Report

Waste Composition Study

Project I.D.: 14R002

Prepared for
Ramsey/Washington County
Resource Recovery Project Board

September 2014

RAMSEY/WASHINGTON COUNTY
RESOURCE RECOVERY PROJECT
RAMSEY AND WASHINGTON COUNTIES, MINNESOTA

MSW CONSULTANTS

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September 3, 2014

Zack Hansen
Judy Hunter
Ramsey Washington County Resource Recovery Project
2785 White Bear Ave N
Maplewood, MN 55109

Dear Zack and Judy:

RE: Waste Composition Study

This letter transmits the Final Report of the Waste Composition Study. The data and information in the report will be useful for the current planning process addressing State goals for recycling and organics recovery as well as for future waste processing.

We look forward to working with you and your team in this planning process.

Sincerely,

Foth Infrastructure & Environment, LLC

Warren Shuros
Client Director

Susan Young
Senior Consultant

Cc: John Culbertson, MSW Consultants

Waste Composition Study

Distribution

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2785 White Bear Avenue North
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In association with

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The Ramsey/Washington Counties Resource Recovery Project Board is evaluating future options for processing and disposal of waste generated in the Counties. To inform the planning efforts, current waste composition data specific to generator types is needed. The composition of residential wastes typically is different from commercial wastes. Different approaches for recycling may be considered.

This study sought to determine the composition of waste from the following generator sectors:

- Residential,
- Commercial (including multi-family apartments collected on commercial routes), and
- The percentage breakdown between residential and commercial waste tonnages.

Although the study did not seek statistically comprehensive samples from the multi-family sector, a small number of waste samples from a segregated load of multi-family wastes were also sorted to provide anecdotal information.

Detailed waste composition results for wastes from residential sources, commercial sources, and the aggregates are provided in the report. The tables below provide a summary of the "Top Ten" waste composition categories in residential and commercial wastes. The study determined that residential wastes make up approximately 45 percent of the total municipal solid wastes (MSW) with commercial wastes totaling to the remaining 55 percent.

Table ES-1
Top Ten Most Prevalent Materials in Residential Waste

Rank	Material	Percent
1	Food Waste	20.0%
2	Yard Waste	7.6%
3	Textiles & Leather	7.1%
4	Compostable Paper	6.3%
5	Film: Other	4.5%
6	C&D Material	4.3%
7	Carpet & Padding	3.5%
8	Diapers/Sanitary Napkins	3.0%
9	Bulky Material	2.6%
10	Non-Recyclable Plastic	2.5%
Cumulative		**61.4%**

Table ES-2
Top Ten Most Prevalent Materials in in Commercial Waste

Rank	Material	Percent
1	Food Waste	22.4%
2	Bulky Material	8.4%
3	Treated Wood/ Plywood	8.1%
4	Compostable Paper	6.3%
5	Non-Recyclable Plastic	5.4%
6	Cardboard/Kraft paper	5.3%
7	Clean Lumber/ Pallets/ Crates	5.2%
8	Film: Other	3.3%
9	C&D Material	2.4%
10	Other Organics	2.0%
Cumulative		**68.7%**

Food wastes were found in particularly high percentages. Residential waste had 20 percent food waste. This was fairly uniformly found in samples. Commercial waste had 22.4 percent Food Waste.

The "Top Ten" categories of waste still present in both residential and commercial waste are noticeably lacking the standard recyclables. Only Cardboard/Kraft Paper made the Top Ten in commercial waste. Recovering even higher percentages of the standard recyclables may not achieve the new state goal of 75 percent recovery. Several of the "Top Ten" categories will be difficult to recover (bulky material, treated wood/plywood, textiles and leather, non-recyclable plastics, film, etc.).

The percentage of the "standard" or "typical" recyclables such as Newspaper still remaining in both the residential and commercial waste streams is fairly low.

Future options for recycling/organics recovery will need to focus on the Food Wastes.

The low percentages of the standard recyclables and the higher fraction of food waste found in the Counties is consistent with the results from other waste composition studies in jurisdictions with mature, aggressive recycling and diversion programs (including those with effective volume-based pricing structures that give waste generators an incentive to reduce as well as recycle).

The data provided in this report will be used in planning for future recycling and waste processing options.

List of Abbreviations, Acronyms, and Symbols

Foth	Foth Infrastructure & Environment, LLC
HDPE	High-Density Polyethylene
HHW	Household Hazardous Waste
ICI	Industrial, Commercial and Institutional
MSW	Municipal Solid Waste
MSW Consultants	MidAtlantic Solid Waste Consultants
Newport	Newport Resource Recovery Facility
PET	Polyethylene Terephthalate
RRT	Resource Recovery Technologies

1 Introduction

1.1 Purpose

The Ramsey/Washington Counties Resource Recovery Project Board is evaluating future options for processing and disposal of waste generated in the Counties. To inform the planning efforts, current waste composition data specific to generator types is needed. The composition of residential wastes typically is different from commercial wastes. Different approaches for recycling may be considered. Existing data of statewide waste composition does not reflect the special conditions of Ramsey and Washington Counties, nor does it reflect differences in residential, commercial and multi-unit residential waste characteristics that may be important to the Counties as they develop alternatives to meet state mandates.

This study also provides information to evaluate the tonnage contributions of residential versus commercial wastes delivered directly or indirectly to the RRT Newport Resource Recovery Facility (Newport Facility). The waste generation data by generator type developed for this study served as the basis for a representative sampling plan.

1.2 Background

MidAtlantic Solid Waste Consultants (MSW Consultants) is a specialized consulting company that is nationally recognized for its expertise in designing and implementing waste and recycling characterization studies. Examples of recent work include a waste characterization study statistical analysis for the Minnesota Pollution Control Agency, a state-wide waste characterization study for the Iowa Department of Natural Resources, a statewide waste characterization study for CalRecycle and a residential capture rate and waste/recycling capture analysis for the City of Boston. MSW Consultants, working as a sub consultant to Foth Infrastructure & Environment, LLC (Foth), was responsible for the performance of a waste composition study to characterize the wastes generated in Ramsey and Washington counties and delivered to the Newport Facility. This report summarizes the methodology and results of the waste composition study.

This study sought to determine the composition of wastes from the following generator sectors:

- Residential,
- Commercial (including multi-family apartments collected on commercial routes), and
- The aggregate of residential and commercial, including wastes delivered in transfer trailers.

Although the study did not seek statistically comprehensive samples from the multi-family sector, a small number of waste samples from a segregated load of multi-family wastes were also sorted, and results to this non-statistical data are provided herein.

1.3 Report Organization

The remainder of this report presents the methodology and results of the waste composition study. The report is divided into the following sections:

- **Methodology:**
  This section provides an overview of available waste generation and disposal data, and provides the sampling plan that was developed to govern the study process and to provide statistically defensible data. This section also summarizes the field data collection methods and analytical methods applied in the study.

- **Results:**
  Detailed results about the composition of the disposed waste are presented in this section. Results are presented in both tabular and graphical format to highlight findings of interest. Results are presented in the aggregate and by generator sector.

- **Observations:**
  This section notes interesting results and specific observations made.

- **Appendices:**
  The appendices include a hauler survey form used to collect data associated with the breakdown of residential versus commercial wastes (Appendix A). Material sorting definitions are contained in Appendix B. Field data collection forms are provided in Appendix C.

2 Methodology

To accurately determine the sampling needs for the study, the relative contributing tonnages from commercial and residential generators was required. Often a random pattern of loads (every fifth truck, every one-hundredth ton, etc.) entering a facility is used to determine the waste that should be sampled. Operations of hauling companies, however, place biases on the results of waste sampled in this manner. Commercial wastes can be concentrated in early morning loads, residential wastes in later morning or afternoon loads, and restaurant wastes in Saturday loads. Commercial trucks carry significantly heavier loads than residential route trucks and the relative tonnage distribution of residential versus commercial waste is usually not represented by delivery schedules.

In the case of the Newport Facility, a large percentage of the tonnage is delivered by transfer trailer from merchant facilities, which may or may not reflect the generator split of directly delivered loads. The Counties, to meet state requirements, have specific recycling, composting and other diversion goals that must be met; understanding the relative contribution of wastes from specific sectors will better inform their decisions on wastes generators and types to target to cost-effectively meet those goals. Finally, after load data is obtained, the relative weight to give each sample to accurately aggregate the composition data requires knowledge of the relative tonnage contribution of the waste sectors.

