-hauling recyclable materials to the Transfer Station.

The WCS is part of a larger project to develop a Solid Waste Master Plan for the City. The purpose of the study is to identify the types and quantities of materials in the waste stream that could potentially be diverted from disposal.

1.2 Acknowledgements

KCI would like to acknowledge and thank City staff members who assisted with this study, in particular Jay Gewin and the staff of the transfer station. KCI would also like to thank Waste Management (WM) for providing a loader and operator during the sorting events. Their cooperation throughout the study enabled us to successfully and effectively complete our work.

2.0 Methodology

2.1 General Considerations

The WCS focused on residential and commercial waste delivered by WM, the City's franchised waste collection service provider, to the City's Transfer Station. Three generator sectors were evaluated during the study:

- Single-Family Residential;
- Multi-Family Residential; and
- Commercial.

Two sorting events were conducted to account for seasonal variability in the waste stream. The events were conducted on the following dates:

- November 15-19, 2010
- April 4-8, 2011

The methodology for this study followed industry-accepted standards for statistical sampling, as outlined in the *ASTM Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste (D5231-92; reapproved 2003)*.

During the second event, KCI also conducted visual audits of bulk waste and construction and demolition debris (bulk/C&D) loads. Bulk/C&D comprised less than 3 percent of the solid waste delivered to the Transfer Station for disposal in FY 2010; however, an understanding of the typical composition of this waste stream will be valuable for future planning. Visual audits were conducted because bulk/C&D is not generally conducive to manual sorting.

During the second event, KCI also interviewed individuals self-hauling recyclable materials to the Transfer Station to understand who is self-hauling and why they are not contracting for collection.

2.2 Material Categories

KCI worked with City staff to develop a list of 31 material categories into which waste would be sorted (see Appendix A). To develop this list of material categories, KCI reviewed the following information:

- FDEP Annual Solid Waste Management Report forms – All of the material categories used in the WCS can be correlated to those required by FDEP in the annual reporting by counties.
- Recyclable materials accepted in the City's curbside program – The WCS results will help identify the amounts of City-accepted recyclables still being disposed.

Bulk/C&D loads were visually categorized into the 35 material categories defined in Appendix B.

2.3 Locations, Equipment and Labor

Each one-week sorting event of the study was conducted during the hours of 6:00 am to 3:00 pm Monday through Friday. KCI provided a Sampling Supervisor, Sorting Supervisor, all sorting equipment, and safety gear. The City coordinated with WM to provide a loader and operator to gather samples and remove waste upon completion of sorting activities. All sort labor was provided by KCI, through an agreement with Labor Ready of Miami.

KCI prepared and City staff reviewed and approved a site safety plan that was followed throughout the sorting events. KCI worked closely with City staff to organize the setup of each location to ensure worker safety. City and facility staff set up barricades where needed, to cordon off the sorting and sample areas to protect workers from incoming and outgoing collection vehicles. Each morning of the events, sorters were given thorough safety instructions by one of KCI's Supervisors to ensure safety and proper sorting. No injuries or emergencies occurred during the sorting events.

2.4 Sampling Schedule and Procedures

Sample selection was organized by generator sectors to ensure a sufficient number of samples would be sorted for each generator sector to achieve statistically valid results. The number of samples sorted for each generator sector is presented below.

Generator Sectors	November	April
1 Single-Family Residential	15	15
2 Multi-Family Residential	4	4
3 Commercial	21	22
Total Samples	40	41

Ideally, a greater number of multi-family residential samples would have been sorted; however, waste from this generator sector is typically collected on the same routes as commercial waste. To ensure samples from the multi-family residential sector contained only waste from apartments and condominiums, KCI sampled only compactors from such dwellings. During the November sorting event, WMI ran a special collection route of only multi-family establishments, which was also sampled.

KCI worked with WM staff to understand the geographic areas serviced each day. Route information was combined with City tonnage data to ensure that the loads selected for sampling were geographically distributed. Using this information, KCI developed a sampling schedule detailing the total number of incoming vehicles and number of samples needed for each generator on each day.

As vehicles waited for permission to enter the Transfer Station, KCI's Sampling Supervisor interviewed drivers to identify the generator sector and origin of the waste. If the vehicle matched KCI's sampling criteria and was selected for sampling, the Sampling Supervisor noted the following information on the data recording form:

- Hauler name and truck number,
- Date and time,
- Generator sector and geographic origin,

- Scalehouse transaction number and net weight.

The Sampling Supervisor then directed the vehicle driver to tip the load in a designated area and a representative sample of 200-300 pounds was pulled and placed on a tarp to await sorting. Figure 2.1 depicts typical samples ready for sorting.

Figure 2.1: Typical Waste Samples

2.5 Sorting Procedures

Selected samples were sorted into the previously defined material categories. Figure 2.2 depicts the sorting activities. After the entire sample was sorted, the Sorting Supervisor weighed and recorded the weights of each container on a data recording form. Tare weights of empty containers, recorded prior to sorting, were subtracted from the weights of the containers after sorting to obtain the net weight of each material category.

Figure 2.2: Waste Sorting Activities

2.6 Analytical Procedures

After each sorting event, KCI calculated the weighted average of each material category for each generator sector. Confidence intervals were calculated for each material category using a standard statistical t-test.

To obtain the composition of all waste disposed at the City's facility, the three generator sectors (i.e., single-family residential, multi-family residential, and commercial) were combined based upon the amount of waste each generator sector contributes to the overall waste stream. To estimate the percentage that each contributes to the citywide solid waste stream delivered by WM to the transfer station, KCI reviewed tonnage data for the week of November 15-20, 2010. The percentages below were used to combine the three generator sectors.

- Single-family residential – 40 percent
- Multi-family residential – 2 percent (represents only multi-family waste delivered in separate loads; the remainder of multi-family solid waste is collected with commercial waste)
- Commercial – 58 percent

To estimate the average year-round waste composition, the same analytical procedures outlined above were conducted to combine the results from the summer and winter sorting events for each generator sector.

3.0 Results

3.1 Introduction to Results

All results presented in this section are expressed in percentage by weight. The percentages included in the tables and figures are the mean values for each material category. Where appropriate, the tables also provide the 90 percent confidence intervals for each material category. The confidence interval indicates that, with a 90 percent level of confidence, the actual arithmetic mean (the arithmetic mean obtained if an infinite number of samples were sorted) is within the upper and lower limits shown. This provides an understanding of how much variation occurred in the quantity of that material category found in the samples sorted. Generally, the more homogeneous the waste stream and the greater the number of samples sorted, the higher the level of accuracy achieved and the narrower the margin between the upper and lower bounds of the confidence interval.

3.2 Citywide Waste

Data for the three generator sectors (single-family residential, multi-family residential, and commercial) from both sorting events (November 2010 and April 2011) were combined to calculate the overall composition of waste delivered to the Transfer Station for disposal (not including bulk/C&D). Figure 3.1 depicts the composition of this citywide waste stream, and Table 3.1 presents the contribution of the three generator sectors. Table 3.2 compares the results of the November and April sorting events.

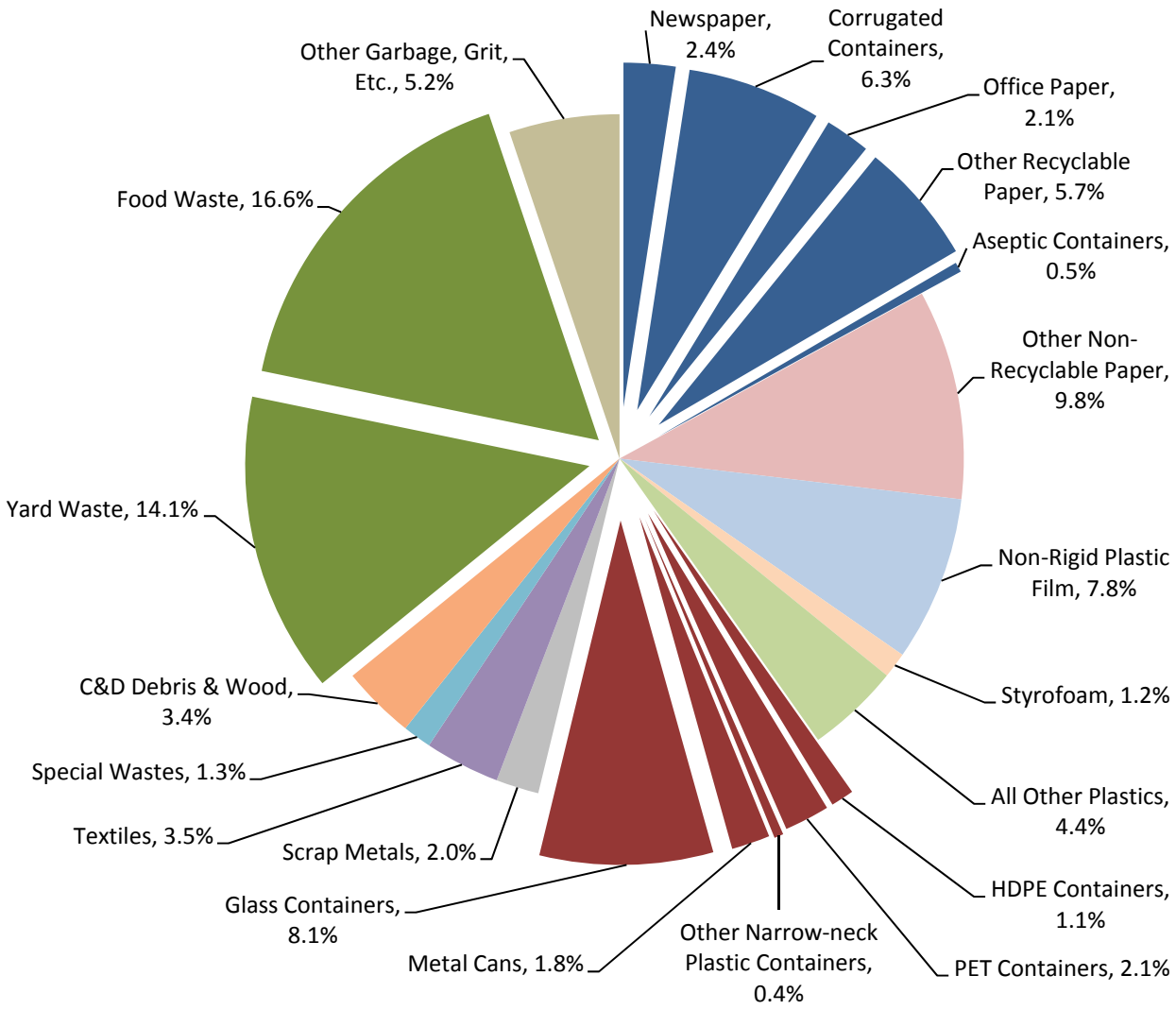
The main types of potentially recyclable or compostable materials are noted below. Substantial opportunities exist to increase waste diversion, with recyclable paper and containers comprising more than 30 percent of the waste stream, and organics (yard waste, food waste, and non-recyclable paper) contributing an additional 40 percent.

Material Categories	Percent by Weight
Recyclable Paper	17.1%
Recyclable Containers	13.6%
Yard Waste	14.1%
Food Waste	16.6%
Other Non-Recyclable Paper	9.8%
Subtotal	**71.2%**

All garbage is local; however, a cursory comparison between the City's waste stream with waste composition studies KCI has conducted during the last few years reveals the following:

- The percentage of recyclable paper is lower than the typical range of 20-26 percent.
- The percentage of recyclable containers is higher than the typical range of 8-12 percent, primarily because of the higher percentage of glass (8 percent versus 3-5 percent).
- The percentage of yard waste is higher than the typical range of 2-9 percent, which is anticipated since the City has no recovery program in place for yard waste.

Figure 3.1: Composition of Citywide Waste Disposed at Transfer Station (% by weight)



Note: For the purpose of this chart, Special Wastes includes the categories of Household Hazardous Waste, Electronics, Household Batteries, and Tires and Rubber; Metal Cans includes the categories of Aluminum and Tin/Steel Cans; Scrap Metals includes the categories of Ferrous and Non-Ferrous Metals; and Other Garbage, Grit, Etc. includes the categories of All Other Garbage, Grit, Liquids, and Other Glass.

Table 3.1: Composition of Citywide Waste Disposed, by Generator Sector (% by weight)

	Material Category	Single-Family Weighted Average	Multi-Family Weighted Average	Commercial Weighted Average	Citywide Weighted Average
1	Newspaper	1.6%	5.1%	2.9%	2.4%
2	Corrugated Containers	4.3%	2.1%	7.8%	6.3%
3	Office Paper	1.9%	0.7%	2.3%	2.1%
4	Other Recyclable Paper	6.1%	10.8%	5.3%	5.7%
5	Other Non-Recyclable Paper	7.7%	11.0%	11.2%	9.8%
6	Aseptic Containers	0.6%	0.7%	0.4%	0.5%
7	PET Containers	1.9%	5.6%	2.1%	2.1%
8	HDPE Containers	1.0%	1.4%	1.1%	1.1%
9	Other Narrow-neck Plastic Containers	0.5%	0.6%	0.4%	0.4%
10	Non-Rigid Plastic Film	6.0%	9.1%	8.9%	7.8%
11	Styrofoam	0.7%	1.4%	1.5%	1.2%
12	All Other Plastics	3.2%	1.9%	5.3%	4.4%
13	Tin/Steel Cans	1.0%	1.4%	0.9%	0.9%
14	White Goods	0.0%	0.0%	0.0%	0.0%
15	Other Ferrous	1.3%	1.1%	1.1%	1.2%
16	Aluminum Cans	0.9%	0.9%	0.8%	0.9%
17	Other Non-Ferrous	0.6%	0.6%	0.9%	0.8%
18	Glass Containers	6.3%	13.0%	9.3%	8.1%
19	Other Glass	0.5%	0.3%	0.2%	0.4%
20	Textiles	5.0%	3.4%	2.5%	3.5%
21	Household Hazardous Waste	0.0%	0.1%	0.0%	0.0%
22	Electronics	1.4%	0.1%	0.8%	1.0%
23	Household Batteries	0.1%	0.0%	0.0%	0.0%
24	Wood Waste	2.7%	1.4%	1.0%	1.7%
25	C&D Debris	2.4%	1.6%	1.3%	1.7%
26	Tires and Rubber	0.3%	0.1%	0.2%	0.3%
27	Yard Waste	27.4%	12.3%	5.0%	14.1%
28	Food Waste	9.0%	11.6%	22.0%	16.6%
29	All Other Garbage	4.3%	1.3%	2.7%	3.3%
30	Liquids	0.7%	0.3%	1.3%	1.0%
31	Grit	0.5%	0.1%	0.5%	0.5%
	Sector Generation Rates	40.0%	2.0%	58.0%	100.0%

Table 3.2: Composition of Citywide Waste Disposed, by Seasonal Sorting Event (% by weight)

		November 2010	April 2011	Combined
	Material Category	**Weighted Average**	**Weighted Average**	**Weighted Average**
1	Newspaper	**2.6%**	**2.3%**	**2.4%**
2	Corrugated Containers	**6.4%**	**6.2%**	**6.3%**
3	Office Paper	**2.1%**	**2.1%**	**2.1%**
4	Other Recyclable Paper	**7.1%**	**4.3%**	**5.7%**
5	Other Non-Recyclable Paper	**9.4%**	**10.2%**	**9.8%**
6	Aseptic Containers	**0.3%**	**0.6%**	**0.5%**
7	PET Containers	**1.9%**	**2.3%**	**2.1%**
8	HDPE Containers	**1.2%**	**1.0%**	**1.1%**
9	Other Narrow-neck Plastic Containers	**0.3%**	**0.5%**	**0.4%**
10	Non-Rigid Plastic Film	**6.8%**	**8.8%**	**7.8%**
11	Styrofoam	**1.0%**	**1.3%**	**1.2%**
12	All Other Plastics	**4.4%**	**4.4%**	**4.4%**
13	Tin/Steel Cans	**1.1%**	**0.8%**	**0.9%**
14	White Goods	**0.0%**	**0.0%**	**0.0%**
15	Other Ferrous	**1.1%**	**1.4%**	**1.2%**
16	Aluminum Cans	**0.9%**	**0.9%**	**0.9%**
17	Other Non-Ferrous	**0.5%**	**1.2%**	**0.8%**
18	Glass Containers	**8.5%**	**7.7%**	**8.1%**
19	Other Glass	**0.5%**	**0.2%**	**0.4%**
20	Textiles	**3.2%**	**3.9%**	**3.5%**
21	Household Hazardous Waste	**0.0%**	**0.0%**	**0.0%**
22	Electronics	**1.0%**	**1.1%**	**1.0%**
23	Household Batteries	**0.0%**	**0.1%**	**0.0%**
24	Wood Waste	**1.9%**	**1.6%**	**1.7%**
25	C&D Debris	**1.6%**	**1.8%**	**1.7%**
26	Tires and Rubber	**0.2%**	**0.3%**	**0.3%**
27	Yard Waste	**11.9%**	**16.3%**	**14.1%**
28	Food Waste	**17.6%**	**15.5%**	**16.6%**
29	All Other Garbage	**4.4%**	**2.2%**	**3.3%**
30	Liquids	**1.4%**	**0.7%**	**1.0%**
31	Grit	**0.7%**	**0.2%**	**0.5%**
	TOTALS	100.0%	100.0%	**100.0%**

3.3 Single-Family Residential Waste

Figure 3.2 depicts the composition of waste disposed by single-family residences within the City, and Table 3.3 compares the results of the summer and winter sorting events for single-family residential waste.

The main types of potentially recyclable or compostable materials in the single-family residential waste stream are noted below. Recyclable paper and containers comprise more than 26 percent of the waste stream and yard waste makes up an additional 27 percent. These categories alone represent more than half the single-family residential waste stream. Other organics (food waste and non-recyclable paper) contribute an additional 17 percent.

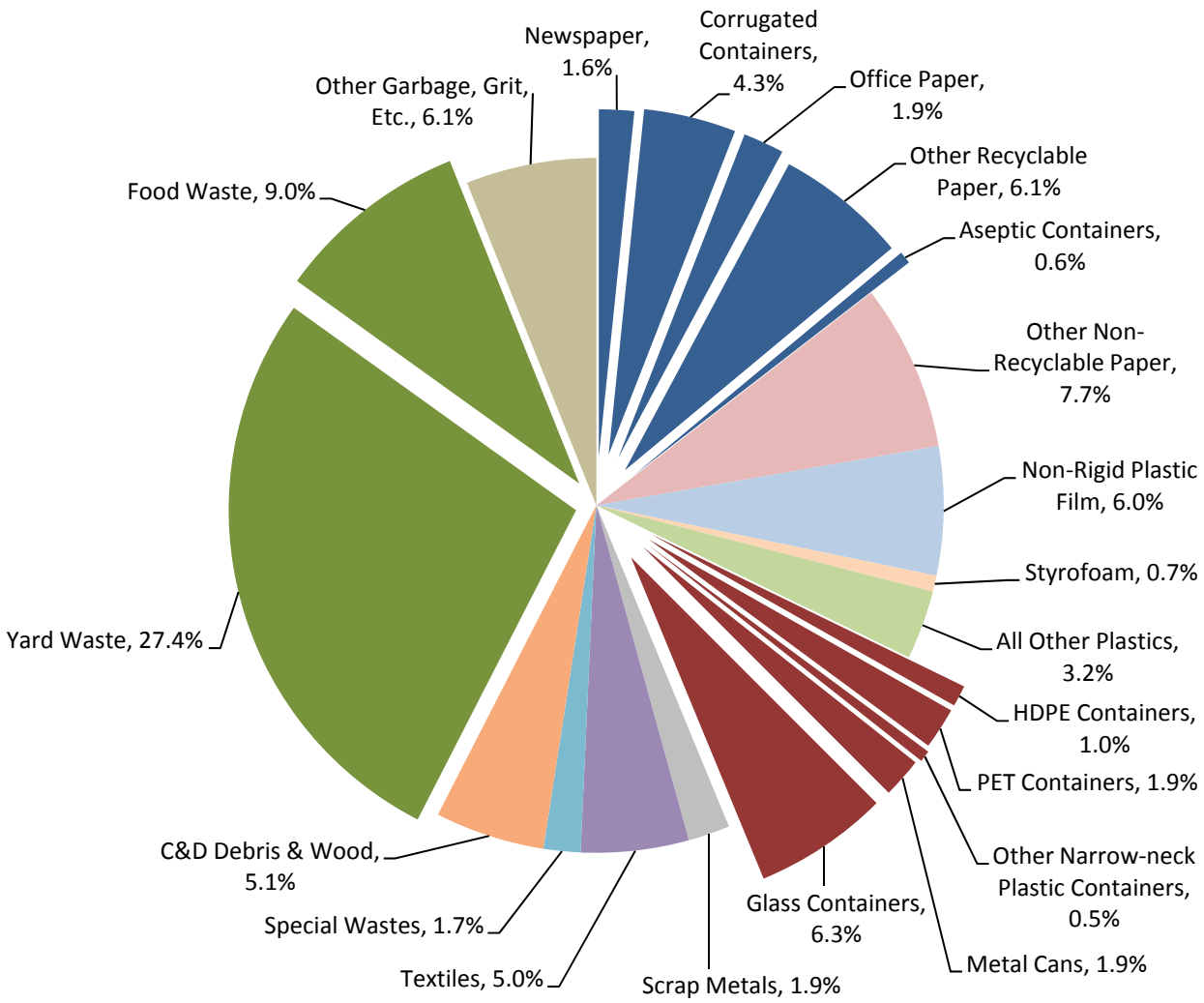
Material Categories	Percent by Weight
Recyclable Paper	14.5%
Recyclable Containers	11.6%
Yard Waste	27.4%
Food Waste	9.0%
Other Non-Recyclable Paper	7.7%
Subtotal	**70.2%**

The most significant seasonal variation was in Yard Waste, which represented a higher percentage of single-family residential waste in April (32.7 percent) than in November (22.6 percent), reflective of both the growing season and increased activity during peak tourist season. The percentage of Non-Rigid Plastic Film was also higher in April (7.2 percent) than in November (4.9 percent). The most significant percentage decreases between the November and April events were seen in Other Recyclable Paper and Food Waste.

The percentage of yard waste is significantly higher in the City than in other jurisdictions in which KCI recently conducted WCSs. In jurisdictions with separate yard waste collection, the percentage of yard waste in single-family residential waste has ranged from 3-5 percent; and in jurisdictions without separate yard waste collection, it has increased to 10-14 percent. The percentage of yard waste in the City's single-family residential waste is nearly double the high end of the latter range, making this a prime target to increase waste diversion.

Because a program is already in place to recover single-family residential recyclable paper and containers, these materials also offer opportunities for additional waste diversion through incentive programs and education.

Figure 3.2: Composition of Single-Family Residential Waste Disposed (% by weight)



Note: For the purpose of this chart, Special Wastes includes the categories of Household Hazardous Waste, Electronics, Household Batteries, and Tires and Rubber; Metal Cans includes the categories of Aluminum and Tin/Steel Cans; Scrap Metals includes the categories of Ferrous and Non-Ferrous Metals; and Other Garbage, Grit, Etc. includes the categories of All Other Garbage, Grit, Liquids, and Other Glass.

Table 3.3: Composition of Single-Family Residential Waste Disposed, by Seasonal Sorting Event (% by weight)

		November 2010			April 2011			Combined		
			90% Confidence Interval			90% Confidence Interval			90% Confidence Interval	
	Material Category	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds
1	Newspaper	**1.7%**	1.2%	2.1%	**1.6%**	1.1%	2.1%	**1.6%**	1.3%	2.0%
2	Corrugated Containers	**4.5%**	2.5%	6.4%	**4.1%**	2.5%	5.7%	**4.3%**	3.1%	5.5%
3	Office Paper	**2.1%**	1.4%	2.9%	**1.7%**	1.1%	2.2%	**1.9%**	1.5%	2.3%
4	Other Recyclable Paper	**7.2%**	5.3%	9.1%	**4.9%**	3.2%	6.6%	**6.1%**	4.9%	7.4%
5	Other Non-Recyclable Paper	**7.2%**	6.2%	8.3%	**8.3%**	5.9%	10.7%	**7.7%**	6.5%	9.0%
6	Aseptic Containers	**0.2%**	0.2%	0.3%	**0.9%**	0.2%	1.7%	**0.6%**	0.2%	0.9%
7	PET Containers	**1.8%**	1.3%	2.3%	**2.0%**	1.6%	2.5%	**1.9%**	1.6%	2.3%
8	HDPE Containers	**1.1%**	0.8%	1.4%	**0.9%**	0.6%	1.1%	**1.0%**	0.8%	1.1%
9	Other Narrow-neck Plastic Containers	**0.4%**	0.3%	0.6%	**0.6%**	0.2%	1.1%	**0.5%**	0.3%	0.7%
10	Non-Rigid Plastic Film	**4.9%**	4.2%	5.6%	**7.2%**	5.7%	8.6%	**6.0%**	5.2%	6.8%
11	Styrofoam	**0.8%**	0.6%	1.1%	**0.6%**	0.4%	0.9%	**0.7%**	0.6%	0.9%
12	All Other Plastics	**3.3%**	2.8%	3.9%	**3.1%**	2.2%	3.9%	**3.2%**	2.8%	3.7%
13	Tin/Steel Cans	**1.3%**	1.0%	1.6%	**0.6%**	0.4%	0.8%	**1.0%**	0.8%	1.2%
14	White Goods	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%
15	Other Ferrous	**1.0%**	0.4%	1.5%	**1.7%**	0.5%	2.9%	**1.3%**	0.7%	1.9%
16	Aluminum Cans	**0.8%**	0.6%	1.0%	**1.0%**	0.5%	1.5%	**0.9%**	0.7%	1.1%
17	Other Non-Ferrous	**0.6%**	0.4%	0.7%	**0.7%**	0.2%	1.2%	**0.6%**	0.4%	0.8%
18	Glass Containers	**7.1%**	4.8%	9.4%	**5.3%**	3.9%	6.8%	**6.3%**	5.0%	7.5%
19	Other Glass	**0.7%**	-0.2%	1.5%	**0.4%**	0.2%	0.6%	**0.5%**	0.1%	0.9%
20	Textiles	**4.1%**	2.8%	5.5%	**6.0%**	3.9%	8.1%	**5.0%**	3.8%	6.2%
21	Household Hazardous Waste	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%
22	Electronics	**1.6%**	0.4%	2.9%	**1.1%**	0.4%	1.7%	**1.4%**	0.7%	2.0%
23	Household Batteries	**0.0%**	0.0%	0.1%	**0.1%**	0.0%	0.2%	**0.1%**	0.0%	0.1%
24	Wood Waste	**2.7%**	1.6%	3.9%	**2.7%**	1.2%	4.2%	**2.7%**	1.8%	3.6%
25	C&D Debris	**3.0%**	1.3%	4.7%	**1.7%**	0.6%	2.8%	**2.4%**	1.5%	3.3%
26	Tires and Rubber	**0.4%**	-0.3%	1.1%	**0.2%**	-0.1%	0.4%	**0.3%**	-0.1%	0.6%
27	Yard Waste	**22.6%**	16.6%	28.5%	**32.7%**	26.8%	38.6%	**27.4%**	23.2%	31.5%
28	Food Waste	**10.7%**	7.9%	13.4%	**7.2%**	5.7%	8.7%	**9.0%**	7.5%	10.6%
29	All Other Garbage	**6.3%**	5.1%	7.5%	**2.0%**	1.1%	2.9%	**4.3%**	3.3%	5.3%
30	Liquids	**0.8%**	0.5%	1.2%	**0.7%**	0.3%	1.0%	**0.7%**	0.5%	1.0%
31	Grit	**0.8%**	0.2%	1.4%	**0.2%**	0.0%	0.4%	**0.5%**	0.2%	0.8%
	TOTALS	**100.0%**			**100.0%**			**100.0%**		

3.4 Multi-Family Residential Waste

Figure 3.3 depicts the composition of waste disposed by multi-family residents within the City, and Table 3.4 compares the results of the summer and winter sorting events for multi-family residential waste. The 90 percent confidence intervals for the various material categories are generally wider than those for the single-family residential results. This is because multi-family waste is typically collected on commercial routes and, therefore, fewer loads of multi-family residential waste were available for sampling.

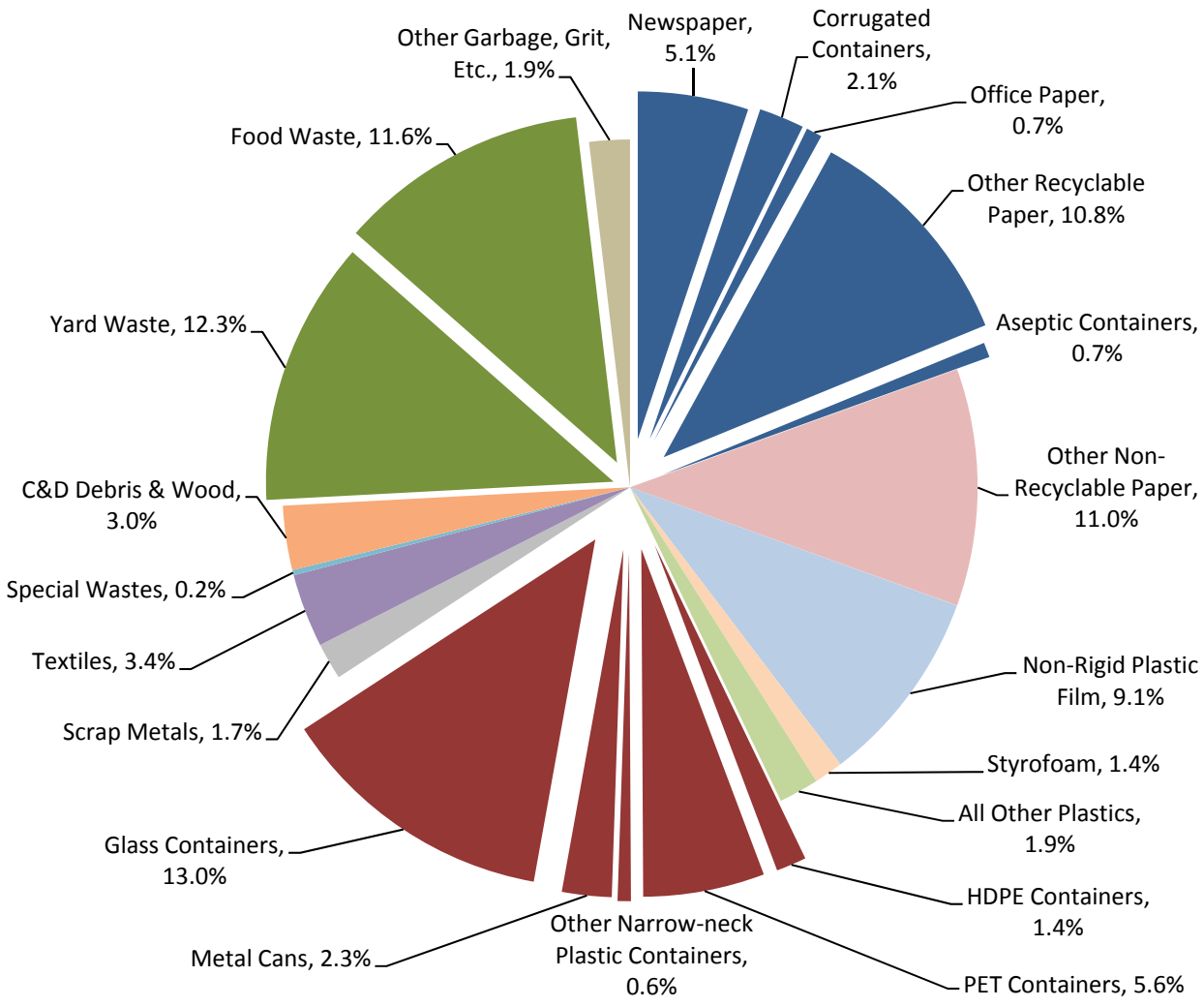
The main types of potentially recyclable or compostable materials in the multi-family residential waste stream are noted below. Recyclable paper and containers comprise more than 42 percent of the waste stream. Yard waste makes up 12 percent, and other organics (food waste and non-recyclable paper) contribute an additional 23 percent.

Material Categories	Percent by Weight
Recyclable Paper	19.5%
Recyclable Containers	22.9%
Yard Waste	12.3%
Food Waste	11.6%
Other Non-Recyclable Paper	11.0%
Subtotal	**77.4%**

The most significant seasonal variations were in Yard Waste, Glass Containers, and Corrugated Cardboard. The percentage of Yard Waste was substantially higher in April (13.9 percent) than in November (4.1 percent). An increase in the percentage of Glass Containers from November (9.9 percent) to April (13.6 percent) was also noted: however, a drop in the percentage of Corrugated Cardboard was seen from November (7.6 percent) to April (1.1 percent).