Generally, it is the intent of any sampling plan to obtain samples of residential and commercial wastes in proportion to the amount generated by each sector. Further, the sampling plan should capture samples from the various haulers and truck types in which wastes are delivered; and from each day of the week on which significant waste collection occurs.

The Newport Facility receives direct haul wastes from multiple haulers. Based on facility scale house data, the type of collection vehicle, and on input from the haulers, Foth developed a detailed compilation of wastes originating in the residential sector and wastes originating in the commercial sector.

The Newport Facility also receives a significant fraction of wastes delivered in transfer trailers. Residential and commercial wastes are mixed together on these loads. Consequently, Foth communicated with the originating transfer stations and individually determined the breakdown of residential and commercial wastes received.

The overall quantity of residential and commercial wastes received at the Newport Facility is therefore the sum of direct-hauled wastes plus the individual breakdowns of residential and commercial wastes received at the originating transfer stations.

2.1 Waste Disposal by Generator Sector

Foth obtained the customer (hauler) names from RRT for the loads directly delivered to the Newport Facility and the names of companies that haul Ramsey and Washington County wastes to three transfer stations reported to receive MSW from the Counties (SKB Malcom, SKB Blaine and Advanced Disposal transfer stations). RRT also provided information on the residential/commercial splits at the Advanced Disposal transfer station.

A variety of methods was used to determine the residential and commercial splits for each facility, depending on the facility. At the Newport Facility, and at the Advanced Transfer Station, drivers were asked at the facility entrance if they had a predominantly residential or predominantly commercial load. This occurred for approximately a month prior to the waste composition study.

Web research and direct calls to companies identified the types of wastes that companies, especially roll-off or property management companies, haul to the four facilities. Foth staff also conducted in-person, phone and e-mail interviews of Transfer Station operators and waste hauling companies. An example of the data requested of individual haulers is found in Appendix A. Aspen, Walters, Gene's, SRC, ACE and Tennis were very helpful with responses.

The delivered tonnage to various facilities was apportioned using the hauler-specific residential or commercial information, by facility. For instance, if a hauling company reported ninety five (95) percent of their tonnage delivered to a Ramsey/Washington facility as residential, the ninety five percent was applied to their total tons, except for ACE. ACE reported separate residential/commercial splits for Ramsey County and for Washington County, and the percentages were applied accordingly. Roll off tons were considered commercial. Deliveries by residential customers (e.g. pick-ups, cars with trailers) were considered residential.

Tonnage splits for companies that did not respond to the data request were estimated based on knowledge of the company or through knowledge of the company's truck number identification system. The companies and their waste types were analyzed at each facility to which they delivered waste (i.e., at the Newport Facility or to one or more transfer stations delivering to the Newport Facility).

Tonnage data from the four facilities by customer was provided by RRT. January, 2014 through April, 2014 tonnage data was used to calculate residential and commercial percentages. Table 2-1 summarizes the residential and commercial waste splits by facility. The overall commercial waste percentage is 55 percent. The overall residential contribution is 45 percent. These percentages also served as the basis for aggregating the residential and commercial waste composition results into an aggregate waste composition for the combined Counties' disposed waste stream.

Table 2-1
Ramsey and Washington Counties MSW Source Percentages
Residential and Commercial
January – April 2014

Facility	Commercial Tons	Percent	Residential Tons	Percent	Total Tons	Percent of Origin
SKB Blaine Transfer Station	1,260	31%	2,784	69%	4,044	4%
Advanced Disposal Transfer Station	16,423	67%	8,809	33%	24,512	25%
SKB Malcolm Transfer Station	4,191	85%	725	15%	4,916	5%
Newport Direct Delivery	32,288	49%	33,605	51%	65,893	66%
Total	**54,162**	**55%**	**45,203**	**45%**	**99,365**	**100%**

2.2 Allocation of Samples

There were two primary factors to develop the sampling plan:

- **Sample Number**: The first consideration was to obtain a sufficient number of samples, within available budget, to provide a statistically defensible estimate of the waste composition. This study targeted 24 residential samples and 30 commercial samples. Both sampling targets were expected to provide defensible results; however, a higher sampling target was assigned to the commercial sector because prior studies have shown that there is higher variability in the composition of commercial samples. The incremental samples were therefore obtained to improve the confidence of commercial composition results.

- **Sample Distribution**: Because of the excellent availability of data from RRT, this study used a stratified sampling approach rather than a purely random sampling approach to obtain samples. The stratified sampling approach subdivided incoming wastes by hauler, and then captured samples in proportion to the tonnage delivered by hauler and generator sector. MSW Consultants prefers to use stratified sampling when data are available because it assures the best distribution of samples.

Tables 2-2 and 2-3 summarize the sampling targets and actual samples obtained during the study. As shown in the table, the sampling targets were achieved or exceeded with minimal variation which does not impact the representativeness of the results.

Foth was successfully able to identify one hauler able to deliver a segregated load of multi-family wastes. MSW Consultants obtained four samples from this load to develop a basic estimate of multi-family waste composition.

Table 2-2
Residential Sampling Targets

Hauler	% of Deliveries	Targeted Samples	Actual Samples
Allied Waste – Action	26.2%	5	6
Waste Management	16.4%	4	4
Tennis Sanitation	21.0%	4	5
Aspen	0.0%	0	0
Advanced Disposal (fka Veolia)	0.0%	1	0
Nitti Sanitation	4.8%	1	1
Highland Sanitation	6.2%	2	2
Walters Recycling & Refuse	0.0%	0	0
Advanced Disposal (fka Vasko)	4.7%	1	1
Maroney's Sanitation	10.1%	1	2
Troje's Trash	0.0%	1	0
Gene's Disposal	2.9%	1	1
Waste Management Burnsville	0.0%	0	0
* Other	7.6%	3	3
Total	**100.0%**	**24**	**25**

Table 2-3
Commercial Sampling Targets

Hauler	% of Deliveries	Targeted Samples	Actual Samples
Allied Waste - Action	27.5%	9	9
Waste Management	11.3%	5	4
Tennis Sanitation	2.6%	1	1
Aspen	20.3%	5	6
Advanced Disposal (fka Veolia)	0.0%	2	0
Nitti Sanitation	5.1%	2	2
Highland Sanitation	4.3%	0	1
Walters Recycling & Refuse	6.3%	2	2
Advanced Disposal (fka Vasko)	13.8%	1	3
Maroney's Sanitation	0.0%	0	0
Troje's Trash	2.1%	0	1
Gene's Disposal	0.0%	0	0
Waste Management Burnsville	2.6%	1	1
* Other	3.9%	2	1
Total	**100.0%**	**30**	**31**

2.3 Field Data Collection Schedule

Sample collection and sorting was performed at the Newport Facility. The study was performed from Monday, June 23 through Saturday, June 28, 2014. Due to an unexpected shortage of local light industrial temporary labor, the sort was extended through Monday, June 30. Other than slowing the rate of sample collection, MSW Consultants does not believe the delay impacted data integrity or accuracy.

2.4 Material Categories

A list of 50 material categories was developed to provide insight into the potentially recyclable, compostable, and otherwise divertible materials contained in the disposed waste stream. The material categories were developed in an iterative process starting with a draft list from staff and discussion with MSW Consultants based on their experience. Material categories included targeted recyclables, compostable organics, and other materials of interest to the counties. Appendix B contains the material categories and associated definitions used for this project.

2.5 Field Collection Methods

This section describes in detail the steps that were performed in the field to successfully acquire, sort, weigh, and discard manually sorted samples.

2.5.1 Taking Samples

Selected loads of waste designated for sorting were tipped in the designated area. From each selected load, one sample of waste was selected based on systematic “grabs” from the perimeter of the load.

For example, if the tipped pile is viewed from the top as a clock face with 12:00 being the load closest to the front of the truck, the first samples were taken from 3 o'clock, 6 o'clock, 9 o'clock, 12 o'clock, then from 1, 4, 7, and 10 o'clock, and so-on .