The most notable difference when compared with multi-family residential waste composition in other recent WCSs is the relatively high percentage of yard waste. Multi-family residential waste typically has low percentages of yard waste, ranging from 1-6 percent. The reason the City's percentage is more than double the high end of this range may be because samples were pulled primarily from multi-family complexes having individual compactors. These complexes may be more likely to have lush subtropical vegetation or to have in-house staff for groundskeeping rather than contracting out this service (in-house staff would utilize the facility compactor whereas contractors would typically be responsible for hauling and disposing of the yard waste).

Figure 3.3: Composition of Multi-Family Residential Waste Disposed (% by weight)



Note: For the purpose of this chart, Special Wastes includes the categories of Household Hazardous Waste, Electronics, Household Batteries, and Tires and Rubber; Metal Cans includes the categories of Aluminum and Tin/Steel Cans; Scrap Metals includes the categories of Ferrous and Non-Ferrous Metals; and Other Garbage, Grit, Etc. includes the categories of All Other Garbage, Grit, Liquids, and Other Glass.

Table 3.4: Composition of Multi-Family Residential Waste Disposed, by Seasonal Sorting Event (% by weight)

		November 2010			April 2011			Combined		
			90% Confidence Interval			90% Confidence Interval			90% Confidence Interval	
	Material Category	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds
1	Newspaper	**3.6%**	0.8%	6.3%	**5.4%**	1.1%	9.8%	**5.1%**	3.2%	7.1%
2	Corrugated Containers	**7.6%**	1.0%	14.1%	**1.1%**	-2.3%	4.5%	**2.1%**	-1.0%	5.2%
3	Office Paper	**0.8%**	0.0%	1.5%	**0.7%**	-0.6%	2.0%	**0.7%**	0.0%	1.4%
4	Other Recyclable Paper	**7.3%**	6.1%	8.5%	**11.5%**	6.5%	16.5%	**10.8%**	8.9%	12.8%
5	Other Non-Recyclable Paper	**10.3%**	8.8%	11.8%	**11.2%**	6.8%	15.5%	**11.0%**	9.3%	12.8%
6	Aseptic Containers	**0.8%**	-0.3%	2.0%	**0.7%**	0.1%	1.3%	**0.7%**	0.2%	1.2%
7	PET Containers	**3.3%**	2.2%	4.5%	**6.1%**	3.3%	8.9%	**5.6%**	4.5%	6.8%
8	HDPE Containers	**1.7%**	1.4%	2.1%	**1.3%**	-0.4%	3.1%	**1.4%**	0.7%	2.1%
9	Other Narrow-neck Plastic Containers	**0.5%**	0.2%	0.7%	**0.6%**	0.3%	1.0%	**0.6%**	0.5%	0.8%
10	Non-Rigid Plastic Film	**8.3%**	4.9%	11.7%	**9.3%**	2.6%	15.9%	**9.1%**	6.3%	11.9%
11	Styrofoam	**1.6%**	0.6%	2.5%	**1.3%**	-1.1%	3.7%	**1.4%**	0.4%	2.3%
12	All Other Plastics	**3.8%**	2.2%	5.4%	**1.5%**	-0.3%	3.3%	**1.9%**	0.8%	2.9%
13	Tin/Steel Cans	**1.9%**	1.5%	2.4%	**1.2%**	-0.1%	2.6%	**1.4%**	0.8%	1.9%
14	White Goods	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%
15	Other Ferrous	**0.6%**	-0.7%	2.0%	**1.2%**	0.5%	2.0%	**1.1%**	0.6%	1.7%
16	Aluminum Cans	**1.7%**	0.7%	2.7%	**0.8%**	0.4%	1.2%	**0.9%**	0.5%	1.4%
17	Other Non-Ferrous	**0.9%**	-0.8%	2.7%	**0.5%**	0.2%	0.8%	**0.6%**	-0.1%	1.3%
18	Glass Containers	**9.9%**	6.2%	13.5%	**13.6%**	6.9%	20.2%	**13.0%**	9.9%	16.0%
19	Other Glass	**0.1%**	-0.2%	0.5%	**0.3%**	-1.5%	2.1%	**0.3%**	-0.6%	1.1%
20	Textiles	**2.9%**	-0.6%	6.4%	**3.5%**	1.6%	5.4%	**3.4%**	1.9%	4.9%
21	Household Hazardous Waste	**0.1%**	0.0%	0.3%	**0.1%**	-1.3%	1.5%	**0.1%**	-0.5%	0.7%
22	Electronics	**0.1%**	0.0%	0.2%	**0.1%**	-0.5%	0.7%	**0.1%**	-0.2%	0.3%
23	Household Batteries	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%
24	Wood Waste	**4.3%**	-4.9%	13.6%	**0.9%**	-3.5%	5.2%	**1.4%**	-2.5%	5.3%
25	C&D Debris	**2.6%**	-0.9%	6.1%	**1.4%**	-13.8%	16.6%	**1.6%**	-4.4%	7.6%
26	Tires and Rubber	**0.4%**	-0.5%	1.2%	**0.0%**	-0.1%	0.1%	**0.1%**	-0.3%	0.4%
27	Yard Waste	**4.1%**	-2.6%	10.9%	**13.9%**	8.9%	18.8%	**12.3%**	7.4%	17.2%
28	Food Waste	**14.4%**	9.9%	19.0%	**11.1%**	6.7%	15.6%	**11.6%**	9.1%	14.2%
29	All Other Garbage	**4.6%**	0.9%	8.4%	**0.7%**	-0.9%	2.2%	**1.3%**	-0.5%	3.0%
30	Liquids	**1.7%**	0.4%	2.9%	**0.0%**	-0.1%	0.2%	**0.3%**	-0.5%	1.0%
31	Grit	**0.0%**	0.0%	0.0%	**0.1%**	-0.8%	1.0%	**0.1%**	-0.3%	0.4%
	TOTALS	**100.0%**			**100.0%**			**100.0%**		

3.5 Commercial Waste

Figure 3.4 depicts the composition of commercial waste disposed by businesses within the City, and Table 3.5 compares the results of the summer and winter sorting events for commercial waste.

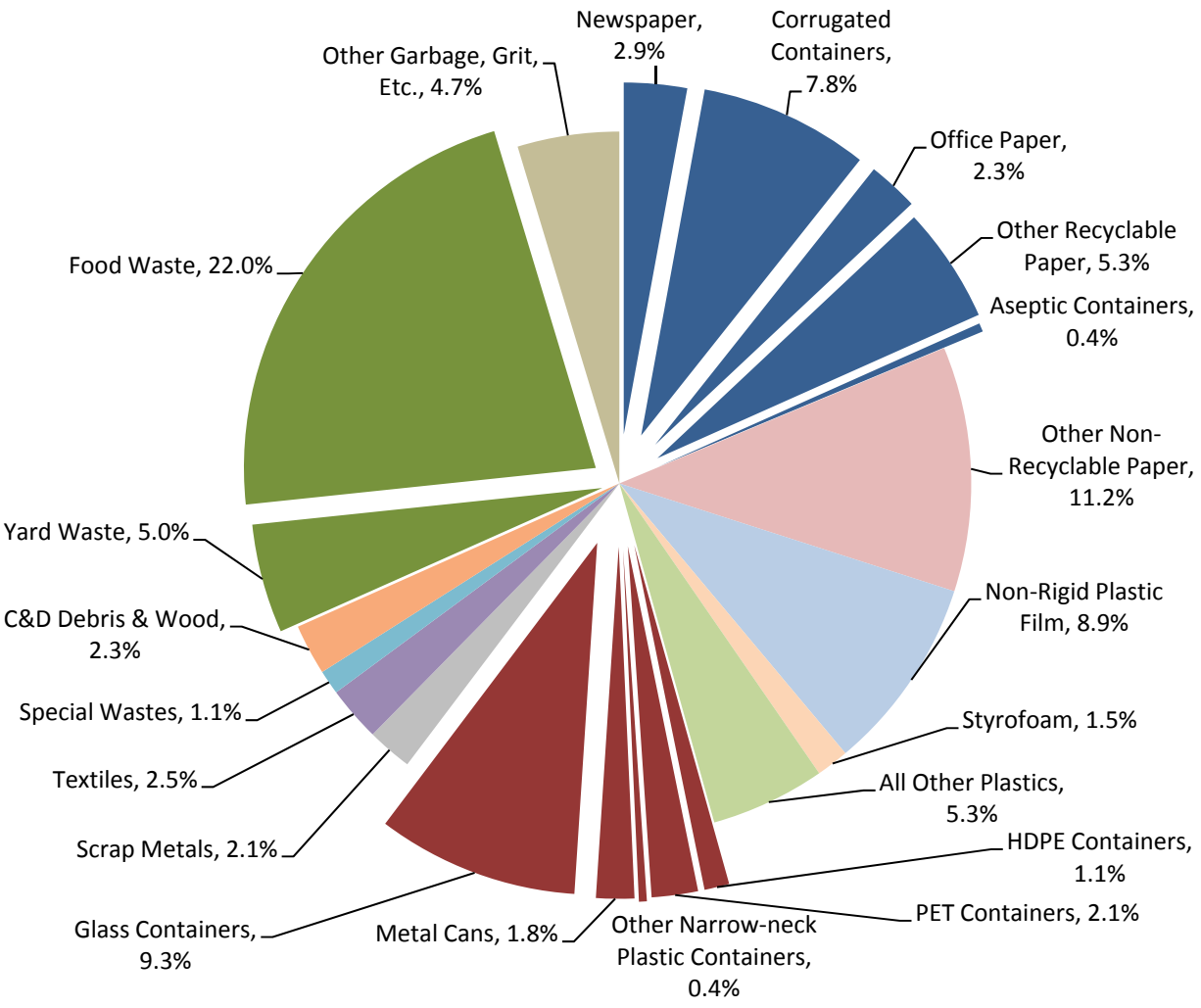
The main types of potentially recyclable or compostable materials in the commercial waste stream are noted below. Recyclable paper and containers comprise more than 33 percent of the waste stream. Yard waste represents only 5 percent of commercial waste, as anticipated, but food waste contributes 22 percent and non-recyclable paper an additional 11 percent.

Material Categories	Percent by Weight
Recyclable Paper	18.7%
Recyclable Containers	14.6%
Yard Waste	5.0%
Food Waste	22.0%
Other Non-Recyclable Paper	11.2%
Subtotal	**71.6%**

Little seasonal variation was noticed between the November and April sorting events, meaning that although the quantity of commercial waste generated is greater during periods of higher tourism, the overall composition of the commercial waste stream does not significantly fluctuate seasonally. Commercial waste typically contains relatively small quantities of yard waste; therefore, seasonal fluctuations in this material category did not impact the overall composition of this waste stream. The largest variation observed was a decrease in Other Recyclable Paper from 7.0 percent in November to 3.6 percent in April.

The differences between the City's commercial waste stream and that found in other recent WCSs conducted by KCI are indicative of the role that tourism plays in the City. The percentage of recyclable paper in the City's commercial waste is lower than the typical range of 21-28 percent, but the percentage of recyclable containers is higher than the typical range of 7-10 percent, primarily because of a higher percentage of glass containers. In addition, the percentage of food waste is at the high end of the typical range for commercial waste of 13-23 percent.

Figure 3.4: Composition of Commercial Waste Disposed (% by weight)



Note: For the purpose of this chart, Special Wastes includes the categories of Household Hazardous Waste, Electronics, Household Batteries, and Tires and Rubber; Metal Cans includes the categories of Aluminum and Tin/Steel Cans; Scrap Metals includes the categories of Ferrous and Non-Ferrous Metals; and Other Garbage, Grit, Etc. includes the categories of All Other Garbage, Grit, Liquids, and Other Glass.

Table 3.5: Composition of Commercial Waste Disposed, by Seasonal Sorting Event (% by weight)

		November 2010			April 2011			Combined		
			90% Confidence Interval			90% Confidence Interval			90% Confidence Interval	
	Material Category	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds	Weighted Average	Lower Bounds	Upper Bounds
1	Newspaper	**3.2%**	2.1%	4.3%	**2.6%**	1.4%	3.7%	**2.9%**	2.1%	3.7%
2	Corrugated Containers	**7.7%**	5.1%	10.3%	**7.9%**	4.3%	11.4%	**7.8%**	5.7%	9.9%
3	Office Paper	**2.2%**	1.0%	3.4%	**2.4%**	1.1%	3.8%	**2.3%**	1.5%	3.2%
4	Other Recyclable Paper	**7.0%**	5.6%	8.5%	**3.6%**	2.7%	4.6%	**5.3%**	4.4%	6.2%
5	Other Non-Recyclable Paper	**10.9%**	9.3%	12.6%	**11.6%**	9.8%	13.4%	**11.2%**	10.1%	12.4%
6	Aseptic Containers	**0.3%**	0.2%	0.5%	**0.4%**	0.3%	0.6%	**0.4%**	0.3%	0.5%
7	PET Containers	**1.8%**	1.4%	2.3%	**2.4%**	1.5%	3.3%	**2.1%**	1.7%	2.6%
8	HDPE Containers	**1.3%**	1.1%	1.5%	**1.0%**	0.7%	1.3%	**1.1%**	0.9%	1.3%
9	Other Narrow-neck Plastic Containers	**0.3%**	0.1%	0.4%	**0.5%**	0.0%	0.9%	**0.4%**	0.1%	0.6%
10	Non-Rigid Plastic Film	**8.0%**	7.1%	8.9%	**9.9%**	8.2%	11.5%	**8.9%**	8.0%	9.9%
11	Styrofoam	**1.2%**	0.6%	1.7%	**1.8%**	0.0%	3.6%	**1.5%**	0.6%	2.4%
12	All Other Plastics	**5.2%**	3.6%	6.7%	**5.3%**	4.3%	6.4%	**5.3%**	4.4%	6.1%
13	Tin/Steel Cans	**0.9%**	0.6%	1.3%	**0.9%**	0.7%	1.2%	**0.9%**	0.7%	1.1%
14	White Goods	**0.0%**	0.0%	0.1%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.0%
15	Other Ferrous	**1.1%**	0.3%	2.0%	**1.1%**	-0.5%	2.8%	**1.1%**	0.2%	2.0%
16	Aluminum Cans	**0.9%**	0.6%	1.1%	**0.8%**	0.6%	1.0%	**0.8%**	0.7%	1.0%
17	Other Non-Ferrous	**0.4%**	0.3%	0.5%	**1.5%**	-0.1%	3.2%	**0.9%**	0.1%	1.8%
18	Glass Containers	**9.4%**	6.9%	11.8%	**9.2%**	6.5%	11.8%	**9.3%**	7.6%	11.0%
19	Other Glass	**0.3%**	0.0%	0.7%	**0.1%**	0.0%	0.2%	**0.2%**	0.1%	0.4%
20	Textiles	**2.5%**	0.8%	4.2%	**2.5%**	1.1%	3.9%	**2.5%**	1.5%	3.6%
21	Household Hazardous Waste	**0.1%**	0.0%	0.1%	**0.0%**	0.0%	0.0%	**0.0%**	0.0%	0.1%
22	Electronics	**0.5%**	0.1%	0.9%	**1.1%**	-0.8%	3.0%	**0.8%**	-0.1%	1.8%
23	Household Batteries	**0.0%**	0.0%	0.1%	**0.0%**	0.0%	0.1%	**0.0%**	0.0%	0.1%
24	Wood Waste	**1.2%**	0.2%	2.1%	**0.9%**	0.2%	1.7%	**1.0%**	0.5%	1.6%
25	C&D Debris	**0.7%**	-0.1%	1.4%	**1.9%**	0.5%	3.2%	**1.3%**	0.5%	2.0%
26	Tires and Rubber	**0.0%**	0.0%	0.0%	**0.5%**	-0.1%	1.1%	**0.2%**	-0.1%	0.5%
27	Yard Waste	**4.8%**	1.1%	8.6%	**5.2%**	2.0%	8.4%	**5.0%**	2.7%	7.3%
28	Food Waste	**22.5%**	17.2%	27.9%	**21.4%**	16.2%	26.7%	**22.0%**	18.5%	25.5%
29	All Other Garbage	**3.0%**	2.1%	3.9%	**2.4%**	1.3%	3.5%	**2.7%**	2.0%	3.4%
30	Liquids	**1.8%**	1.4%	2.3%	**0.7%**	0.2%	1.3%	**1.3%**	0.9%	1.6%
31	Grit	**0.6%**	0.2%	1.1%	**0.3%**	0.0%	0.5%	**0.5%**	0.2%	0.7%
	TOTALS	**100.0%**			**100.0%**			**100.0%**		

3.6 Bulk Waste and C&D Debris Visual Audit

In FY 2010, bulk/C&D waste comprised only 2.5 percent of the total material received at the City's Transfer Station. C&D debris is not included in the City's exclusive collection franchise and, therefore, does not need to be delivered to the Transfer Station. Because other facilities offer lower tipping fees, most C&D debris is delivered elsewhere. However, to obtain a more complete understanding of the waste stream managed by the City at its Transfer Station, KCI conducted visual audits of 14 of the 30 loads (47 percent) of bulk/C&D delivered to the facility during the five-day April WCS event.