Figure 2-1
Example of a Grab Sample Staged for Manual Sorting

Once the area of the tipped load was selected, the Field Supervisor coordinated with a facility-provided loader operator to take a "grab" sample of wastes from that point in the tipped load. The loader operator removed a sample of waste that exceeded the targeted sample weight, and placed the grab sample in a secure area to await sorting. This is shown in Figure 2-1.

It should be noted that only one sample was taken from any single incoming truck; however, it was possible for the same truck to be sampled on subsequent days of the field data collection effort.

The exception to this rule is that four samples were obtained from the one segregated multi-family truck that was specially scheduled for this project. These four samples were obtained from different entry points from a load that weighed over 20,000 pounds.

Samples were deposited on a paved surface of the Newport Facility tipping floor in a designated area to receive samples. Each sample was labeled by its identifying number using a white board and photographed. The white board for sample identification stayed with the sample until sorting and weigh out was completed.

2.5.2 Manual Sorting

Once each sample was acquired, the material was manually sorted into the prescribed material categories. Plastic 20-gallon bins with sealed bottoms were used to contain the separated categories. A picture of the sorting table and bins is shown in Figure 2-2.

Figure 2-2
Sort Table and Bins

Sorters were asked to specialize in certain material groups, with one sorter handling the paper categories, another sorter the plastics, another sorter the glass and metals, and so on. In this way, sorters became knowledgeable in a short period of time as to the definitions of individual material categories.

The Crew Chief monitored the bins as each sample was sorted, rejecting materials that were improperly classified. Open bins allowed the Crew Chief to see the material at all times. The Crew Chief also verified the purity of each component during the weigh-out (discussed below).

The materials were sorted to particle size of 2-inches or less by hand, until no more than a small amount of homogeneous fine material ("mixed residue") remained. This layer of mixed 2-inch-minus material was allocated to the appropriate categories based on the best judgment of the Crew Chief - most often a combination of Other Paper (Non-Recyclable), Other Organics, or Food Waste.

2.5.3 Data Recording

MSW Consultants believes that the weigh-out and data recording process is the most critical process of the sort. The Crew Chief was singularly responsible for overseeing all weighing and data recording of each sample. Once each sample had been sorted, the weigh-out was performed. Each bin containing sorted materials from the just-completed samples was carried over to a digital scale. Sorting laborers assisted with carrying and weighing the bins of sorted material, and the Crew Chief recorded all data.

The Crew Chief used a waste composition data sheet to record the composition weights, as well as to record other observed or empirical information. Each data sheet containing the sorted weights of each sample was matched up against the Field Supervisor's sample sheet to assure accurate tracking of the samples each day.

MSW Consultants uses a customized database to manage the data from waste sorting. Entered data was subjected to quality control queries, and any anomalies were resolved against the hand-written information on the sample tally sheets or supervisor's sheet. Specific steps taken to ensure the integrity of data during entry and analysis included:

- Verifying that data forms were obtained for each day the data collection crew was in the field.
- Random checks of the computer-entered data against the paper form, to verify that all numbers were entered and to look for any systematic or random mistakes.
- Encoding the composition analysis formulae into a routine that can be applied consistently to different data sets. (This minimizes errors that could arise from mistyping formulae, etc.)

2.6 Statistical Methods

The following statistical measures were calculated to determine the overall composition of each waste generator sector.

Sample Mean: The sample mean, or average, composition is considered the "most likely" fraction for each material category in the waste stream. The sample mean is determined by

- Converting the weight of each constituent in each sample into a percentage
- Taking an average of the percentage composition of each individual constituent.

Note that the sample mean, while a good estimate, is unlikely to be identical to the population mean value. The meaningfulness of the sample mean is enhanced by the following statistical measures.

Confidence Intervals: When a sample of data is obtained, it is analyzed in an attempt to determine certain values that describe the entire population of data under analysis. For example, in a poll of likely voters, the intent of the poll is to determine the percentage of all voters who support a given candidate, not simply the percentage of voters in the poll who support that candidate. The percentage of voters who support a given candidate in the poll can easily vary from sample to sample; but the percentage of all voters who support that candidate is a fixed value. In our sample of incoming loads of waste, we are not primarily interested in the percentage composition of the sampled loads, but rather to determine what the composition of the sampled loads tells us about the composition of all waste generated. A confidence interval is a statistical concept that attempts to indicate the likely range within which the true value lies. The confidence intervals reflect the upper and lower range within which the population mean can be expected to fall. Confidence intervals require the following "inputs:"

- The "level of confidence," or how sure one wants to be that the interval being constructed will actually encompass the population mean;
- The sample mean, around which the confidence interval will be constructed;

- The sample standard deviation, which is used as a measure of the variability of the population from which the sample was obtained; and
- The number of sampling units that comprised the sample (a.k.a. sample size).

Consistent with industry standards, confidence intervals were calculated at a 90 percent level of confidence, meaning that we can be 90 percent sure that the mean falls within the upper and lower confidence intervals shown.[1] In general, as the number of samples increases, the width of the confidence intervals decreases, although the more variable the underlying waste stream composition, the less noticeable the improvement by adding incremental samples.

Due to the small sample size, no confidence intervals are provided for the four multi-family samples. Only the mean composition is reported.

[1] The converse is also true: that there is a 10 percent chance that the mean falls outside of the sample mean.

3 Results

3.1 Residential Waste Composition

Figure 3-1 presents the breakdown of Residential wastes by material groups. As shown in the chart, Organics were far and away the most prevalent category at just over 43 percent, followed by Paper at just over 18 percent.

Figure 3-1
Residential Waste Composition Summary

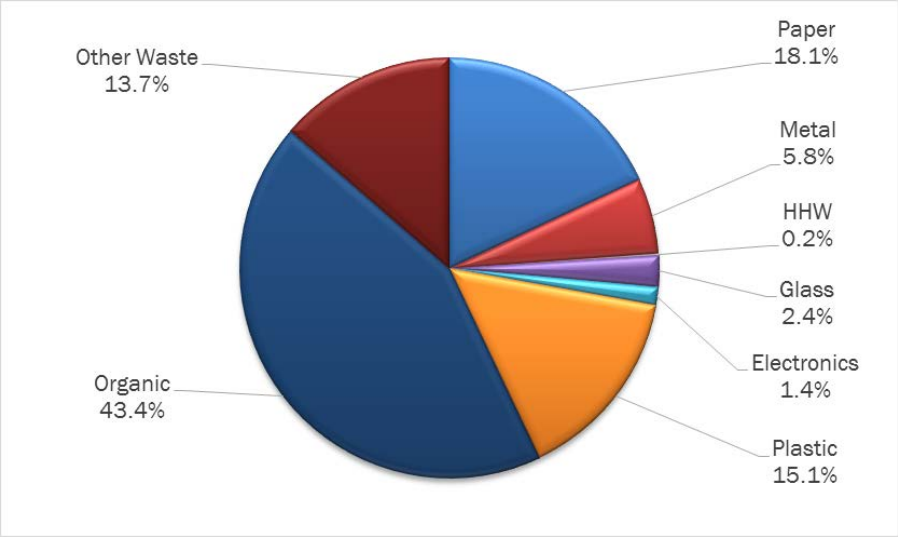

Table 3-1 shows the ten most prevalent material categories in the Residential waste stream. As shown, Food Waste contributes one fifth of the Residential waste stream. The ten most prevalent materials as a group make up over 61 percent of the Residential waste stream. Yard waste was second at 7.6%. There is seasonal variability for yard waste which would likely reduce the overall percentage.

Table 3-1
Top Ten Most Prevalent Materials in Residential Waste

Rank	Material	Percent
1	Food Waste	20.0%
2	Yard Waste	7.6%
3	Textiles & Leather	7.1%
4	Compostable Paper	6.3%
5	Film: Other	4.5%
6	C&D Material	4.3%
7	Carpet & Padding	3.5%
8	Diapers/Sanitary Napkins	3.0%
9	Bulky Material	2.6%
10	Non-Recyclable Plastic	2.5%
Cumulative		**61.4%**

Table 3-2 provides a detailed statistical profile of the Residential waste stream.