Table 3.6 summarizes the results of the visual audits, and Appendix F contains the individual load results. As can be seen by the confidence intervals in Table 3.6, and as expected, significant variability exists in the types of materials found in bulk/C&D.

Using industry data for the average density of these various material categories, the percentage by volume of each material category was converted to percentage by weight. The largest components of this stream, both by volume and by weight, are dimensional lumber (wood) and furniture.

3.7 Composition of All Incoming Waste

As mentioned previously, significant variability was found in the composition of bulk/C&D delivered to the Transfer Station, and a relatively small number of visual audits were conducted as part of this study. However, to estimate the overall composition of waste delivered to the City's Transfer Station, the results of the sorting events and visual audits were applied to the tonnage of materials received at the facility during FY 2010 and combined along with recycling tonnage. Table 3.7 provides the estimated composition of all incoming materials received at the Transfer Station. This includes all solid waste from residents and businesses; bulk/C&D; and source-separated yard waste, tires, and recyclables.

Table 3.6: Composition of Bulk/C&D Delivered to Transfer Station, Based on Visual Audits

Material Category	Weighted Average (% by volume)	90% Confidence Interval		Volume (cy)	Density (lbs/cy)	Estimated Weight (lbs)	Weighted Average (% by weight)
		Lower Bounds	Upper Bounds				
Corrugated Cardboard, Kraft Paper	**1.4%**	-1.8%	4.6%	1.5	53	**79**	**0.5%**
Other Ferrous	**1.0%**	0.5%	1.5%	1.1	225	**241**	**1.7%**
Other Metal	**2.3%**	1.7%	2.9%	2.6	225	**576**	**4.0%**
Other Plastic	**4.0%**	2.9%	5.1%	4.4	50	**220**	**1.5%**
Carpet padding	**0.9%**	0.4%	1.4%	1.0	62	**63**	**0.4%**
Prunings & Trimmings	**1.7%**	0.9%	2.5%	1.8	127	**232**	**1.6%**
Leaves & Grass	**3.7%**	1.8%	5.7%	4.1	312	**1,269**	**8.8%**
Dimensional Lumber/Pallets	**39.9%**	26.2%	53.5%	43.7	169	**7,382**	**51.1%**
Engineered & Other Recyclable Wood	**1.1%**	0.6%	1.6%	1.2	268	**313**	**2.2%**
Painted/Stained Wood	**1.3%**	0.7%	2.0%	1.4	169	**241**	**1.7%**
E-waste	**0.3%**	-0.2%	0.7%	0.3	405	**112**	**0.8%**
Furniture	**42.5%**	30.0%	54.9%	46.5	80	**3,721**	**25.7%**
Tires	**0.0%**	0.0%	0.0%	0.0	200	**0**	**0.0%**
Mixed MSW	**0.0%**	-0.1%	0.1%	0.0	250	**9**	**0.1%**
TOTAL	**100.0%**	**-**	**-**	**109.5**	**-**	**14,458**	**100.0%**

Table 3.7: Estimated Composition of All Incoming Materials Received at Transfer Station

	Material Category	Municipal Solid Waste Composition (% by weight)	Municipal Solid Waste Applied to FY 2010 Tonnage (tons)	Bulk/C&D Composition (% by weight)	Bulk/C&D Applied to FY 2010 Tonnage (tons)	Source Separated Materials (tons)	Total Incoming Materials (tons)	Composition of Incoming Materials (% by weight)	Recycling Rate
1	Newspaper	**2.4%**	1,039.1			3,272.64	16,161.3	**33.1%**	20.2%
2	Corrugated Containers	**6.3%**	2,678.3	**0.5%**	6.1				
3	Office Paper	**2.1%**	904.6						
4	Other Recyclable Paper	**5.7%**	2,453.1						
6	Aseptic Containers	**0.5%**	200.0						
7	PET Containers	**2.1%**	905.1						
8	HDPE Containers	**1.1%**	462.8						
13	Tin/Steel Cans	**0.9%**	404.1						
16	Aluminum Cans	**0.9%**	365.0						
18	Glass Containers	**8.1%**	3,470.5						
5	Other Non-Recyclable Paper	**9.8%**	4,197.7				4,197.7	**8.6%**	0.0%
9	Other Narrow-neck Plastic Containers	**0.4%**	184.9				184.9	**0.4%**	0.0%
10	Non-Rigid Plastic Film	**7.8%**	3,311.9				3,311.9	**6.8%**	0.0%
11	Styrofoam	**1.2%**	507.5				507.5	**1.0%**	0.0%
12	All Other Plastics	**4.4%**	1,865.5	**1.5%**	18.3		1,883.8	**3.9%**	0.0%
14	White Goods	**0.0%**	3.8			139.39	1,072.3	**2.2%**	13.0%
15	Other Ferrous	**1.2%**	514.7	**1.7%**	20.7	195.09			
17	Other Non-Ferrous	**0.8%**	344.9	**4.0%**	48.8				
19	Other Glass	**0.4%**	150.5				150.5	**0.3%**	0.0%
20	Textiles	**3.5%**	1,507.5				1,507.5	**3.1%**	0.0%
21	Household Hazardous Waste	**0.0%**	9.3				9.3	**0.0%**	0.0%
22	Electronics	**1.0%**	436.4	**0.8%**	9.8		446.2	**0.9%**	0.0%
23	Household Batteries	**0.0%**	18.9				18.9	**0.0%**	0.0%
24	Wood Waste	**1.7%**	735.2	**54.9%**	669.8		1,405.0	**2.9%**	0.0%
25	C&D Debris	**1.7%**	736.0	**26.1%**	318.4		1,054.5	**2.2%**	0.0%
26	Tires and Rubber	**0.3%**	109.1			80.41	189.5	**0.4%**	0.0%
27	Yard Waste	**14.1%**	6,015.5	**10.4%**	126.9	1,433.19	7,575.6	**15.5%**	0.0%
28	Food Waste	**16.6%**	7,079.7				7,079.7	**14.5%**	0.0%
29	All Other Garbage	**3.3%**	1,410.1	**0.1%**	1.22		1,411.3	**2.9%**	0.0%
30	Liquids	**1.0%**	444.5				444.5	**0.9%**	0.0%
31	Grit	**0.5%**	202.3				202.3	**0.4%**	0.0%
	TOTALS	**100.0%**	**42,668.6**	**100.0%**	**1,220.0**	**5,120.72**	**48,814.2**	**100.0%**	**7.0%**

3.8 Self-Haul Recycling Survey

During the April sorting event, KCI staff took the opportunity to survey residents and businesses that self-haul recyclables to the City's Transfer Station. During the five-day sorting event, KCI staff interviewed 21 of 32 (66 percent) of incoming self-haul recycling loads. The goal of the survey was to understand who currently self-hauls, why they self-haul, and what materials are being delivered.

Complete survey responses are provided in Appendix G. Analysis of the survey results revealed the following:

- Self-hauling represents 50 percent of incoming recycling loads but only 9.5 percent of recyclables received by weight.
- 19 (90 percent) of the self-haulers were businesses and 2 (10 percent) were residents.
- Corrugated cardboard was the most commonly self-hauled material with 15 (71 percent) of the incoming loads being comprised of nearly 100 percent cardboard.
- Only 4 (19 percent) of the self-hauled recycling loads were comprised primarily of commingled containers, and 3 of these were comprised of nearly 100 percent glass bottles.
- The reasons given by residents for self-hauling were:
    - Lives in an apartment with no access to recycling.
    - Wants to be sure recyclables are actually being recovered.
- Of the businesses self-hauling recyclables to the transfer station:
    - 7 (37 percent) never requested a quote from WMI for recycling service.
    - 7 (37 percent) self-haul because it is free.
    - 3 (16 percent) self-haul because it is convenient.
    - 4 (21 percent) self-haul because they have always recycled this way.
    - 2 (11 percent) thought this was the only place to recycle.
    - 2 (11 percent) stated the quote received from WMI for service was too expensive.
    - 1 (5 percent) has recycling service, but generates an overflow of material.

The survey results provide useful information, especially as it relates to commercial recycling. Businesses that self-haul recyclables demonstrate a commitment to recycling, but their responses to the survey are also indicative of the commercial sector's perceptions of recycling and its availability. Lack of knowledge or understanding about the recycling program and commercial recycling fees that are too high are clearly barriers to commercial recycling within the City.

3.9 Waste Diversion Opportunities

Table 3.8 summarizes the materials in the citywide waste disposed at the Transfer Station, as well as in the waste from the three main generator sectors, that offer the greatest potential for recycling or composting. More than 70 percent of the waste currently disposed consists of recyclable or compostable materials. The challenge is to establish effective programs to capture and process these materials in lieu of disposing of them.

Recyclable paper and containers that are commonly included in recycling programs comprise nearly 31 percent of the waste disposed at the Transfer Station. Yard waste, which is segregated for mulching or composting in numerous communities throughout the State, makes up 14 percent of the waste disposed. Other types of organics (food waste and non-recyclable paper) contribute an additional 28 percent. Recovery of organics other than yard waste is not common in Florida, although programs for source separating organics prior to collection or separating them after collection through mixed waste processing are being done in a number of communities in the United States.

Table 3.8: Potentially Recyclable or Compostable Materials in Waste Disposed (% by weight)

Material Categories	Single-Family Residential	Multi-Family Residential	Commercial	Citywide
Newspaper	1.6%	5.1%	2.9%	2.4%
Corrugated Containers	4.3%	2.1%	7.8%	6.3%
Office Paper	1.9%	0.7%	2.3%	2.1%
Other Recyclable Paper	6.1%	10.8%	5.3%	5.7%
Aseptic Containers	0.6%	0.7%	0.4%	0.5%
TOTAL RECYCLABLE PAPER	**14.5%**	**19.5%**	**18.7%**	**17.1%**
PET Containers	1.9%	5.6%	2.1%	2.1%
HDPE Containers	1.0%	1.4%	1.1%	1.1%
Other Narrow-neck Plastic Containers	0.5%	0.6%	0.4%	0.4%
Tin/Steel Cans	1.0%	1.4%	0.9%	0.9%
Aluminum Cans	0.9%	0.9%	0.8%	0.9%
Glass Containers	6.3%	13.0%	9.3%	8.1%
TOTAL RECYCLABLE CONTAINERS	**11.6%**	**22.9%**	**14.6%**	**13.6%**
Yard Waste	27.4%	12.3%	5.0%	14.1%
Food Waste	9.0%	11.6%	22.0%	16.6%
Other Non-Recyclable Paper	7.7%	11.0%	11.2%	9.8%
TOTAL COMPOSTABLES	**44.1%**	**35.0%**	**38.2%**	**40.5%**
COMBINED TOTAL	**70.2%**	**77.4%**	**71.6%**	**71.2%**

This study provides the City with extensive information regarding the composition of waste disposed at its Transfer Station. The data will be utilized by KCI throughout the remainder of the project, both to identify near-term recommendations to enhance material recovery, as well as in the continuing development of longer-term waste diversion recommendations and a Solid Waste Master Plan.

Appendix A:
Material Category Descriptions

Table A-1: Material Category Descriptions

#	Material Categories	Description of Categories
1	**Newspaper**	Newspaper (loose, tied or shredded) including other paper normally distributed inside newspaper such as ads, flyers, etc.
2	**Corrugated Cardboard (OCC)**	Uncoated brown "cardboard" boxes with a wavy core (no plastic liners, waxy coatings).
3	**Office Paper**	Printed or unprinted paper typically generated in an office environment including white, colored, coated and uncoated papers, manila and pastel colored file folders.
4	**Other Recyclable Paper**	All magazines, catalogs, paperboard, chipboard, brown paper bags, telephone books and other printed material on glossy and non-glossy paper.
5	**Non-recyclable Paper**	All remaining paper not categorized in other paper categories, including waxed cardboard and contaminated paper (i.e. napkins, pizza boxes, paper towels, fast-food wrappers, etc.).
6	**Aseptic Containers**	Gable top milk cartons, juice boxes, and other similar containers.
7	**Polyethylene terephthalate (PET) Containers (SPI #1)**	Clear and colored bottles or containers coded PET #1 such as soda bottles, water bottles, etc.
8	**High-density polyethylene (HDPE) Containers (SPI #2)**	Clear/natural and pigmented bottles or containers coded HDPE #2 such as milk jugs, detergent bottles, etc.
9	**Other Recyclable Plastic Containers (SPI #3-7)**	Plastic containers coded #3 through #7, with the triangle label symbol.
10	**Non-rigid Plastic Film**	Grocery bags, garbage bags, plastic sheeting, clear plastic wrap, re-sealable plastic bags, etc.
11	**Expanded Polystyrene Foam (EPS) (Styrofoam®)**	Disposable coffee cups, coolers or packaging material, which are typically white and are made of expanded polystyrene beads. Also includes food service trays and egg cartons.
12	**All Other Plastics**	All remaining plastics not categorized with the triangle label symbol, including buckets, flower pots, laundry baskets, toys, large children's play equipment, plastic cups, plastic utensils, fast-food drink lids, straws, clamshell containers and plastic plates.
13	**Tin/Steel Cans**	Tin-plated steel cans, usually food containers, and aerosol cans.
14	**White Goods**	Household appliances, such as refrigerators, stoves, and salvageable items such as machinery.

Table A-1: Material Category Descriptions (continued)

#	Material Categories	Description of Categories
15	**Other Ferrous**	Steel, clothes hangers, sheet metal products, pipes, miscellaneous metal scraps, and other magnetic metal items.
16	**Aluminum Cans**	Aluminum soft drink, beer, and some food cans.
17	**Other Non-Ferrous**	Scrap aluminum, aluminum foil and catering trays, and other non-magnetic metal, copper wiring and tubing, brass fixtures.
18	**Glass Containers**	Clear, brown, and green glass bottles and containers.
19	**Other Glass**	Window panes, mirrors, ceramics, and drinking glasses.
20	**Textiles**	Clothing apparel, rags, leather, blankets, curtains, shoes, wallets, purses, belts, scrap leather.
21	**Special Wastes**	Items usually associated with household hazardous waste collection centers, such as cleaners, oil and oil filters, pool chemicals, fluorescent lights, medical waste, solvents etc.
22	**Electronics (E-waste)**	Electronic devices such as televisions, computers, cell phones, cordless telephones, PDAs, handheld devices, rechargeable batteries, etc.
23	**Household Batteries**	Household batteries including AA, AAA, C, D, 9-volt, and button types.
24	**Wood Waste**	Treated and untreated lumber, pallets and wood furniture including chairs, cabinets, dressers, etc.
25	**C&D Debris**	Construction and demolition debris that includes concrete, carpet, drywall, insulation, and roofing materials
26	**Tires and Rubber**	Small and large tires and other items made of rubber.
27	**Yard Waste**	Shrub and brush prunings, household bedding plants, weeds, leaves, grass clippings, and other landscaping and gardening wastes.
28	**Food Waste**	Meat and vegetable waste (includes coffee grinds and tea bags).
29	**All Other Garbage**	All other wastes not included in the above categories, including diapers, and products that are composite of materials such as frozen juice cans, binders, Pringle's can, chip bags, etc.
30	**Liquids**	All liquids within recyclable containers will be emptied into this category.
31	**Grit**	Indistinguishable items less than 1-inch square.

Appendix B:
Bulk Waste and C&D Debris
Material Category Descriptions

Table B-1: Bulk Waste and C&D Debris Material Category Descriptions

#	Material Categories	Description of Categories
1	OCC, Kraft Paper	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 include entire cardboard containers, such as shipping and moving boxes, computer packaging cartons, and sheets and pieces of boxes and cartons. This type does not include chipboard. And Paper Bags means bags and sheets made from Kraft paper. Examples include paper grocery bags, fast food bags, department store bags, empty Kraft cement bags (without plastic liners), and heavyweight sheets of Kraft packing paper.
2	Other Paper	Other Paper means any recyclable or non-recyclable paper material that is not corrugated cardboard or Kraft paper.
3	Major Appliances	Major Appliances means discarded major appliances of any color. These items are often enamel-coated. Examples include washing machines, clothes dryers, hot water heaters, stoves, refrigerators, furnaces and heating and cooling equipment. This subtype does not include electronics, such as televisions and stereos.
4	HVAC Ducting	HVAC Ducting means sheet metal tubing, typically galvanized, used for conveying ventilation air.
5	Other Ferrous	Other Ferrous means any iron or steel that is magnetic or any stainless steel item. This subtype does not include "tin/steel cans." Examples include structural steel beams, boilers, metal clothes hangers, metal pipes, stainless steel cookware, security bars, and scrap ferrous items and galvanized items such as nails and flashing.
6	Other Metal	Other Metal 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 include aluminum window frames, aluminum siding, copper wire, shell casings, brass pipe, and aluminum foil.
7	Film	Non-Bag Commercial and Industrial Packaging Film means film plastic used for large-scale packaging or transport packaging. Examples include shrink-wrap, mattress bags, furniture wrap, and film bubble wrap. And Film Products means plastic film used for purposes other than packaging. Examples include agricultural film (films used in various farming and growing applications, such as silage greenhouse films, mulch films, and wrap for hay bales), plastic sheeting used as drop cloths, and building wrap/Tyvek® packaging.