Table 3-2
Residential Waste Composition

Material	Percent	Int (+/-)
Paper	**18.1%**	**2.9%**
Newspaper	1.2%	0.5%
Office Paper	0.7%	0.5%
Magazines / Catalogs	1.2%	0.5%
Gable Top & Aseptic Containers	0.1%	0.0%
Cardboard / Kraft Paper	2.4%	0.6%
Boxboard / Paperboard	2.2%	0.5%
Mixed Recycle Paper	2.2%	0.6%
Compostable Paper	6.3%	1.0%
Non-Recyclable Paper	1.7%	0.6%
Plastic	**15.1%**	**1.9%**
#1 PET Bottles	0.7%	0.2%
Other Non Bottle #1 PET	0.2%	0.1%
#2 HDPE Bottles and Jars	0.4%	0.1%
#2 HDPE Non Bottles and Jars	0.2%	0.1%
#5 PP Containers	0.6%	0.2%
Other Plastic Bottles #3 - #7	0.1%	0.0%
#3 PVC Rigid Non-Bottle	0.1%	0.1%
Plastic Packaging Containers	1.0%	0.4%
Bulky Rigid	1.2%	0.6%
#6 Styrofoam	0.6%	0.1%
Recoverable Film & Film Bags	1.3%	0.4%
Film: Trash Bags	1.7%	0.5%
Film: Other	4.5%	0.9%
Non-Recyclable Plastic	2.5%	0.6%
Metal	**5.8%**	**1.8%**
Aluminum Cans	0.4%	0.1%
Non-Ferrous Metal	0.3%	0.1%
Steel Cans	0.7%	0.1%
Other Scrap Steel	1.9%	1.4%
Mixed Metal	2.4%	1.1%

Material	Percent	Int (+/-)
Glass	**2.4%**	**1.0%**
Food & Beverage Glass	1.9%	0.8%
Non-Recyclable Glass	0.5%	0.2%
Organic	**43.4%**	**3.3%**
Yard Waste	7.6%	2.5%
Food Waste	20.0%	2.8%
Liquid Food Waste	0.4%	0.2%
Textiles & Leather	7.1%	3.3%
Diapers & Sanitary Napkins	3.0%	1.0%
Clean Lumber/ Pallets/ Crates	1.5%	1.7%
Treated Wood/ Plywood	1.9%	0.8%
Other Organic Material	1.9%	0.7%
Electronics	**1.4%**	**0.8%**
Electronics	1.4%	0.8%
HHW	**0.2%**	**0.2%**
Batteries	0.0%	0.0%
Mercury-Containing Items	*Not Found*	
Paints & Solvents	0.0%	0.0%
Automotive Products	0.1%	0.2%
Other HHW	0.0%	0.0%
Other Waste	**13.7%**	**4.4%**
Bulky Material	2.6%	3.0%
Small Household Appliances	0.4%	0.4%
Carpet & Padding	3.5%	2.0%
C&D Material	4.3%	2.8%
Tires/ Rubber	0.6%	0.3%
Other Inorganic	2.3%	1.6%
Total	**100.0%**	
Total Samples	**25**	

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

3.2 Commercial Waste Composition

Figure 3-2 presents the breakdown of Commercial wastes by material group. The largest material group in the Commercial sector was found to be Organics at over 42 percent, followed by roughly equal fractions of Paper and Plastics.

Figure 3-2
Commercial Waste Composition Summary

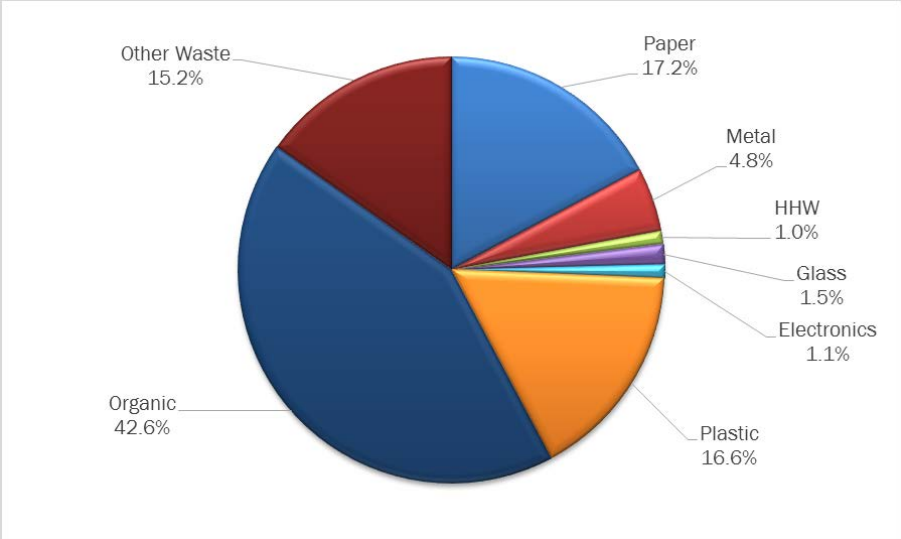

Table 3-3 shows the top 10 most prevalent material categories in the commercial stream. Food waste was found to be the single most prevalent category at 22.4 percent. The top 10 most prevalent materials make up almost 69 percent of the commercial waste stream.

Table 3-3
Top Ten Most Prevalent Materials in Commercial Waste

Rank	Material	Percent
1	Food Waste	22.4%
2	Bulky Material	8.4%
3	Treated Wood/ Plywood	8.1%
4	Compostable Paper	6.3%
5	Non-Recyclable Plastic	5.4%
6	Cardboard/Kraft paper	5.3%
7	Clean Lumber/ Pallets/ Crates	5.2%
8	Film: Other	3.3%
9	C&D Material	2.4%
10	Other Organics	2.0%
Cumulative		**68.7%**

Table 3-4 provides a detailed statistical profile of the Commercial waste stream.

Table 3-4
Detailed Commercial Waste Composition

Material	Percent	Conf Int (+/-)	Material	Percent	Conf Int (+/-)
Paper	**17.2%**	**3.9%**	**Glass**	**1.5%**	**0.7%**
Newspaper	1.2%	0.7%	Food & Beverage Glass	1.3%	0.6%
Office Paper	0.5%	0.4%	Non-Recyclable Glass	0.2%	0.1%
Magazines / Catalogs	0.8%	0.7%			
Gable Top & Aseptic Containers	0.2%	0.1%	**Organic**	**42.6%**	**5.6%**
Cardboard / Kraft Paper	5.3%	3.2%	Yard Waste	0.5%	0.6%
Boxboard / Paperboard	1.1%	0.3%	Food Waste	22.4%	6.9%
Mixed Recycle Paper	0.9%	0.4%	Liquid Food Waste	1.4%	0.7%
Compostable Paper	6.3%	1.7%	Textiles & Leather	1.9%	1.3%
Non-Recyclable Paper	0.9%	0.5%	Diapers & Sanitary Napkins	1.3%	0.5%
			Clean Lumber/ Pallets/ Crates	5.2%	2.8%
Plastic	**16.6%**	**3.3%**	Treated Wood/ Plywood	8.1%	4.0%
#1 PET Bottles	1.1%	0.6%	Other Organic Material	2.0%	2.2%
Other Non Bottle #1 PET	0.2%	0.1%			
#2 HDPE Bottles and Jars	0.4%	0.1%	**Electronics**	**1.1%**	**0.7%**
#2 HDPE Non Bottles and Jars	0.2%	0.2%	Electronics	1.1%	0.7%
#5 PP Containers	0.5%	0.2%			
Other Plastic Bottles #3 - #7	0.1%	0.1%	**HHW**	**1.0%**	**1.5%**
#3 PVC Rigid Non-Bottle	0.1%	0.1%	Batteries	0.0%	0.0%
Plastic Packaging Containers	0.6%	0.2%	Mercury-Containing Items	*Not Found*	
Bulky Rigid	1.5%	0.9%	Paints & Solvents	0.0%	0.0%
#6 Styrofoam	0.4%	0.2%	Automotive Products	*Not Found*	
Recoverable Film & Film Bags	1.1%	0.3%	Other HHW	0.9%	1.5%
Film: Trash Bags	1.6%	0.4%			
Film: Other	3.3%	1.1%	**Other**	**15.2%**	**5.0%**
Non-Recyclable Plastic	5.4%	3.2%	Bulky Material	8.4%	4.5%
			Small Household Appliances	0.1%	0.1%
Metal	**4.8%**	**2.6%**	Carpet & Padding	1.7%	2.0%
Aluminum Cans	0.5%	0.3%	C&D Material	2.4%	2.2%
Non-Ferrous Metal	0.3%	0.3%	Tires/ Rubber	1.1%	0.8%
Steel Cans	0.4%	0.2%	Other Inorganic	1.5%	1.5%
Other Scrap Steel	1.9%	1.4%			
Mixed Metal	1.7%	1.5%	**Total**	**100.0%**	
			Total Samples	**31**	

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

3.3 Multi-Family Waste Composition

Figure 3-3 presents the breakdown of multi-family wastes by material group. It is important to note that these results are based on only four samples and cannot be considered statistically

comprehensive. However, the results appear reasonable relative to the Residential waste stream and are presented here for comparative purposes.