Table B-1: Bulk Waste and C&D Debris Material Category Descriptions (continued)

#	Material Categories	Description of Categories
8	Polystyrene Packaging/Insulation	Expanded Polystyrene Packaging and Insulation means items marked with a PS or#6. Examples include packaging peanuts, meat and vegetable packaging trays, and clamshell containers. This type also includes expanded polystyrene packaging blocks and insulation.
9	Other Plastic	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.
10	Carpet	Carpet means flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material. Does not include carpet padding.
11	Carpet padding	Carpet Padding means plastic, foam, felt, and other materials used under carpet to provide insulation and padding.
12	Branches and stumps	Branches and Stumps means woody plant material, branches, and stumps that exceed 4 inches in diameter from any public or private landscape.
13	Prunings and Trimmings	Prunings and trimmings means woody plant material up to 4 inches in diameter from any public or private landscape.
14	Leaves and Grass	Leaves and Grass means plant material, except woody material, from any public or private landscapes. Examples include leaves, grass clippings, sea weed, and plants. This subtype does not include woody material or material from agricultural sources.
15	Other organic	Other 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. Examples include leather items, cork, hemp rope, garden hoses, rubber items, hair, cigarette butts, diapers, feminine hygiene products, wood products (Popsicle sticks and toothpicks), wood chips, sawdust, and animal feces.
16	Large Concrete	Large Concrete means a hard material made from sand, gravel, aggregate, cement mix, and water. Large pieces are defined as being greater than one foot in its largest dimension. Examples include pieces of building foundations, concrete paving, and cinder blocks. This category includes concrete with a steel internal structure composed of reinforcing bars (re-bar) or metal mesh.
17	Small Concrete	Small Concrete means a hard material made from sand, gravel, aggregate, cement mix, and water. Small pieces are defined as being less than one foot in its largest dimension. Examples include pieces of building foundations, concrete paving, and cinder blocks.

Table B-1: Bulk Waste and C&D Debris Material Category Descriptions (continued)

#	Material Categories	Description of Categories
18	Large Asphalt Paving	Large Asphalt Paving means a black or brown, tar-like material mixed with aggregate used as a paving material. Large pieces are defined as being greater than one foot in its largest dimension.
19	Small Asphalt Paving	Small Asphalt Paving means a black or brown, tar-like material mixed with aggregate used as a paving material. Small pieces are defined as being less than one foot in its largest dimension.
20	Composite Roofing	Composition Roofing means composite shingles composed of fiberglass or organic felts saturated with asphalt and covered with inert aggregates as well as attached roofing tar and tar paper. Commonly known as three tab roofing. Examples include asphalt shingles and attached roofing tar and tar paper. Does not include built-up roofing.
21	Other Aggregates	Other Aggregates means aggregates other than concrete and asphalt paving such as bricks, masonry tile, ceramics, porcelain toilets, and clay roofing tiles.
22	Dim. Lumber/Pallets	Clean Dimensional Lumber means unpainted new or demolition dimensional lumber. Includes materials such as 2 x 4s, 2 x 6s, 2 x 12s, and other residual materials from framing and related construction activities. May contain nails or other trace contaminants. And Pallets and Crates means unpainted wood pallets, crates, and packaging made of lumber/engineered wood.
23	Eng. And Other Recyclable Wood	Clean Engineered Wood means unpainted new or demolition scrap from sheeted goods such as plywood, particleboard, wafer board, oriented strand board, and other residual materials used for sheathing and related construction uses. May contain nails, paint, or other trace contaminants.
24	Painted/Stained Wood	Painted/Stained Wood means wood that has had an external coating applied like handrails or finished furniture.
25	Gypsum Board	Clean Gypsum Board means unpainted gypsum wallboard or interior wall covering made of a sheet of gypsum sandwiched between paper layers. Examples: This type includes used or unused, broken or whole sheets. Gypsum board may also be called sheetrock, drywall, plasterboard, gypboard, gyproc, or wallboard.
26	Large Rock	Large Rock means large pieces of mineral matter or rock greater than 1 foot in its longest dimension. Examples include landscaping rock and paving stones.

Table B-1: Bulk Waste and C&D Debris Material Category Descriptions (continued)

#	Material Categories	Description of Categories
27	Small Rock/Gravel	Small Rock/Gravel means rock pieces less than 1 foot in its longest dimension. Examples include pathway gravel and other natural or mechanically crushed materials.
28	Dirt and Sand	Dirt and Sand means nutrient rich decayed organic matter mixed with very fine pieces of mineral matter, often left over from land clearing activities. This subtype also includes non-hazardous contaminated soil.
29	Other C&D	Other C&D 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 may also include demolition debris that is a mixture of materials such as non-porcelain sinks, synthetic counter tops, fiber or composite acoustic ceiling tiles, plate glass, wood, tiles, gypsum board, and aluminum scrap.
30	Glass	Glass means clear, brown, and green glass bottles and containers as well as window panes, mirrors, ceramics and drinking glasses.
31	E-waste	Electronic waste means devices such as televisions, computers, cell phones, cordless telephones, PDAs, handheld devices, rechargeable batteries, etc.
32	HHW	Household Hazardous Waste means cleaners, oil and oil filters, pool chemicals, fluorescent lights, medical waste, solvents, etc.
33	Furniture	Furniture means large hard to handle items that are not defined separately, including mattresses, and other large items. Examples include all sizes and types of furniture, mattresses, box springs, and base components.
34	Tires	Tires means truck and passenger car tires. (On and off Rim)
35	Mixed MSW	Mixed MSW means items that are associated with normal residential and business waste and not associated with bulky waste and C&D debris.

Appendix C: Individual Sample Results, Single-Family Residential

Table C-1: November 2010 Individual Sample Results, Single-Family Residential (% by weight)

	Hauler/Location	WM - RL Old Town	WM - RL Old Town	WM - RL Old Town	WM - RL Central	WM - RL Central	WM - RL Central
	Material Categories **sample #**	**2**	**5**	**6**	**11**	**14**	**15**
1	Newspaper	0.39%	1.18%	0.85%	0.43%	2.85%	1.63%
2	Corrugated Containers	2.79%	1.32%	8.39%	1.47%	0.64%	4.56%
3	Office Paper	3.79%	3.68%	2.20%	0.03%	1.09%	3.50%
4	Other Recyclable Paper	9.40%	2.59%	2.67%	3.65%	6.79%	7.99%
5	Other Non-Recyclable Paper	9.27%	3.61%	5.60%	4.31%	7.65%	6.43%
6	Aseptic Containers	0.30%	0.00%	0.24%	0.26%	0.00%	0.12%
7	PET Containers	3.20%	0.77%	1.26%	0.79%	4.18%	1.42%
8	HDPE Containers	1.47%	0.02%	0.30%	1.11%	0.57%	0.77%
9	Other Containers (#3-#7)	0.78%	0.81%	0.64%	0.41%	0.18%	0.13%
10	Non-Rigid Plastic Film	6.47%	2.20%	5.36%	3.93%	6.87%	4.62%
11	Styrofoam	1.21%	0.26%	0.28%	0.32%	1.60%	0.79%
12	All Other Plastics	4.29%	1.52%	2.26%	4.15%	2.48%	4.14%
13	Tin/Steel Cans	1.52%	0.36%	1.56%	2.69%	0.90%	1.22%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.80%	0.00%	0.38%	1.59%	2.69%	4.23%
16	Aluminum Cans	1.67%	0.38%	0.58%	0.25%	0.80%	0.98%
17	Other Non-Ferrous	0.71%	0.70%	0.21%	0.39%	0.95%	0.47%
18	Glass Containers	7.10%	6.35%	23.44%	6.61%	7.75%	10.59%
19	Other Glass	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20	Textiles	4.50%	1.22%	2.20%	9.65%	1.54%	2.41%
21	Special Wastes	0.09%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.00%	0.00%	0.00%	0.00%	2.01%
23	Household Batteries	0.52%	0.00%	0.00%	0.00%	0.00%	0.00%
24	Wood Waste	0.56%	6.43%	0.62%	3.34%	9.44%	4.01%
25	C&D Debris	0.37%	0.00%	2.07%	1.76%	0.00%	0.95%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	5.87%	0.16%
27	Yard Waste	21.80%	51.50%	0.51%	36.66%	14.04%	21.63%
28	Food Waste	10.78%	9.85%	31.94%	8.60%	7.63%	7.10%
29	All Other Garbage	4.16%	3.97%	5.70%	6.33%	10.96%	3.33%
30	Liquids	1.26%	0.00%	0.75%	0.32%	2.52%	0.64%
31	Grit	0.80%	1.30%	0.00%	0.96%	0.00%	4.16%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table C-1: November 2010 Individual Sample Results, Single-Family Residential (continued)

	Hauler/Location	WM - RL New Town	WM - RL New Town	WM - RL New Town	WM - RL New Town	WM - RL New Town	WM - RL Old Town
	Material Categories **sample #**	**18**	**19**	**21**	**22**	**23**	**28**
1	Newspaper	2.89%	3.23%	1.63%	2.90%	1.24%	0.30%
2	Corrugated Containers	3.25%	3.38%	7.65%	5.65%	0.78%	5.37%
3	Office Paper	2.05%	5.29%	0.56%	4.96%	1.60%	0.28%
4	Other Recyclable Paper	19.03%	9.25%	8.72%	9.89%	3.95%	2.65%
5	Other Non-Recyclable Paper	4.73%	11.16%	6.55%	8.17%	7.07%	7.30%
6	Aseptic Containers	0.52%	0.37%	0.14%	0.15%	0.29%	0.19%
7	PET Containers	1.88%	2.14%	1.06%	2.51%	1.55%	1.30%
8	HDPE Containers	1.15%	1.41%	2.01%	1.12%	0.82%	1.67%
9	Other Containers (#3-#7)	0.33%	0.80%	0.18%	0.17%	0.61%	0.35%
10	Non-Rigid Plastic Film	4.52%	4.96%	6.06%	4.92%	2.65%	3.22%
11	Styrofoam	1.86%	1.00%	0.79%	0.29%	0.71%	0.95%
12	All Other Plastics	5.19%	5.87%	3.44%	3.29%	2.38%	2.53%
13	Tin/Steel Cans	0.57%	1.02%	1.09%	1.67%	0.93%	0.46%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.21%	0.00%	0.00%	1.79%	0.34%	0.37%
16	Aluminum Cans	0.44%	0.71%	1.21%	0.88%	0.90%	0.83%
17	Other Non-Ferrous	1.03%	0.26%	0.36%	0.42%	0.10%	0.61%
18	Glass Containers	6.53%	3.57%	3.04%	8.63%	5.57%	5.12%
19	Other Glass	0.27%	0.00%	0.79%	0.00%	0.00%	0.94%
20	Textiles	3.52%	9.16%	8.72%	1.71%	1.61%	2.50%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	1.55%	1.26%	0.56%	0.29%	10.32%	1.04%
23	Household Batteries	0.00%	0.00%	0.00%	0.02%	0.02%	0.00%
24	Wood Waste	1.36%	1.08%	2.15%	4.22%	0.65%	2.75%
25	C&D Debris	5.02%	1.93%	0.00%	2.72%	1.26%	11.96%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.04%	0.00%	0.00%
27	Yard Waste	15.72%	14.45%	26.68%	17.92%	36.03%	35.56%
28	Food Waste	10.49%	12.52%	9.75%	7.01%	8.56%	7.32%
29	All Other Garbage	4.90%	5.18%	6.85%	6.53%	7.70%	4.42%
30	Liquids	0.29%	0.00%	0.00%	1.73%	1.77%	0.00%
31	Grit	0.73%	0.00%	0.00%	0.40%	0.59%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table C-1: November 2010 Individual Sample Results, Single-Family Residential (continued)

	Hauler/Location	WM - RL Old Town	WM - RL Central	WM - RL Central	
	Material Categories **sample #**	**31**	**35**	**39**	**Weighted Avg.**
1	Newspaper	3.04%	1.12%	1.70%	1.65%
2	Corrugated Containers	17.01%	4.86%	1.13%	4.46%
3	Office Paper	1.03%	1.86%	0.64%	2.13%
4	Other Recyclable Paper	8.14%	8.21%	7.85%	7.23%
5	Other Non-Recyclable Paper	7.81%	9.29%	11.61%	7.25%
6	Aseptic Containers	0.40%	0.58%	0.00%	0.24%
7	PET Containers	1.60%	0.72%	3.89%	1.83%
8	HDPE Containers	2.11%	1.22%	1.00%	1.10%
9	Other Containers (#3-#7)	0.14%	0.16%	1.06%	0.44%
10	Non-Rigid Plastic Film	7.99%	5.42%	6.02%	4.92%
11	Styrofoam	0.40%	1.59%	0.74%	0.84%
12	All Other Plastics	3.78%	2.82%	2.59%	3.35%
13	Tin/Steel Cans	1.91%	1.57%	1.86%	1.29%
14	White Goods	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	1.57%	0.83%	1.00%
16	Aluminum Cans	0.75%	0.46%	1.40%	0.80%
17	Other Non-Ferrous	0.86%	0.83%	0.59%	0.56%
18	Glass Containers	2.01%	4.36%	4.84%	7.11%
19	Other Glass	0.00%	7.01%	0.63%	0.66%
20	Textiles	2.65%	5.80%	5.55%	4.15%
21	Special Wastes	0.00%	0.00%	0.00%	0.01%
22	Electronics	1.57%	0.00%	5.21%	1.61%
23	Household Batteries	0.01%	0.01%	0.11%	0.04%
24	Wood Waste	1.06%	2.52%	0.13%	2.74%
25	C&D Debris	0.00%	7.20%	8.77%	2.99%
26	Tires and Rubber	0.05%	0.00%	0.00%	0.40%
27	Yard Waste	15.46%	11.77%	10.37%	22.58%
28	Food Waste	12.33%	7.68%	9.23%	10.66%
29	All Other Garbage	3.15%	10.78%	10.87%	6.32%
30	Liquids	1.23%	0.59%	1.39%	0.82%
31	Grit	3.51%	0.00%	0.00%	0.82%
	TOTALS	100.00%	100.00%	100.00%	100.00%

Table C-2: April 2011 Individual Sample Results, Single-Family Residential (% by weight)

	Hauler/Location	WM - RL Old Town	WM - RL Old Town	WM - RL Old Town	WM - RL Central	WM - RL Central	WM - RL Central
	Material Categories **sample #**	**3**	**6**	**7**	**10**	**12**	**13**
1	Newspaper	1.64%	1.25%	1.48%	0.88%	0.94%	4.23%
2	Corrugated Containers	1.89%	0.16%	3.67%	2.81%	0.67%	6.45%
3	Office Paper	0.00%	0.00%	0.88%	2.48%	2.87%	0.80%
4	Other Recyclable Paper	2.45%	15.78%	7.97%	5.63%	0.17%	8.06%
5	Other Non-Recyclable Paper	22.08%	1.29%	15.53%	7.48%	6.18%	7.96%
6	Aseptic Containers	0.00%	1.24%	0.21%	0.26%	6.59%	0.34%
7	PET Containers	2.75%	1.19%	1.30%	1.78%	1.78%	2.98%
8	HDPE Containers	0.45%	0.11%	1.04%	0.62%	0.86%	0.66%
9	Other Containers (#3-#7)	0.00%	0.62%	1.11%	0.38%	3.76%	0.41%
10	Non-Rigid Plastic Film	7.29%	4.47%	11.52%	2.89%	5.87%	8.97%
11	Styrofoam	0.31%	0.17%	0.48%	0.48%	0.63%	0.44%
12	All Other Plastics	4.07%	6.10%	2.24%	1.96%	1.19%	2.49%
13	Tin/Steel Cans	0.19%	0.72%	2.11%	0.49%	0.91%	0.39%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	1.89%	0.00%	1.10%	0.40%	0.09%
16	Aluminum Cans	1.10%	0.52%	0.85%	0.77%	0.40%	0.80%
17	Other Non-Ferrous	0.66%	0.15%	0.45%	0.20%	3.15%	0.05%
18	Glass Containers	3.04%	1.47%	12.52%	4.57%	3.67%	7.18%
19	Other Glass	1.17%	0.00%	0.30%	1.11%	0.41%	0.00%
20	Textiles	1.14%	5.98%	2.76%	10.20%	4.65%	3.19%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.14%	0.00%	2.13%	0.72%	0.86%
23	Household Batteries	0.56%	0.04%	0.15%	0.00%	0.00%	0.00%
24	Wood Waste	7.25%	2.47%	0.00%	2.85%	3.84%	0.00%
25	C&D Debris	0.00%	6.00%	7.99%	1.20%	0.00%	1.07%
26	Tires and Rubber	0.00%	2.31%	0.00%	0.00%	0.00%	0.00%
27	Yard Waste	33.63%	42.65%	15.36%	41.64%	42.21%	36.04%
28	Food Waste	7.66%	1.78%	9.56%	4.65%	3.07%	6.07%
29	All Other Garbage	0.25%	0.09%	0.24%	1.42%	2.68%	0.45%
30	Liquids	0.41%	1.41%	0.28%	0.00%	2.38%	0.00%
31	Grit	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table C-2: April 2011 Individual Sample Results, Single-Family Residential (continued)