Figure 3-3
Multi-Family Waste Composition Summary

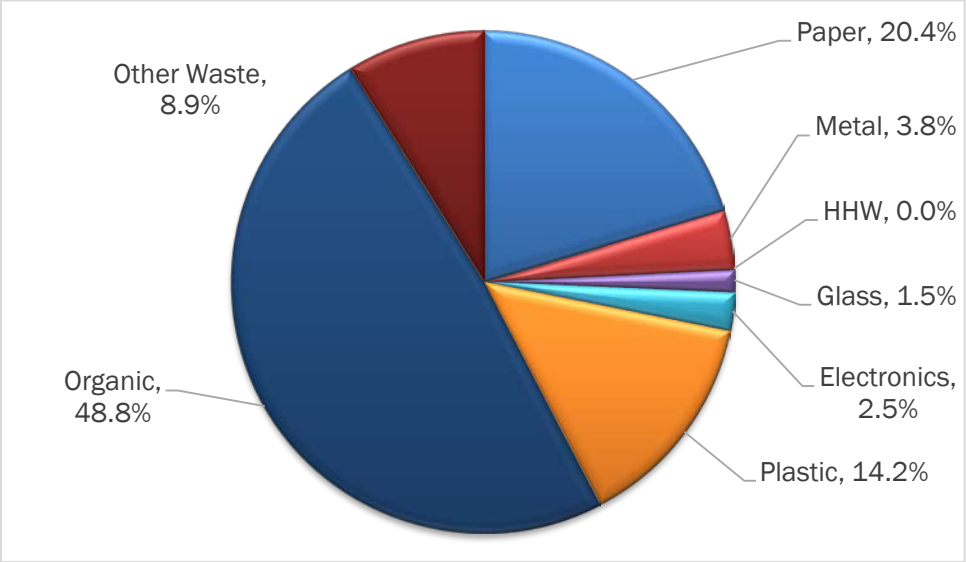

Table 3-5 summarizes the ten most prevalent materials in the multi-family waste stream. The top 10 most prevalent wastes in the Multi-Family waste stream total almost 68 percent of all waste disposed. Once again, food waste was the most prevalent. The diapers/sanitary napkins category was second at 11.6% (once again note there were not enough samples for statistical significance, but it is interesting data).

Table 3-5
Top Ten Most Prevalent Materials in Multi-Family Waste

Rank	Material	Percent
1	Food Waste	21.9%
2	Diapers/Sanitary Napkins	11.6%
3	Compostable Paper	7.9%
4	Bulky Material	5.5%
5	Textiles & Leather	4.6%
6	Treated Wood/ Plywood	4.5%
7	Film: Other	3.4%
8	Non-Recyclable Plastic	2.9%
9	Yard Waste	2.8%
10	Mixed Recyclable Paper	2.7%
Cumulative		**67.7%**

Table 3-6 provides the detailed composition of Multi-Family waste.

Table 3-6
Detailed Multi-Family Residential Waste Composition

Material	Percent
Paper	**20.4%**
Newspaper	1.3%
Office Paper	2.5%
Magazines / Catalogs	0.2%
Gable Top & Aseptic Containers	1.5%
Cardboard / Kraft Paper	1.3%
Boxboard / Paperboard	2.1%
Mixed Recycle Paper	2.7%
Compostable Paper	7.9%
Non-Recyclable Paper	1.0%
Plastic	**14.2%**
#1 PET Bottles	1.4%
Other Non Bottle #1 PET	0.3%
#2 HDPE Bottles and Jars	0.6%
#2 HDPE Non Bottles and Jars	0.3%
#5 PP Containers	0.3%
Other Plastic Bottles #3 - #7	0.2%
#3 PVC Rigid Non-Bottle	0.0%
Plastic Packaging Containers	0.7%
Bulky Rigid	1.4%
#6 Styrofoam	0.6%
Recoverable Film & Film Bags	1.0%
Film: Trash Bags	1.1%
Film: Other	3.4%
Non-Recyclable Plastic	2.9%
Metal	**3.8%**
Aluminum Cans	0.6%
Non-Ferrous Metal	0.1%
Steel Cans	0.6%
Other Scrap Steel	0.7%
Mixed Metal	1.8%

Material	Percent
Glass	**1.5%**
Food & Beverage Glass	1.2%
Non-Recyclable Glass	0.2%
Organic	**48.8%**
Yard Waste	2.8%
Food Waste	21.9%
Liquid Food Waste	2.4%
Textiles & Leather	4.6%
Diapers & Sanitary Napkins	11.6%
Clean Lumber/ Pallets/ Crates	0.3%
Treated Wood/ Plywood	4.5%
Other Organic Material	0.8%
Electronics	**2.5%**
Electronics	2.5%
HHW	**Not Found**
Batteries	*Not Found*
Mercury-Containing Items	*Not Found*
Paints & Solvents	*Not Found*
Automotive Products	*Not Found*
Other HHW	*Not Found*
Other	**8.9%**
Bulky Material	5.5%
Small Household Appliances	*Not Found*
Carpet & Padding	*Not Found*
C&D Material	0.7%
Tires/ Rubber	0.0%
Other Inorganic	2.6%
Total	**100.0%**
Total Samples	**4**

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3.4 Aggregate Waste Composition

Figure 3-4 shows the breakdown of major material groups for the Aggregate waste stream (encompassing residential wastes making up 45% and commercial wastes making up 55% respectively). Results are shown as a percentage of disposed wastes. As shown, Organics is the largest material group at almost 43 percent, followed by Paper at over 17 percent.

Figure 3-4
Aggregate Waste Composition Summary

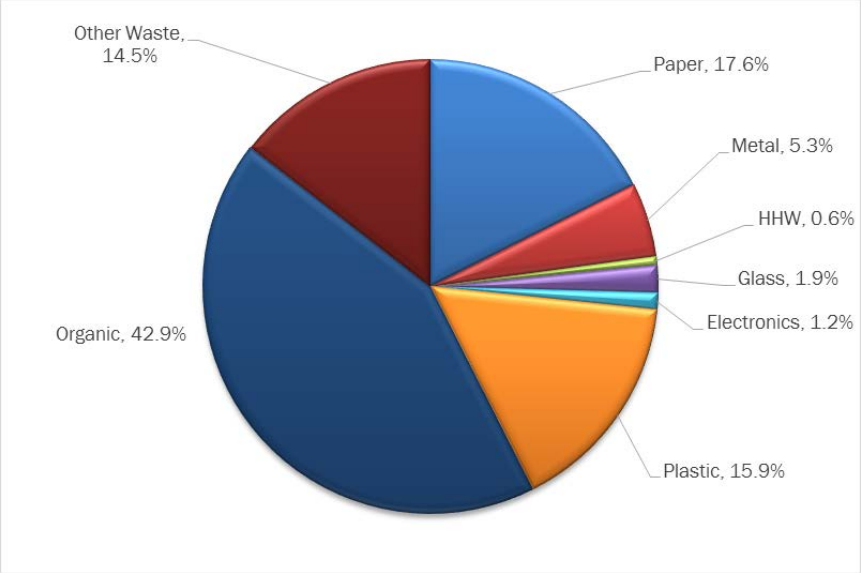

Table 3-7 shows the top 10 most prevalent material categories in the Aggregate waste stream. Not surprisingly, Food Waste was found to be the single most prevalent category. The top 10 most prevalent materials disposed totals 62 percent of the Aggregate waste stream.