	Hauler/Location	WM - RL Central	WM - RL Central	WM - RL New Town	WM - RL New Town	WM - RL New Town	WM - RL New Town
	Material Categories **sample #**	**15**	**17**	**20**	**21**	**22**	**24**
1	Newspaper	0.12%	1.09%	2.15%	1.27%	0.39%	3.56%
2	Corrugated Containers	0.88%	3.64%	2.64%	3.28%	1.28%	5.54%
3	Office Paper	0.26%	0.42%	1.38%	1.91%	2.59%	3.11%
4	Other Recyclable Paper	3.29%	4.38%	4.01%	3.83%	1.23%	2.86%
5	Other Non-Recyclable Paper	4.16%	12.87%	7.81%	9.28%	6.76%	7.47%
6	Aseptic Containers	1.14%	0.68%	0.32%	0.14%	0.15%	0.91%
7	PET Containers	3.79%	3.76%	1.06%	3.72%	1.79%	1.26%
8	HDPE Containers	0.38%	1.23%	0.72%	1.38%	1.22%	1.80%
9	Other Containers (#3-#7)	0.07%	0.59%	1.01%	0.12%	0.00%	0.00%
10	Non-Rigid Plastic Film	7.11%	10.49%	4.04%	9.42%	2.01%	10.49%
11	Styrofoam	1.93%	0.92%	0.41%	0.72%	0.28%	0.49%
12	All Other Plastics	0.85%	2.33%	6.99%	2.20%	3.36%	2.00%
13	Tin/Steel Cans	0.49%	0.00%	0.83%	0.78%	0.06%	0.79%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.96%	9.54%	0.09%	4.46%	4.86%	0.18%
16	Aluminum Cans	0.60%	4.33%	1.47%	1.54%	0.08%	1.10%
17	Other Non-Ferrous	0.24%	0.23%	0.19%	3.17%	0.07%	0.27%
18	Glass Containers	6.76%	5.70%	1.05%	2.89%	1.89%	6.57%
19	Other Glass	0.00%	0.00%	0.18%	0.00%	0.10%	0.32%
20	Textiles	2.02%	11.55%	0.63%	5.04%	12.11%	3.12%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	1.92%	0.76%	1.64%	0.00%	0.04%
23	Household Batteries	0.00%	0.00%	0.00%	0.20%	0.09%	0.00%
24	Wood Waste	1.59%	0.29%	1.05%	8.22%	10.53%	0.00%
25	C&D Debris	0.00%	0.00%	3.12%	0.66%	0.00%	0.49%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
27	Yard Waste	53.28%	9.30%	44.82%	24.84%	42.40%	30.58%
28	Food Waste	6.26%	6.28%	10.12%	8.38%	4.85%	14.62%
29	All Other Garbage	1.35%	7.82%	3.16%	0.93%	1.07%	2.45%
30	Liquids	1.61%	0.00%	0.00%	0.00%	0.84%	0.00%
31	Grit	0.88%	0.62%	0.00%	0.00%	0.00%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table C-2: April 2011 Individual Sample Results, Single-Family Residential (continued)

	Hauler/Location	WM - RL New Town	WM - RL Old Town	WM - RL Old Town	
	Material Categories sample #	**25**	**26**	**33**	**Weighted Avg.**
1	Newspaper	1.02%	2.75%	1.36%	1.62%
2	Corrugated Containers	4.27%	9.73%	13.49%	4.11%
3	Office Paper	3.21%	1.43%	3.09%	1.65%
4	Other Recyclable Paper	6.80%	4.53%	2.21%	4.88%
5	Other Non-Recyclable Paper	11.15%	3.01%	3.68%	8.29%
6	Aseptic Containers	0.22%	0.79%	0.12%	0.94%
7	PET Containers	1.58%	1.10%	1.08%	2.05%
8	HDPE Containers	1.38%	0.70%	0.42%	0.85%
9	Other Containers (#3-#7)	0.00%	0.21%	0.49%	0.62%
10	Non-Rigid Plastic Film	11.63%	7.49%	4.81%	7.18%
11	Styrofoam	1.48%	0.80%	0.12%	0.63%
12	All Other Plastics	2.00%	5.57%	2.57%	3.05%
13	Tin/Steel Cans	0.26%	0.55%	0.41%	0.59%
14	White Goods	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.26%	0.00%	1.45%	1.69%
16	Aluminum Cans	0.33%	0.51%	0.70%	1.00%
17	Other Non-Ferrous	0.26%	0.69%	0.19%	0.68%
18	Glass Containers	7.82%	6.85%	8.46%	5.33%
19	Other Glass	1.06%	0.00%	0.74%	0.36%
20	Textiles	11.87%	14.12%	1.56%	5.97%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.37%	5.47%	1.87%	1.08%
23	Household Batteries	0.41%	0.00%	0.07%	0.10%
24	Wood Waste	0.33%	0.00%	2.22%	2.69%
25	C&D Debris	1.12%	1.73%	2.60%	1.71%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.17%
27	Yard Waste	13.62%	22.26%	35.06%	32.68%
28	Food Waste	12.10%	8.92%	5.53%	7.20%
29	All Other Garbage	3.00%	0.80%	4.08%	2.03%
30	Liquids	0.73%	0.00%	1.63%	0.65%
31	Grit	1.72%	0.00%	0.00%	0.20%
	TOTALS	100.00%	100.00%	100.00%	100.00%

Appendix D: Individual Sample Results, Multi-Family Residential

Table D-1: November 2010 Individual Sample Results, Multi-Family Residential (% by weight)

	Hauler/Location	WM - Compactor West Isle Apts.	WM - FEL Special Route	WM - Compactor Shipyard Condos	WM - Compactor Galleon Condos	
	Material Categories sample #	**7**	**8**	**16**	**38**	**Weighted Avg.**
1	Newspaper	1.44%	6.85%	2.63%	3.22%	3.59%
2	Corrugated Containers	5.91%	15.38%	2.34%	6.26%	7.56%
3	Office Paper	1.70%	0.64%	0.34%	0.39%	0.76%
4	Other Recyclable Paper	8.04%	6.40%	8.29%	6.37%	7.27%
5	Other Non-Recyclable Paper	11.23%	8.45%	10.46%	11.10%	10.28%
6	Aseptic Containers	0.65%	0.09%	0.36%	2.33%	0.84%
7	PET Containers	4.51%	2.16%	3.54%	3.25%	3.35%
8	HDPE Containers	1.91%	1.63%	1.99%	1.32%	1.71%
9	Other Containers (#3-#7)	0.76%	0.49%	0.29%	0.39%	0.48%
10	Non-Rigid Plastic Film	6.96%	6.70%	7.03%	12.67%	8.30%
11	Styrofoam	1.91%	0.54%	1.49%	2.40%	1.57%
12	All Other Plastics	3.19%	2.87%	5.79%	3.33%	3.80%
13	Tin/Steel Cans	1.95%	2.44%	1.60%	1.72%	1.93%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	2.33%	0.00%	0.06%	0.62%
16	Aluminum Cans	1.84%	0.56%	1.86%	2.66%	1.71%
17	Other Non-Ferrous	3.25%	0.19%	0.31%	0.12%	0.95%
18	Glass Containers	8.44%	6.67%	10.74%	13.81%	9.87%
19	Other Glass	0.00%	0.00%	0.59%	0.00%	0.15%
20	Textiles	7.37%	2.08%	1.00%	1.26%	2.90%
21	Special Wastes	0.24%	0.23%	0.00%	0.00%	0.12%
22	Electronics	0.00%	0.00%	0.20%	0.10%	0.08%
23	Household Batteries	0.00%	0.00%	0.00%	0.00%	0.00%
24	Wood Waste	0.00%	15.98%	0.00%	0.69%	4.33%
25	C&D Debris	0.18%	0.00%	5.74%	4.58%	2.60%
26	Tires and Rubber	0.00%	1.46%	0.00%	0.00%	0.38%
27	Yard Waste	3.35%	0.00%	12.44%	0.70%	4.12%
28	Food Waste	20.07%	13.82%	11.55%	12.33%	14.41%
29	All Other Garbage	2.73%	1.33%	6.64%	8.06%	4.65%
30	Liquids	2.37%	0.69%	2.79%	0.88%	1.68%
31	Grit	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%

Table D-2: April 2011 Individual Sample Results, Multi-Family Residential (% by weight)

	Hauler/Location	WM - Compactor West Isle Apts.	WM - Compactor Shipyard Condos	WM – Compactor Harbor Place	WM – Compactor Key West Senior Citizens Plaza	
	Material Categories sample #	**8**	**14**	**23**	**32**	**Weighted Avg.**
1	Newspaper	0.60%	5.88%	0.51%	7.76%	5.44%
2	Corrugated Containers	5.25%	0.53%	6.41%	1.29%	1.08%
3	Office Paper	2.23%	0.48%	1.90%	3.15%	0.74%
4	Other Recyclable Paper	6.85%	12.58%	2.73%	4.60%	11.48%
5	Other Non-Recyclable Paper	13.49%	11.35%	5.19%	12.40%	11.16%
6	Aseptic Containers	1.41%	0.66%	0.20%	0.61%	0.66%
7	PET Containers	4.00%	6.64%	0.89%	3.22%	6.08%
8	HDPE Containers	1.64%	1.20%	1.27%	4.26%	1.35%
9	Other Containers (#3-#7)	0.43%	0.67%	0.12%	0.74%	0.64%
10	Non-Rigid Plastic Film	7.67%	9.40%	3.05%	16.66%	9.29%
11	Styrofoam	1.02%	1.10%	5.15%	1.18%	1.31%
12	All Other Plastics	4.52%	1.31%	1.91%	1.46%	1.49%
13	Tin/Steel Cans	2.48%	1.18%	0.25%	2.74%	1.25%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	1.41%	0.12%	0.29%	1.23%
16	Aluminum Cans	1.44%	0.76%	0.66%	1.19%	0.80%
17	Other Non-Ferrous	0.44%	0.54%	0.32%	0.00%	0.50%
18	Glass Containers	5.89%	15.06%	4.03%	2.38%	13.56%
19	Other Glass	0.74%	0.00%	3.57%	1.45%	0.28%
20	Textiles	2.67%	3.79%	0.00%	2.97%	3.51%
21	Special Wastes	0.00%	0.00%	0.00%	2.40%	0.10%
22	Electronics	0.67%	0.00%	0.00%	1.01%	0.07%
23	Household Batteries	0.00%	0.00%	0.06%	0.00%	0.00%
24	Wood Waste	0.00%	0.54%	7.59%	0.00%	0.87%
25	C&D Debris	0.00%	0.00%	25.97%	0.37%	1.37%
26	Tires and Rubber	0.22%	0.00%	0.00%	0.00%	0.01%
27	Yard Waste	17.00%	13.62%	18.70%	9.23%	13.86%
28	Food Waste	15.66%	10.99%	7.16%	14.21%	11.12%
29	All Other Garbage	3.41%	0.32%	2.25%	2.86%	0.66%
30	Liquids	0.27%	0.00%	0.00%	0.00%	0.01%
31	Grit	0.00%	0.00%	0.00%	1.55%	0.06%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%

Appendix E: Individual Sample Results, Commercial

Table E-1: November 2010 Individual Sample Results, Commercial (% by weight)