Table 3-7
Top Ten Most Prevalent Materials in Aggregate Waste Stream

Rank	Material	Percent
1	Food Waste	21.3%
2	Compostable Paper	6.3%
3	Bulky Material	5.8%
4	Treated Wood/ Plywood	5.3%
5	Textiles & Leather	4.2%
6	Non-Recyclable Plastic	4.1%
7	Cardboard / Kraft Paper	4.0%
8	Film: Other	3.8%
9	Yard Waste	3.7%
10	Clean Lumber/ Pallets/ Crates	3.5%
Cumulative		**62.0%**

Table 3-8 provides a detailed statistical profile of the aggregate Ramsey/Washington County waste stream received at the Newport RRT. For each material category, the mean percent composition and 90 percent confidence intervals are shown.

Table 3-8
Detailed Composition of Aggregate Waste Stream

Material	Percent	Conf Int (+/-)		Material	Percent	Conf Int (+/-)
Paper	**17.6%**	**2.5%**		**Glass**	**1.9%**	**0.6%**
Newspaper	1.2%	0.4%		Food & Beverage Glass	1.6%	0.5%
Office Paper	0.6%	0.3%		Non-Recyclable Glass	0.4%	0.1%
Magazines / Catalogs	1.0%	0.5%				
Gable Top & Aseptic Containers	0.2%	0.1%		**Organic**	**42.9%**	**3.4%**
Cardboard / Kraft Paper	4.0%	1.8%		Yard Waste	3.7%	1.4%
Boxboard / Paperboard	1.6%	0.3%		Food Waste	21.3%	4.0%
Mixed Recycle Paper	1.5%	0.3%		Liquid Food Waste	0.9%	0.4%
Compostable Paper	6.3%	1.0%		Textiles & Leather	4.2%	1.7%
Non Recyclable Paper	1.3%	0.4%		Diapers & Sanitary Napkins	2.1%	0.6%
				Clean Lumber/ Pallets/ Crates	3.5%	1.8%
Plastic	**15.9%**	**2.0%**		Treated Wood/ Plywood	5.3%	2.3%
#1 PET Bottles	0.9%	0.3%		Other Organic Material	1.9%	1.2%
Other Non Bottle #1 PET	0.2%	0.0%				
#2 HDPE Bottles and Jars	0.4%	0.1%		**Electronics**	**1.2%**	**0.5%**
#2 HDPE Non Bottles and Jars	0.2%	0.1%		Electronics	1.2%	0.5%
#5 PP Containers	0.5%	0.1%				
Other Plastic Bottles #3 - #7	0.1%	0.0%		**HHW**	**0.6%**	**0.8%**
#3 PVC Rigid Non-Bottle	0.1%	0.1%		Batteries	0.0%	0.0%
Plastic Packaging Containers	0.8%	0.2%		Mercury-Containing Items	0.0%	0.0%
Bulky Rigid	1.4%	0.6%		Paints & Solvents	0.0%	0.0%
#6 Styrofoam	0.5%	0.1%		Automotive Products	0.1%	0.1%
Recoverable Film & Film Bags	1.2%	0.2%		Other HHW	0.5%	0.8%
Film: Trash Bags	1.7%	0.3%				
Film: Other	3.8%	0.7%		**Other**	**14.5%**	**3.4%**
Non-Recyclable Plastic	4.1%	1.8%		Bulky Material	5.8%	2.9%
				Small Household Appliances	0.2%	0.2%
Metal	**5.3%**	**1.6%**		Carpet & Padding	2.5%	1.4%
Aluminum Cans	0.5%	0.2%		C&D Material	3.3%	1.8%
Non-Ferrous Metal	0.3%	0.2%		Tires/ Rubber	0.9%	0.5%
Steel Cans	0.5%	0.1%		Other Inorganic	1.9%	1.1%
Other Scrap Steel	1.9%	1.0%				
Mixed Metal	2.0%	1.0%		**Total**	**100.0%**	
				Total Samples	**56**	

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

3.5 Analysis of Food Wastes

MSW Consultants understands that the quantity of food wastes is of particular importance in future decision-making about Ramsey and Washington Counties' solid waste management strategies and systems. The purpose of this section is to provide additional details on the incidence of food waste observed in the waste composition study, and to compare the incidence of food waste in Washington and Ramsey Counties with that of other recent studies.

When comparing the results of any two waste composition studies, the initial assessment involves comparing the average compositions. However, a full comparison must also take into account the confidence intervals and the level of confidence at which results were calculated. The confidence intervals signify the range within which the sample mean likely falls. For example, in this study, it was found that the average composition of Residential Food Waste was 20.0 percent. The confidence interval, calculated at a 90 percent level of confidence, was 2.8 percent. This means that the likely incidence of Food Waste in the residential waste stream falls between 17.2 percent and 22.8 percent, and that we can be 90 percent sure this is the case. (The converse is also true – there is a 10 percent chance that the actual incidence of food waste is either less than 17.2 percent or greater than 22.8 percent.)

MSW Consultants compared the results of this study with four recent waste composition studies conducted in Minnesota in the past two years. This involved not only comparing the average Food Waste composition, but also comparing the width of the confidence intervals of each study, and the degree to which the confidence intervals did or did not overlap. The following bullets describe the outcome of this comparison:

- **2013 Minnesota Statewide Study, Statewide Aggregate Results:** This study captured 180 samples of wastes from six facilities across the state. It did not differentiate between residential and commercial waste. Statewide results were weighted towards the metropolitan areas based on their higher waste generation. The incidence of food waste in the statewide study was found to be statistically slightly lower than in Ramsey/Washington County.
- **2013 Minnesota Statewide Study, Advanced Disposal St. Paul Transfer Station:** One of the facilities that participated in the Minnesota statewide study was Advanced Disposal's St. Paul Transfer Station. A total of thirty (30) samples of residential and commercial waste were obtained at this facility, which delivers wastes to the Newport RRF. It is of particular interest that the incidence of food waste from the St. Paul transfer station was statistically comparable to the results of this study.
- **2012 Newport RRF:** This study relied on 30 total samples to determine plant-wide composition. The incidence of food waste in this study was lower that the Ramsey-Washington County study by a statistically significant margin.
- **2012 Covanta Hennepin Energy Recovery Facility:** This study relied on 50 samples to determine plant-wide composition. The incidence of food waste in this study was also lower by a statistically significant margin.

Table 3-9 provides the Food Waste composition and lower and upper confidence intervals for each of the studies references above.

Table 3-9
Comparison of Aggregate Food Waste Composition, Recent Studies

Year	Source/Wasteshed	Material	Composition low-***avg***-high %
2014	Ramsey-Washington County/Ramsey-Washington County	Food Waste	17.3-**21.3**-25.3
		Liquid Food Waste	0.5-**0.9**-1.3
2013	MN Statewide/State	Food Waste	15.2-**18.7**-20.3
2013	MN Statewide/Advance St. Paul TS	Food Waste	13.7-**19.0**-24.3
2012	Newport RRF/Facility Service Area	Food Waste	11.3-**14.6**-18.2
2012	Covanta Hennepin/Facility Service Area	Food Waste	13.7-**16.5**-19.4
		Liquid Waste	0.7-**1.0**-1.4

MSW Consultants also reviewed the individual samples that contributed to the food waste composition during the 2014 Study. Specifically, it was found that four Commercial samples contained a high percentage of food waste. These samples are listed below for reference.

Table 3-10
Samples with High Incidence of Food Waste

Date Obtained	*6/28/14*	*6/28/14*	*6/30/14*	*6/28/14*
Food Waste % in Sample	79.1%	70.3%	60.0%	62.5%
Generator Sector	Commercial	Commercial	Commercial	Commercial
County of Origin	Washington	Ramsey	Ramsey	Ramsey
Hauler	Allied Waste - Action	Aspen	Allied Waste - Action	Allied Waste - Action
Truck #	5986	5992	6041	5520
Truck Type	FL	FL	COMP	FL
Ticket #	1474706	1474681	1474920	1474725
Net Weight (Tons)	3.85	11.66	10.7	6.65

Although it is beyond the scope of this study to confirm, it may be significant that three of these samples were obtained on a Saturday. Restaurants are highly represented in commercial Saturday routes, because the nature of their wastes requires that they not "sit and stew" for several days before being removed. None of the other comparative studies sampled wastes on Saturday, which may have under-represented food wastes in those studies. If Saturday routes tend to service customers that generate more food waste, this arrangement may explain the slightly elevated food waste composition results for the 2014 Newport Facility study as compared to other studies. Additional investigation is required to fully test this hypothesis.

If these four samples are removed from the analysis, the incidence of food waste in the Commercial waste stream drops from 22.4 percent to 15.6 percent, still a high percentage component of the waste. MSW Consultants is not specifically recommending elimination of these samples; rather, the data is provided to illustrate the sensitivity of Commercial food waste composition to four samples that contained a high fraction of food waste. Determining the representativeness of these four samples may require additional sampling.

3.6 Composition and Percent of "Standard" Recyclables

The waste composition in all categories reflects the mature recycling programs in Ramsey and Washington counties. When aggregated, only cardboard/Kraft paper is found among the top ten materials in the waste stream. No standard recyclables made the top ten in the residential or multifamily waste streams, and cardboard and Kraft were the sole category of standard recyclables in the commercial waste stream.

The "paper" classification includes both recyclable and non-recyclable paper categories.

- Of the recyclable papers, newspaper, the historic "heavyweight," was 1.2% of the aggregate waste stream, ranging from 1.2 to 1.3 percent of the individual waste streams.
- Office paper was less than one percent of the residential and commercial waste streams and 2.5 percent of the multi-family stream.
- Magazines and catalogs were less than one percent of the commercial and multifamily waste streams, and 1.2% of the residential waste stream.
- Gable top and aseptic containers were less than 0.2 percent of the residential and commercial waste streams, and 1.5 percent of the multifamily waste stream.
- Mixed recyclable paper was less than one percent of the commercial waste stream and 2.2 and 2.7 percent of the residential and multifamily categories, respectively.
- Cardboard and Kraft paper and boxboard and paperboard were the standard recyclables most prevalent across waste streams. These categories were a combined 6.4 percent in the commercial waste stream, 4.6 percent in the residential waste stream and 3.4 percent in the multifamily waste stream.

The "plastic" classification, similar to paper, includes both recyclable and non-recyclable plastic classifications. The aggregate waste stream had 15.9 percent plastics. Washington County established standard plastic recyclables classification for cities in the County which includes bottle and rigid PET (#1), all HDPE (#2) and all polypropylene (#5) as recyclable plastics.

- Residential waste contained 0.9 percent PET bottles and rigids, the commercial waste contained 1.3 percent PET and the multifamily waste contained 1.7 percent PET.
- HDPE in residential waste comprised 0.6 percent of the residential and commercial waste and 0.9 percent of the multifamily waste.
- PP was 0.6 percent of the residential waste, 0.5 percent of the commercial waste and 0.3 percent of the multifamily waste.

Residential wastes contained 5.8 percent metal items, of which 2.4 percent were mixed metals. Commercial wastes contained 4.8 percent metals and multifamily wastes contained 3.8 percent metals.

Glass was a small fraction of the waste for all generator types.

- Residential waste had 2.4 percent glass, of which 0.5 percent was non-recyclable.
- Commercial waste contained 1.5% glass, of which 0.2 percent was non-recyclable.
- Multifamily glass is the waste totaled 1.5 percent, of which 0.2 percent was non-recyclable.

3.7 Composition and Percent of Other Materials

Household hazardous wastes were 0.2 percent of the residential waste stream, 1 percent of the commercial waste stream and not found in the multi-family waste stream. Electronics were 1.4 percent of the residential waste stream, 1.1 percent of the commercial waste stream and 2.5 percent of the multifamily waste.

Organic wastes were the heaviest classification across all waste streams, with 42.9 percent of the aggregated waste stream. Residential waste was 43.4 percent organics.

- 20 percent of the total weight was food waste, 7.6 percent was yard waste and 7.1 percent were textiles and organics.
- Commercial waste was 42.6 percent organic materials; 22.4 percent of the waste stream was food waste and 8.1 percent treated wood or plywood.
- Multifamily waste was 48.8 percent organic, with food waste at 21.9 percent and diapers and sanitary napkins comprising 11.6 percent.

When evaluating Organics, it is important to note that not all of the material categories could be considered compostable, even though they are organic. For example, Treated Wood – which includes wood that is treated, painted, stained, and engineered (with various glues) – would be inappropriate for a composting process, yet this category is a significant fraction of Organics.

The classification of "Other Waste" comprised 14.5 percent of the aggregate weight. The residential properties included 13.7 percent of Other Waste with 4.3 percent C & D and 2.6 percent bulky material. The commercial waste contained 15.2 percent Other Waste, with 8.4 percent bulky material and 2.4 percent C & D. Multifamily waste contained 8.9 percent Other Waste, with 5.5 percent of bulky materials and 2.6 percent of Other Inorganic waste.

4 Observations

This section provides some summary observations or notes from the composition analysis and overall results.

- The percentage of the "standard" or "typical" recyclables such as Newspaper still remaining in both the residential and commercial waste streams is fairly low and indicative of the mature recycling programs in place.
- The "Top Ten" categories of waste still present in both Residential and Commercial Waste are noticeably lacking the standard recyclables. Only Cardboard/Kraft Paper made the Top Ten in Commercial Waste. Recovering the remaining percentages of the standard recyclables may not achieve the new state goal of 75 percent recovery. Several of the "Top Ten" categories will be difficult to recover (bulky material, treated wood/plywood, textiles and leather, non-recyclable plastics, film, etc.).
- Food wastes were found in particularly high percentages. Residential waste had 20 percent food waste. This was fairly uniformly found in samples. Commercial waste had 22.4 percent Food Waste. Based on a library of waste characterization studies maintained by MSW Consultants, the higher fraction of food waste found in the Counties is consistent with the results from other waste composition studies in jurisdictions with mature, aggressive recycling and diversion programs (including those with effective volume-based pricing structures that give waste generators an incentive to reduce as well as recycle).
- The percentage of Food Waste was driven up by samples sorted on Saturday. Restaurants and groceries are more likely to require service on the weekend to control odors. Commercial routes delivering on Saturday may commonly contain higher percentages of Food Wastes.
- Future options for recycling/organics recovery will need to focus on the Food Wastes.
- Paper generation has continued to decrease fairly dramatically in many waste composition studies and was evident in this analysis.
- Plastic films in MSW are highly contaminated with both moisture and grit. These contaminants negatively affect recoverability.
- The incidence of HHW was impressively low and much of the weight was actually the container. The actual amount of hazardous material is lower than the results suggest.
- Yard Waste was possibly higher than expected in Residential Waste. Part of this is due to the time of year of the analysis (June with recent rains) being grass season. While Yard Waste is banned from landfills, with the common use of carts and automated collection for garbage rather than bags or manual lifting of cans, it is easy for residents to "hide" grass clippings in the cart.
- The disposed waste stream may be changing faster than historical trends. It may be advisable to perform composition analyses on a more regular basis in the future.

Appendix A
Haulers Data Forms

Walters Tons Delivered to Newport
(Estimated percentages)

Direct loads to Newport:

Percent residential _____

Percent commercial _____

Percent commercial _____
that is multi-family

Percent commercial _____
that is business/restaurant

_____
100%

Transfer Trailer loads to Newport

"Like" loads, percent in-county _____
(Ramsey and Washington Counties)

"Like" loads, percent out-of-county _____
(out of Ramsey and Washington Counties)

_____
100%

Transfer Trailer loads to Newport

Percent residential _____

Percent commercial _____

Percent commercial _____
that is multi-family

Percent commercial _____
that is business/restaurant

_____
100%

Are there loads that you deliver to Newport that are mostly multi-family residential loads? Would I be able to contact you to find out days/truck numbers so that we could be sure to sort multi-family loads?

Appendix B
Material Category Definitions

2014 Ramsey and Washington County
Waste Composition Study

Material Category Definitions

PAPER

1. **NEWSPAPER:** Printed groundwood newsprint, including glossy advertisements and inserts typically found in newspapers.

2. **OFFICE PAPER:** High grade continuous form computer paper, white paper including bond, photocopy, notebook paper, index cards, computer cards, notebook paper, xerographic, typing paper, tablets (yellow and with clear glue binding), manila file folders, white register receipts, nonglossy fax paper, and colored ledger paper primarily found in offices.