	Hauler/Location	WM - Compactor Jarro Café	WM - Compactor A&B Lobster House	WM - Compactor Southernmost Hotel	WM - Compactor Marriott Hotel	WM - Compactor La Concha Hotel	WM - FEL Old Town
	Material Categories **sample #**	**1**	**3**	**4**	**9**	**10**	**12**
1	Newspaper	0.46%	0.00%	2.55%	4.86%	9.45%	6.21%
2	Corrugated Containers	2.15%	3.24%	4.20%	11.40%	0.64%	2.64%
3	Office Paper	0.38%	1.71%	1.23%	0.35%	0.71%	6.11%
4	Other Recyclable Paper	1.73%	4.60%	7.44%	6.39%	8.33%	8.65%
5	Other Non-Recyclable Paper	9.05%	17.84%	13.82%	11.56%	11.90%	11.00%
6	Aseptic Containers	0.42%	0.22%	0.43%	0.30%	0.26%	0.00%
7	PET Containers	0.85%	1.16%	3.74%	4.57%	3.19%	2.86%
8	HDPE Containers	0.25%	1.49%	1.10%	0.37%	1.21%	2.21%
9	Other Containers (#3-#7)	0.38%	0.49%	0.00%	0.15%	0.67%	0.07%
10	Non-Rigid Plastic Film	11.17%	8.47%	11.05%	8.84%	7.52%	2.59%
11	Styrofoam	0.00%	1.26%	0.00%	0.70%	0.55%	4.57%
12	All Other Plastics	1.29%	6.17%	7.50%	5.03%	3.91%	4.84%
13	Tin/Steel Cans	0.00%	1.79%	0.61%	0.47%	0.81%	1.31%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	7.82%	1.43%	0.22%	0.00%	0.80%
16	Aluminum Cans	0.25%	1.91%	1.21%	0.74%	1.11%	0.93%
17	Other Non-Ferrous	0.54%	0.31%	0.26%	0.26%	0.73%	0.77%
18	Glass Containers	9.24%	11.79%	16.79%	7.93%	9.61%	15.82%
19	Other Glass	0.69%	0.00%	0.00%	0.00%	0.00%	2.23%
20	Textiles	0.10%	1.95%	1.67%	4.07%	20.53%	0.65%
21	Special Wastes	0.00%	0.00%	0.82%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.00%	0.00%	0.00%	0.00%	2.85%
23	Household Batteries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
24	Wood Waste	0.00%	0.22%	0.00%	0.00%	0.00%	0.11%
25	C&D Debris	0.00%	0.00%	0.00%	0.00%	4.15%	0.00%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
27	Yard Waste	0.00%	6.76%	0.56%	0.00%	0.00%	0.08%
28	Food Waste	60.84%	18.77%	19.15%	24.72%	9.90%	15.05%
29	All Other Garbage	0.21%	0.88%	2.27%	4.66%	1.21%	6.31%
30	Liquids	0.00%	0.45%	2.16%	1.61%	2.90%	1.33%
31	Grit	0.00%	0.69%	0.00%	0.79%	0.73%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-1: November 2010 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - RL Old Town	WM - FEL Old Town	WM - FEL Downtown	WM - FEL Old Town	WM - FEL Downtown	WM - Compactor Albertson's
	Material Categories **sample #**	**13**	**17**	**20**	**24**	**25**	**26**
1	Newspaper	4.01%	0.25%	4.25%	0.94%	3.06%	2.21%
2	Corrugated Containers	15.07%	6.71%	3.36%	10.97%	17.88%	11.02%
3	Office Paper	8.89%	0.23%	1.80%	0.34%	0.74%	2.04%
4	Other Recyclable Paper	9.13%	3.73%	7.16%	6.10%	20.99%	6.04%
5	Other Non-Recyclable Paper	12.86%	6.40%	8.11%	14.45%	10.23%	11.31%
6	Aseptic Containers	0.29%	0.12%	0.20%	0.36%	0.35%	2.04%
7	PET Containers	0.48%	0.81%	2.11%	2.11%	2.89%	1.44%
8	HDPE Containers	0.76%	2.36%	1.43%	0.83%	1.55%	1.48%
9	Other Containers (#3-#7)	0.00%	1.46%	0.05%	0.75%	0.15%	0.27%
10	Non-Rigid Plastic Film	5.48%	8.65%	6.29%	7.09%	9.75%	9.02%
11	Styrofoam	0.86%	0.25%	1.18%	1.05%	0.72%	6.12%
12	All Other Plastics	4.00%	2.61%	20.35%	2.37%	3.59%	4.06%
13	Tin/Steel Cans	1.25%	4.15%	1.32%	1.96%	0.26%	0.08%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.94%	0.00%	1.20%	0.49%	0.00%	0.25%
16	Aluminum Cans	0.44%	0.25%	0.30%	1.09%	0.50%	0.31%
17	Other Non-Ferrous	0.07%	0.13%	0.54%	0.62%	0.42%	0.00%
18	Glass Containers	1.32%	15.02%	5.73%	9.11%	11.67%	0.35%
19	Other Glass	0.00%	0.00%	0.77%	0.00%	0.00%	0.00%
20	Textiles	0.88%	0.00%	6.73%	5.68%	0.83%	0.00%
21	Special Wastes	0.00%	0.00%	0.00%	0.11%	0.09%	0.00%
22	Electronics	0.00%	0.17%	0.39%	1.00%	0.00%	0.71%
23	Household Batteries	0.00%	0.00%	0.39%	0.09%	0.00%	0.00%
24	Wood Waste	0.78%	0.00%	1.43%	4.33%	1.77%	0.35%
25	C&D Debris	8.41%	0.00%	0.30%	0.00%	0.79%	0.00%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%
27	Yard Waste	0.00%	0.12%	3.73%	6.27%	0.35%	4.10%
28	Food Waste	18.99%	41.61%	9.61%	16.05%	6.28%	33.11%
29	All Other Garbage	4.54%	3.29%	9.43%	3.69%	1.63%	0.08%
30	Liquids	0.56%	0.94%	1.07%	2.13%	3.32%	3.60%
31	Grit	0.00%	0.73%	0.75%	0.00%	0.00%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-1: November 2010 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - Compactor Hog's Breath Saloon	WM - RL Duval	WM - FEL Downtown	WM - RL Duval	WM - FEL Downtown	WM - Compactor Sloppy Joe's
	Material Categories **sample #**	**27**	**29**	**30**	**32**	**33**	**34**
1	Newspaper	2.85%	0.77%	7.15%	1.67%	10.23%	0.35%
2	Corrugated Containers	27.71%	3.08%	8.16%	4.17%	6.10%	4.14%
3	Office Paper	0.00%	9.60%	0.93%	0.33%	8.60%	0.60%
4	Other Recyclable Paper	4.66%	8.71%	3.19%	4.59%	8.32%	7.20%
5	Other Non-Recyclable Paper	7.41%	6.14%	1.24%	8.40%	17.87%	14.74%
6	Aseptic Containers	0.11%	0.15%	0.15%	0.27%	0.26%	0.00%
7	PET Containers	0.75%	1.50%	0.81%	1.60%	2.96%	0.38%
8	HDPE Containers	1.84%	1.67%	1.41%	1.03%	1.84%	1.33%
9	Other Containers (#3-#7)	0.00%	0.00%	0.25%	0.14%	0.23%	0.02%
10	Non-Rigid Plastic Film	7.01%	8.30%	5.53%	4.00%	10.80%	10.27%
11	Styrofoam	0.17%	0.42%	0.68%	0.36%	0.90%	0.56%
12	All Other Plastics	7.36%	4.34%	1.45%	1.31%	3.13%	8.23%
13	Tin/Steel Cans	1.02%	0.69%	0.61%	0.70%	0.60%	0.91%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	0.00%	0.06%	7.33%	0.00%	0.00%
16	Aluminum Cans	2.63%	0.77%	0.46%	0.44%	0.71%	0.30%
17	Other Non-Ferrous	0.00%	0.46%	0.26%	0.27%	0.18%	0.80%
18	Glass Containers	2.78%	22.13%	3.01%	5.71%	1.70%	20.81%
19	Other Glass	0.00%	0.81%	0.00%	0.11%	0.00%	0.00%
20	Textiles	0.00%	0.71%	0.56%	1.00%	1.35%	0.40%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.09%	0.00%
22	Electronics	0.00%	0.55%	4.41%	0.00%	1.09%	0.00%
23	Household Batteries	0.00%	0.00%	0.12%	0.01%	0.00%	0.01%
24	Wood Waste	0.13%	0.11%	0.00%	11.22%	0.00%	1.43%
25	C&D Debris	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
27	Yard Waste	0.07%	1.28%	5.46%	35.59%	1.04%	0.00%
28	Food Waste	27.09%	23.96%	46.39%	5.85%	15.13%	21.06%
29	All Other Garbage	0.61%	2.04%	4.30%	1.61%	2.11%	1.06%
30	Liquids	1.73%	1.79%	3.43%	2.29%	4.76%	0.85%
31	Grit	4.06%	0.00%	0.00%	0.00%	0.00%	4.56%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-1: November 2010 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - Compactor Mallory Sq.	WM - RL Duval	WM - FEL Downtown	
	Material Categories **sample #**	**36**	**37**	**40**	**Weighted Avg.**
1	Newspaper	0.51%	1.26%	4.15%	3.21%
2	Corrugated Containers	15.21%	0.74%	2.01%	7.72%
3	Office Paper	0.36%	1.07%	0.97%	2.19%
4	Other Recyclable Paper	9.11%	7.18%	3.94%	7.05%
5	Other Non-Recyclable Paper	10.31%	19.08%	6.98%	10.91%
6	Aseptic Containers	0.00%	0.00%	1.46%	0.34%
7	PET Containers	1.80%	1.48%	1.60%	1.85%
8	HDPE Containers	0.49%	0.38%	1.85%	1.28%
9	Other Containers (#3-#7)	0.07%	0.06%	0.23%	0.26%
10	Non-Rigid Plastic Film	11.00%	8.99%	6.35%	7.99%
11	Styrofoam	1.69%	0.67%	2.62%	1.16%
12	All Other Plastics	9.05%	4.14%	2.65%	5.18%
13	Tin/Steel Cans	0.10%	0.00%	0.98%	0.93%
14	White Goods	0.00%	0.63%	0.00%	0.03%
15	Other Ferrous	0.00%	0.00%	2.55%	1.12%
16	Aluminum Cans	0.98%	0.46%	2.62%	0.87%
17	Other Non-Ferrous	0.28%	0.53%	0.49%	0.38%
18	Glass Containers	12.21%	12.86%	2.08%	9.36%
19	Other Glass	0.00%	0.00%	3.09%	0.34%
20	Textiles	0.45%	1.91%	2.46%	2.52%
21	Special Wastes	0.00%	0.32%	0.00%	0.07%
22	Electronics	0.00%	0.00%	0.00%	0.53%
23	Household Batteries	0.00%	0.00%	0.01%	0.03%
24	Wood Waste	0.01%	0.43%	0.39%	1.16%
25	C&D Debris	0.00%	0.00%	0.70%	0.68%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.01%
27	Yard Waste	1.88%	0.00%	32.63%	4.84%
28	Food Waste	18.99%	35.55%	7.55%	22.55%
29	All Other Garbage	4.91%	1.48%	7.30%	3.01%
30	Liquids	0.58%	0.77%	1.59%	1.82%
31	Grit	0.00%	0.00%	0.75%	0.63%
	TOTALS	100.00%	100.00%	100.00%	100.00%

Table E-2: April 2011 Individual Sample Results, Commercial (% by weight)

	Hauler/Location	WM - Compactor Mallory Sq.	WM - Compactor	WM - Commercial FEL	WM - Compactor Southernmost Hotel	WM - Commercial FEL	WM - Compactor Pier House Hotel
	Material Categories **sample #**	**1**	**2**	**4**	**5**	**9**	**11**
1	Newspaper	4.84%	2.13%	1.60%	0.00%	2.98%	7.18%
2	Corrugated Containers	10.38%	6.92%	0.32%	2.14%	9.06%	0.96%
3	Office Paper	0.37%	1.10%	1.08%	0.00%	3.08%	15.54%
4	Other Recyclable Paper	2.66%	0.65%	11.94%	4.62%	4.58%	4.13%
5	Other Non-Recyclable Paper	7.90%	17.25%	14.84%	9.80%	10.63%	11.70%
6	Aseptic Containers	0.15%	0.16%	1.27%	1.90%	0.11%	0.52%
7	PET Containers	3.21%	2.22%	1.84%	2.84%	0.76%	3.04%
8	HDPE Containers	1.44%	0.12%	0.00%	2.40%	0.30%	0.58%
9	Other Containers (#3-#7)	0.07%	0.16%	5.62%	0.17%	0.52%	0.08%
10	Non-Rigid Plastic Film	6.12%	7.41%	5.92%	10.89%	9.03%	4.58%
11	Styrofoam	0.38%	0.00%	0.11%	3.65%	0.20%	1.01%
12	All Other Plastics	11.02%	3.10%	0.42%	4.28%	6.46%	7.28%
13	Tin/Steel Cans	0.77%	0.96%	0.31%	0.94%	1.73%	0.39%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.17%	0.00%	21.17%	3.00%	0.00%	0.20%
16	Aluminum Cans	0.78%	0.14%	0.78%	1.17%	0.73%	1.60%
17	Other Non-Ferrous	0.57%	1.27%	1.05%	3.14%	0.16%	0.00%
18	Glass Containers	6.36%	9.37%	5.68%	11.46%	15.93%	9.35%
19	Other Glass	0.00%	0.00%	0.37%	0.08%	0.00%	0.00%
20	Textiles	1.86%	1.38%	4.46%	1.49%	3.47%	1.29%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23	Household Batteries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
24	Wood Waste	2.67%	0.00%	0.51%	0.00%	0.00%	0.00%
25	C&D Debris	1.25%	0.00%	2.37%	0.00%	14.80%	4.17%
26	Tires and Rubber	0.00%	0.00%	6.87%	0.00%	0.00%	0.00%
27	Yard Waste	3.39%	20.54%	3.50%	0.05%	0.00%	3.87%
28	Food Waste	25.35%	24.84%	6.21%	23.66%	15.02%	22.15%
29	All Other Garbage	5.07%	0.26%	0.00%	11.16%	0.23%	0.13%
30	Liquids	3.23%	0.00%	0.00%	1.16%	0.21%	0.26%
31	Grit	0.00%	0.00%	1.78%	0.00%	0.00%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-2: April 2011 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - Compactor Casa Marina Hotel	WM - Commercial REL Duval Street	WM - Commercial FEL	WM - Compactor Albertson's	WM - Compactor Hogs Breath Saloon	WM - Compactor City Marina
	Material Categories **sample #**	**16**	**18**	**19**	**27**	**28**	**29**
1	Newspaper	10.61%	0.20%	5.37%	0.52%	2.83%	1.09%
2	Corrugated Containers	0.98%	4.00%	3.63%	18.48%	15.29%	2.26%
3	Office Paper	1.52%	7.84%	0.83%	1.83%	0.17%	4.05%
4	Other Recyclable Paper	7.89%	3.54%	3.26%	1.14%	0.70%	2.24%
5	Other Non-Recyclable Paper	15.77%	15.05%	8.25%	14.14%	13.97%	7.06%
6	Aseptic Containers	1.02%	0.40%	0.73%	0.17%	0.20%	0.37%
7	PET Containers	11.03%	3.77%	0.19%	1.17%	0.62%	4.83%
8	HDPE Containers	0.88%	0.37%	1.47%	1.14%	1.94%	4.07%
9	Other Containers (#3-#7)	0.30%	0.06%	0.15%	0.96%	0.06%	0.19%
10	Non-Rigid Plastic Film	8.84%	9.88%	7.26%	9.01%	9.55%	9.65%
11	Styrofoam	0.97%	0.62%	0.61%	0.45%	0.16%	0.03%
12	All Other Plastics	5.35%	2.99%	9.56%	5.90%	11.32%	4.41%
13	Tin/Steel Cans	2.09%	0.69%	1.34%	0.67%	0.09%	0.42%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.49%	0.32%	0.00%	0.00%	0.00%	0.00%
16	Aluminum Cans	0.90%	0.79%	0.79%	0.12%	0.85%	0.72%
17	Other Non-Ferrous	0.60%	0.00%	0.34%	0.62%	0.12%	0.02%
18	Glass Containers	7.59%	18.88%	4.40%	0.81%	5.00%	2.13%
19	Other Glass	0.60%	0.00%	1.01%	0.00%	0.10%	0.02%
20	Textiles	4.84%	4.06%	16.15%	0.21%	0.16%	9.64%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.00%	0.73%	0.00%	0.00%	24.01%
23	Household Batteries	0.00%	0.00%	0.00%	0.00%	0.00%	0.46%
24	Wood Waste	0.00%	0.36%	7.14%	1.95%	7.41%	0.55%
25	C&D Debris	0.00%	0.20%	3.12%	0.29%	0.00%	9.64%
26	Tires and Rubber	0.00%	0.00%	3.83%	0.00%	0.00%	0.00%
27	Yard Waste	3.25%	0.00%	4.60%	1.44%	0.63%	5.34%
28	Food Waste	12.52%	25.46%	8.58%	37.21%	26.89%	3.18%
29	All Other Garbage	1.95%	0.50%	6.66%	1.79%	1.93%	0.73%
30	Liquids	0.00%	0.00%	0.00%	0.00%	0.00%	2.59%
31	Grit	0.00%	0.00%	0.00%	0.00%	0.00%	0.29%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-2: April 2011 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - Commercial FEL Downtown	WM - Compactor Airport	WM - Compactor Sloppy Joe's	WM - Compactor Duval Square	WM - Compactor Galleon	WM - Compactor Bight Marina
	Material Categories **sample #**	**30**	**31**	**34**	**35**	**36**	**37**
1	Newspaper	0.37%	3.97%	0.00%	0.35%	0.66%	1.51%
2	Corrugated Containers	3.72%	13.07%	1.37%	9.99%	3.79%	2.90%
3	Office Paper	3.53%	3.49%	0.00%	0.14%	0.29%	0.19%
4	Other Recyclable Paper	3.36%	4.02%	4.17%	0.88%	1.33%	1.03%
5	Other Non-Recyclable Paper	8.70%	16.90%	22.94%	14.82%	5.79%	11.73%
6	Aseptic Containers	0.33%	0.30%	0.79%	0.00%	0.19%	0.25%
7	PET Containers	1.21%	4.30%	0.97%	0.29%	2.02%	2.39%
8	HDPE Containers	0.41%	0.66%	0.82%	0.85%	1.07%	1.17%
9	Other Containers (#3-#7)	0.18%	0.68%	0.00%	0.28%	0.19%	0.50%
10	Non-Rigid Plastic Film	11.58%	11.93%	18.43%	5.83%	6.74%	12.31%
11	Styrofoam	2.04%	1.04%	0.49%	0.52%	0.60%	2.00%
12	All Other Plastics	2.26%	4.61%	4.54%	5.04%	5.35%	6.53%
13	Tin/Steel Cans	1.01%	0.82%	0.54%	2.29%	0.37%	1.07%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.12%	0.00%	0.00%	0.10%	0.00%	0.00%
16	Aluminum Cans	0.23%	0.81%	1.07%	0.39%	1.70%	1.82%
17	Other Non-Ferrous	0.27%	3.13%	0.00%	0.00%	0.55%	0.39%
18	Glass Containers	4.80%	4.30%	30.56%	8.27%	16.89%	15.35%
19	Other Glass	0.65%	0.00%	0.24%	0.00%	0.00%	0.00%
20	Textiles	0.45%	5.20%	0.00%	0.00%	0.20%	1.15%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.19%	0.00%	0.00%	0.00%	0.00%	0.00%
23	Household Batteries	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%
24	Wood Waste	0.00%	0.00%	0.00%	0.00%	0.55%	0.25%
25	C&D Debris	2.04%	0.00%	0.00%	0.00%	0.22%	0.00%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.00%	0.45%
27	Yard Waste	21.11%	2.73%	0.00%	0.00%	33.85%	0.00%
28	Food Waste	21.11%	12.62%	12.34%	49.66%	13.55%	34.79%
29	All Other Garbage	9.31%	0.92%	0.73%	0.29%	2.49%	2.21%
30	Liquids	0.99%	4.45%	0.00%	0.00%	0.00%	0.00%
31	Grit	0.00%	0.00%	0.00%	0.00%	1.60%	0.00%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table E-2: April 2011 Individual Sample Results, Commercial (continued)

	Hauler/Location	WM - Compactor Westin	WM - Commercial FEL Downtown	WM - Compactor Duval Square	WM - Compactor Sears	
	Material Categories **sample #**	**38**	**39**	**40**	**41**	**Weighted Avg.**
1	Newspaper	9.82%	0.31%	2.24%	0.25%	2.59%
2	Corrugated Containers	19.53%	0.07%	3.55%	42.52%	7.86%
3	Office Paper	0.42%	0.34%	5.97%	2.52%	2.45%
4	Other Recyclable Paper	4.09%	4.54%	5.59%	5.06%	3.63%
5	Other Non-Recyclable Paper	12.48%	3.42%	7.23%	3.14%	11.57%
6	Aseptic Containers	0.31%	0.00%	0.49%	0.00%	0.44%
7	PET Containers	2.51%	1.49%	2.34%	0.00%	2.40%
8	HDPE Containers	0.84%	0.33%	1.24%	0.00%	1.00%
9	Other Containers (#3-#7)	0.00%	0.57%	0.00%	0.00%	0.47%
10	Non-Rigid Plastic Film	13.18%	2.48%	23.41%	11.96%	9.86%
11	Styrofoam	0.51%	0.19%	0.87%	23.58%	1.81%
12	All Other Plastics	6.36%	1.68%	1.34%	8.71%	5.34%
13	Tin/Steel Cans	1.13%	0.16%	2.00%	0.00%	0.92%
14	White Goods	0.00%	0.00%	0.00%	0.00%	0.00%
15	Other Ferrous	0.00%	0.23%	0.51%	0.00%	1.13%
16	Aluminum Cans	0.80%	0.63%	0.71%	0.00%	0.79%
17	Other Non-Ferrous	0.00%	21.39%	1.02%	0.19%	1.51%
18	Glass Containers	11.62%	0.46%	11.83%	0.00%	9.15%
19	Other Glass	0.00%	0.00%	0.00%	0.00%	0.14%
20	Textiles	2.21%	0.00%	0.39%	0.00%	2.52%
21	Special Wastes	0.00%	0.00%	0.00%	0.00%	0.00%
22	Electronics	0.00%	0.00%	0.52%	0.00%	1.11%
23	Household Batteries	0.00%	0.00%	0.00%	0.12%	0.03%
24	Wood Waste	0.00%	0.00%	0.00%	0.50%	0.95%
25	C&D Debris	0.00%	3.99%	0.00%	1.41%	1.86%
26	Tires and Rubber	0.00%	0.00%	0.00%	0.00%	0.46%
27	Yard Waste	0.00%	0.00%	5.76%	0.00%	5.17%
28	Food Waste	7.17%	56.53%	21.46%	0.00%	21.44%
29	All Other Garbage	1.74%	0.00%	1.53%	0.05%	2.39%
30	Liquids	3.60%	0.00%	0.00%	0.00%	0.75%
31	Grit	1.69%	1.19%	0.00%	0.00%	0.27%
	TOTALS	100.00%	100.00%	100.00%	100.00%	100.00%

Appendix F:
Bulk Waste and C&D Debris Visual Audits

Table F-1: Bulk Waste and C&D Debris Visual Audits (% by volume)

Sample Number:	2	3	4	5
Date:	4/4/2011	4/4/2011	4/4/2011	4/4/2011
Hauler:	Mattingly Construction	Housing Authority	Resident	Keys Construction
Type of Vehicle:	Pickup truck	Box truck	Pickup truck	Truck/trailer
Source:	C&D	HA	C&D	C&D
Time of Day:	8:30 AM	9:28 AM	10:30 AM	12:15 PM
Vehicle Capacity (cy):	1.575	9.1	0.48	2.314
Percent Full:	100%	40%	70%	65%
Estimated Cubic Yards:	1.6	3.6	0.3	1.5
Net Weight:	680	580	320	520
Truck Number:	na	na	na	na
OCC, Kraft Paper	0%	0%	0%	0%
Other Paper	0%	0%	0%	0%
Major Appliances	0%	0%	0%	0%
Other Ferrous	0%	0%	0%	0%
Other Metal	0%	0%	0%	0%
Other Plastic	0%	0%	0%	0%
Carpet padding	0%	0%	0%	0%
Branches and stumps	0%	0%	0%	0%
Prunings and Trimmings	0%	0%	0%	0%
Leaves and Grass	0%	0%	0%	0%
Dim. Lumber/Pallets	99%	0%	100%	100%
Eng. And Other Recyclable Wood	0%	0%	0%	0%
Painted/Stained Wood	0%	0%	0%	0%
Small Rock/Gravel	0%	0%	0%	0%
E-waste	0%	0%	0%	0%
Furniture	0%	100%	0%	0%
Tires	0%	0%	0%	0%
Mixed MSW	1%	0%	0%	0%
TOTAL	100%	100%	100%	100%

Table F-1: Bulk Waste and C&D Debris Visual Audits (continued)

Sample Number:	6	9	11	14
Date:	4/4/2011	4/5/2011	4/5/2011	4/5/2011
Hauler:	Business	WM	WM	Housing Authority
Type of Vehicle:	Van	Crane truck	Crane truck	Box truck
Source:	Commercial	City	City	City
Time of Day:	12:18 PM	9:36 AM	11:45 AM	1:20 PM
Vehicle Capacity (cy):	5.5	20	20	9.1
Percent Full:	100%	100%	90%	80%
Estimated Cubic Yards:	5.5	20.0	18.0	7.3
Net Weight:	880	3560	3720	2620
Truck Number:	na	673426	673426	na
OCC, Kraft Paper	0%	0%	0%	0%
Other Paper	0%	0%	0%	0%
Major Appliances	0%	0%	0%	0%
Other Ferrous	0%	6%	0%	0%
Other Metal	0%	4%	5%	0%
Other Plastic	0%	10%	0%	0%
Carpet padding	0%	0%	0%	0%
Branches and stumps	0%	0%	0%	0%
Prunings and Trimmings	0%	0%	0%	0%
Leaves and Grass	0%	0%	0%	0%
Dim. Lumber/Pallets	100%	32%	19%	100%
Eng. And Other Recyclable Wood	0%	0%	6%	0%
Painted/Stained Wood	0%	8%	0%	0%
Small Rock/Gravel	0%	0%	0%	0%
E-waste	0%	0%	0%	0%
Furniture	0%	40%	70%	0%
Tires	0%	0%	0%	0%
Mixed MSW	0%	0%	0%	0%
TOTAL	100%	100%	100%	100%

Table F-1: Bulk Waste and C&D Debris Visual Audits (continued)

Sample Number:	15	19	21	22
Date:	**4/5/2011**	**4/6/2011**	**4/6/2011**	**4/6/2011**
Hauler:	**Business**	**WM**	**WM**	**Business**
Type of Vehicle:	**Pickup truck**	**Crane truck**	**Crane truck**	**Van**
Source:	**C&D**	**City**	**City**	**C&D**
Time of Day:	**2:34 PM**	**11:30 AM**	**2:10 PM**	**2:00 PM**
Vehicle Capacity (cy):	**0.82**	**20**	**20**	**5.5**
Percent Full:	**100%**	**90%**	**90%**	**100%**
Estimated Cubic Yards:	**0.8**	**18.0**	**18.0**	**5.5**
Net Weight:	**400**	**3640**	**3380**	**300**
Truck Number:	**na**	**673426**	**673426**	**na**
OCC, Kraft Paper	0%	0%	5%	25%
Other Paper	0%	0%	0%	0%
Major Appliances	0%	0%	0%	0%
Other Ferrous	0%	0%	0%	0%
Other Metal	0%	5%	0%	0%
Other Plastic	0%	5%	10%	0%
Carpet padding	0%	0%	6%	0%
Branches and stumps	0%	0%	0%	0%
Prunings and Trimmings	0%	10%	0%	0%
Leaves and Grass	0%	0%	24%	0%
Dim. Lumber/Pallets	100%	20%	15%	75%
Eng. And Other Recyclable Wood	0%	0%	0%	0%
Painted/Stained Wood	0%	0%	0%	0%
Small Rock/Gravel	0%	0%	0%	0%
E-waste	0%	0%	0%	0%
Furniture	0%	60%	40%	0%
Tires	0%	0%	0%	0%
Mixed MSW	0%	0%	0%	0%
TOTAL	100%	100%	100%	100%

Table F-1: Bulk Waste and C&D Debris Visual Audits (continued)

Sample Number:	24	27
Date:	4/6/2011	4/7/2011
Hauler:	Housing Authority	Individual
Type of Vehicle:	Box truck	Pickup truck
Source:	City	Bulky
Time of Day:	2:45 PM	8:30 AM
Vehicle Capacity (cy):	9.1	2.1
Percent Full:	80%	100%
Estimated Cubic Yards:	7.3	2.1
Net Weight:	1100	140
Truck Number:	na	na
OCC, Kraft Paper	5%	0%
Other Paper	0%	0%
Major Appliances	0%	0%
Other Ferrous	0%	0%
Other Metal	0%	0%
Other Plastic	0%	0%
Carpet padding	0%	0%
Branches and stumps	0%	0%
Prunings and Trimmings	0%	0%
Leaves and Grass	0%	0%
Dim. Lumber/Pallets	0%	0%
Eng. And Other Recyclable Wood	0%	0%
Painted/Stained Wood	0%	0%
Small Rock/Gravel	0%	0%
E-waste	5%	0%
Furniture	90%	100%
Tires	0%	0%
Mixed MSW	0%	0%
TOTAL	100%	100%

Appendix G:
Self-Haul Recycling Survey Results

Table G-1: Self-Haul Recycling Survey Results

Sample Number:	1	2	3
Date:	**4/4/2011**	**4/4/2011**	**4/5/2011**
Load Weight (lbs):	**360**	**160**	**100**
Vehicle Type:	**Pickup truck**	**Van**	**Box truck**
Residential or Commercial:	**Commercial**	**Commercial**	**Commercial**
Business Name:	**Small bar**	**Croissants De France**	**Stock Island Mission**
Avg. Number of Deliveries:	**2-3 times per month**	**every week**	**2 times per week**
Reason for Self-Haul:	Never got a quote, just always brought recyclables to TS.	Never got a quote, just always brought recyclables to TS.	Never got a quote, just store the OCC in the box truck until full or need truck for pick-ups or deliveries, then bring material to TS.
PAPER	**10%**	**100%**	**100%**
NEWSPAPER			
OCC	100%	100%	100%
OFFICE PAPER			
MIXED PAPER			
COMMINGLED	**90%**	**0%**	**0%**
PLASTICS			
PET			
HDPE			
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS	100%		
TOTAL	100%	100%	100%
Comments	(8) 30-gallon garbage cans full of glass	Van full of OCC	

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	**4**	**5**	**6**
Date:	**4/5/2011**	**4/5/2011**	**4/5/2011**
Load Weight (lbs):	**660**	**80**	**220**
Vehicle Type:	**Big moving truck**	**Mini-van**	**Pickup truck**
Residential or Commercial:	**Commercial**	**Commercial**	**Commercial**
Business Name:	**Sunset Moving**	**Niles Sales Service**	**Ft. Zack Retailer**
Avg. Number of Deliveries:	**2 times per week**	**2 times per week**	**every week or two**
Reason for Self-Haul:	Just workers, no idea why they self-haul. Don't believe they have ever gotten a quote.	Stated that this was the only place to recycle.	Stated that this was the only place to recycle.
PAPER	**95%**	**100%**	**100%**
NEWSPAPER			
OCC	70%	100%	100%
OFFICE PAPER			
MIXED PAPER	30%		
COMMINGLED	**0%**	**0%**	**0%**
PLASTICS			
PET			
HDPE			
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS			
TOTAL	100%	100%	100%
Comments	about 5% contamination, wood and plastic		

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	**7**	**8**	**9**
Date:	**4/5/2011**	**4/6/2011**	**4/6/2011**
Load Weight (lbs):	**160**	**40**	**180**
Vehicle Type:		**Pickup truck**	**Budget rental truck**
Residential or Commercial:	**Commercial**	**Residential**	**Commercial**
Business Name:	**Love in Bloom Florist**	**na**	**Keys Business Solutions**
Avg. Number of Deliveries:	**1 time per week**	**1 time per month**	
Reason for Self-Haul:	Landlord tried to get service; he was not sure why they didn't.	He is not sure why he doesn't use his curbside bin. Likes to know it actually gets recycled. He owns his own blue cart.	Stated that the TS is close and convenient.
PAPER	**100%**	**10%**	**100%**
NEWSPAPER			
OCC	100%	50%	100%
OFFICE PAPER			
MIXED PAPER		50%	
COMMINGLED	**0%**	**90%**	**0%**
PLASTICS			
PET			
HDPE		mix of all types	
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS			
TOTAL	100%	100%	100%
Comments			

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	10	11	12
Date:	**4/6/2011**	**4/6/2011**	**4/6/2011**
Load Weight (lbs):	**620**	**2120**	**160**
Vehicle Type:	**Pickup truck**	**Flat bed truck**	**Van**
Residential or Commercial:	**Commercial**	**Commercial**	**Commercial**
Business Name:	**Don's Bar**	**Downtown restaurants and bars**	**Hammock Shop**
Avg. Number of Deliveries:	**1 time per day**	**weekly**	**weekly**
Reason for Self-Haul:	All glass, never got a quote, figured it was too much money.		Convenient, said WMI will pick up baled OCC for free, but he just brings it to TS.
PAPER	**0%**	**100%**	**100%**
NEWSPAPER			
OCC		100%	100%
OFFICE PAPER			
MIXED PAPER			
COMMINGLED	**100%**	**0%**	**0%**
PLASTICS			
PET			
HDPE			
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS	100		
TOTAL	100%	100%	100%
Comments	Husband and wife, came in Monday also.		

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	13	14	15
Date:	**4/6/2011**	**4/7/2011**	**4/7/2011**
Load Weight (lbs):	**20**	**200**	**200**
Vehicle Type:	**Car**	**Box truck**	**Van**
Residential or Commercial:	**Residential**	**Commercial**	**Commercial**
Business Name:	**na**	**Stock Island Mission**	**Bobalu's**
Avg. Number of Deliveries:	**monthly**	**2 times per week**	**every few weeks**
Reason for Self-Haul:	Lives in apartment and doesn't think he gets recycling there.	Never got a quote, just store the OCC in the box truck until full or need truck for pick-ups/deliveries, then bring material to TS.	Says he pays for an OCC dumpster, but still has too much OCC.
PAPER	**50%**	**100%**	**100%**
NEWSPAPER			
OCC	50%	100%	100%
OFFICE PAPER			
MIXED PAPER	50		
COMMINGLED	**50%**	**0%**	**0%**
PLASTICS			
PET			
HDPE	mix of all types		
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS			
TOTAL	100%	100%	100%
Comments			

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	16	17	18
Date:	**4/7/2011**	**4/7/2011**	**4/7/2011**
Load Weight (lbs):	**200**	**300**	**680**
Vehicle Type:	**Truck**	**Pickup truck**	**Pickup truck**
Residential or Commercial:	**Commercial**	**Commercial**	**Commercial**
Business Name:	**Duncan Ford**	**Hog's Breath Saloon**	**Don's Bar**
Avg. Number of Deliveries:	**weekly**	**1-2 times per month**	**1 time per day**
Reason for Self-Haul:	Said WMI wants to charge and this is a free alternative.	Worker didn't know why, just always done it this way.	All glass, never got a quote, figured it was too much money.
PAPER	**100%**	**100%**	**40%**
NEWSPAPER			
OCC	100%	100%	100%
OFFICE PAPER			
MIXED PAPER			
COMMINGLED	**0%**	**0%**	**60%**
PLASTICS			
PET			
HDPE			
OTHER PLASTIC			
ALUMINUM			10%
STEEL/TIN			
GLASS			90%
TOTAL	100%	100%	100%
Comments			

Table G-1: Self-Haul Recycling Survey Results (continued)

Sample Number:	19	20	21
Date:	**4/7/2011**	**4/8/2011**	**4/8/2011**
Load Weight (lbs):	**620**	**160**	**320**
Vehicle Type:	**Truck**	**Pickup truck**	**Truck**
Residential or Commercial:	**Commercial**	**Commercial**	**Commercial**
Business Name:	**Key's Construction**	**Audio Video in Paradise**	**State Park**
Avg. Number of Deliveries:	**when needed**	**once per month**	**na**
Reason for Self-Haul:	Only come in when needed, building a house and all appliances/cabinets came in OCC.	Tries to reuse as many boxes as possible, donating some. Says she was quoted $100 per month for OCC dumpster, this is free.	Says he pays $500 a month for once a week garbage, if he had to pay more to recycle he would just throw it all in the garbage dumpster. This is free.
PAPER	**90%**	**100%**	**0%**
NEWSPAPER			
OCC	100%	100%	
OFFICE PAPER			
MIXED PAPER			
COMMINGLED	**0%**	**0%**	**100%**
PLASTICS			
PET			
HDPE			mix of all types
OTHER PLASTIC			
ALUMINUM			
STEEL/TIN			
GLASS			
TOTAL	100%	100%	100%
Comments	10% contamination of wood and plastic.	Willing to talk, Kelly Friend, 305-296-9099.	(6) 30 gallon cans.