3. **MAGAZINES / CATALOGS:** Magazines and Catalogs including any "seasonal circular" catalog clearly recognized as such from direct mail (e.g., LL Bean, Nordstrom's, etc.)

4. **GABLE TOP & ASEPTIC CONTAINERS/CARTONS:** Paper milk & juice cartons and poly-coated packaging lined with an aluminum or plastic layer typically containing soy milk, fruit drinks, soups, broth, wine, etc. Packages often have folded down square corners. Includes pouches.

5. **OLD CORRUGATED CARDBOARD (OCC) / KRAFT PAPER:** 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 subcategory includes Kraft paper and pizza boxes that are not excessively contaminated with food or liquid. This subcategory does not include chipboard boxes such as cereal and tissue boxes.

6. **BOXBOARD/ PAPERBOARD:** Uncoated boxboard such as cereal, cracker, paper towel and toilet paper cores, and shoe boxes. Does not include heavily soiled, food contaminated, or wet boxes such as refrigerated and frozen food boxes.

7. **MIXED RECYCLABLE PAPER:** Low grade recyclable paper is a broad category of paper that includes things like mail, phone books, all envelopes (with and without windows), glossy coated paper, paper-back books, construction paper, etc. This subtype excludes hardcover books or books that light up or play music.

8. **COMPOSTABLE PAPER:** Other paper products including paper napkins, towels, and tissues; paper plates, cups, coffee filters, paper egg cartons, soiled fast food paper bags

and wrappers, waxed paper, parchment, and food contaminated or wet pizza boxes, and refrigerated or frozen food packaging.

9. **NON-RECYCLABLE AND NON-COMPOSTABLE PAPER:** All other paper that is not recyclable or compostable. Examples include paper used to dispose of chewing gum, hard cover books, paper sprayed with paint heavy glue or tape, cigarette packages photographs, cardboard with styrofoam glued to side(s), and paper coated with plastic or metal.

PLASTIC

10. **#1 PET BOTTLES:** Narrow necked clear and colored plastic containers that bear the label #1 PET or PETE (polyethylene terephthalate).

11. **OTHER NON-BOTTLE (RIGID) #1 PET:** Other thermoform jars, trays, or clam shells that bear the label #1 PET or PETE (polyethylene terephthalate).

12. **HDPE BOTTLES/JARS:** Natural and pigmented bottles and jars that bear the label #2 HDPE (high-density polyethylene). Examples include dairy products, detergent, fabric softener, bleach, etc.

13. **OTHER NON-BOTTLE #2 HDPE:** Plastic #2 HDPE plastics. This subcategory excludes bottles and jars.

14. **#5 POLYPROPYLENE CONTAINERS:** This subcategory includes all bottles, jars, tubs, lids, cups, clamshells, trays, etc. that bears the label #5 or "PP".

15. **OTHER PLASTIC BOTTLES #3 - #7:** All bottles that bears the numbers #3 PVC, #4 LDPE, #6 PS and #7 Other. This excludes bottles labeled #1 PET, #2 HDPE, and #5 PP.

16. **#3 PVC RIGID NON - BOTTLE:** Includes rigid plastic packaging coded #3 (PVC) such as rigid plastic piping, fencing, etc., and flexible PVC such as tubing.

17. **NON-BOTTLE RIGID PLASTIC PACKAGING/CONTAINERS:** Means plastic containers that are made of types of plastic other than #2 HDPE, #1 PET, #5 PP or PVC. Items may be made of LDPE, PS, Other, dual labeled or unlabeled. When marked for identification, these items may bear the number “4,” “6,” “7” or Dual Label #5 - #7 in the triangular recycling symbol. This subcategory includes empty Keurig coffee container (coffee ground removed) and plastic containers that do not have the triangular recycling symbol.

18. **BULKY RIGID:** Plastic items other than containers or film plastic, that are large (generally larger than a soccer ball). These items are made to last for more than one use. Examples include: crates, buckets (including 5-gallon buckets), baskets, totes, large plastic garbage cans, large tubs, large storage tubs/bins (usually with lids) that don't have sharp corners, flexible (non-brittle) flower pots of 1 gallon size or larger, lawn furniture,

large plastic toys, tool boxes, first aid boxes, and some sporting goods. Can have small amount of other materials such as metal handles.

19. **#6 EXPANDED POLYSTYRENE PACKING AND FOOD CONTAINERS:** Plastic products made of #6 PS expanded polystyrene (Styrofoam). Examples are cold and hot drink cups, packing peanuts, molded shipping packaging, coolers, takeout food trays and clamshells, etc. This subcategory excludes rigid #6 PS packaging.

20. **RECOVERABLE FILM & FILM BAGS:** This category includes film plastics targeted in the Minnesota Waste Wise "It's In the Bag" program. Includes plastic shopping bags, bread bags, cereal bags, shrink wrap, zipper type plastic bags (with zipper mechanism removed), produce bags, plastic film from paper towel and toilet paper rolls, salt bags, and 6 - pack holder rings. These film products are used to contain merchandise to transport from the place of purchase, given out by the store with the purchase and are intended for one-time use. Does not include frozen food bags and plastic wrap used for wrapping meat or fish.

21. **FILM: TRASH BAGS:** Plastic trash bags means plastic bags sold for use as trash bags, for both residential and commercial use. This subcategory includes garbage, kitchen, compactor, can liner, yard, lawn, leaf, and recycling bags. This subcategory does not include other plastic bags, like shopping bags, that might have been used to contain trash.

22. **FILM: OTHER:** Other Film means all other plastic film that does not fit into any other type, excluding flexible plastic pouches. Examples include other types of plastic bags such as sandwich bags, zipper-re-closeable bags, produce bags, frozen vegetable bags, food wrappers such as candy bar wrappers, potato chip bags, drink pouches, mailing pouches, bank bags, X-ray film, metallized film (such as balloons), and highly contaminated bags and mentioned above.

23. **OTHER PLASTIC:** Plastic that cannot be put in any other type. These items are usually recognized by their optical opacity. This type includes items made mostly of plastic but combined with other materials. Examples include auto parts made of plastic attached to metal, plastic drinking straws, unlabeled plastic cups, produce trays, unlabeled cookie trays found in cookie packages, plastic strapping, plastic lids, some kitchen ware, toys, window blinds, plastic lumber, insulating foam, imitation ceramics, handles and knobs, plastic string (such as used for hay bales), plastic rigid bubble/foil packaging (as for medications), small (less than 1 gal) plant containers such as nursery pots and plant six-packs, any unlabeled plastic products, and new Formica, vinyl, or linoleum.

METAL

24. **ALUMINUM CANS:** Containers such as used beverage containers (UBC) and other cans made from aluminum used for containing soda, fruit, juice, sports drinks, iced tea, beer, food, pet food, etc.

25. **NON-FERROUS:** Other non-ferrous means any metal item, other than aluminum cans, that is neither stainless steel nor magnetic. These items may be made of aluminum, copper, brass, bronze, lead, or zinc. Examples include aluminum window frames, aluminum siding, copper wire, shell casings, brass pipe, and aluminum foil or trays.

26. **STEEL / TIN FOOD & BEVERAGE CONTAINERS:** Steel or tin food & beverage containers means rigid containers made mainly of steel that are Bimetal Cans. These items will stick to a magnet and may be tin-coated. This subtype is used to store food, and beverages.

27. **OTHER FERROUS METAL:** Metal composed primarily of iron, plus other scrap ferrous including clothes hangers, sheet metal products, pipes, miscellaneous metal scraps, and other magnetic metal items. This subcategory excludes food and beverage containers.

28. **REMAINDER/COMPOSITE METAL:** Metal that cannot be put in any other type. This subcategory includes items made mostly of metal but combined with other materials and items made of both ferrous metal and non-ferrous metal combined. Examples include motors, insulated wire, ad finished products that contain a mixture of metals, plastic, and other materials, whose weight is derived significantly from the metal portion of its construction.

GLASS

29. **GLASS FOOD & BEVERAGE CONTAINER GLASS:** Glass such as clear, brown, green, and blue containers for food, beverage, wine, liquor, and beer.

30. **OTHER GLASS:** All other glass that was not originally used for food or beverage containers. Examples including plate glass, ceramics, glass plates, cooking utensils, ash trays, mirrors, incandescent light bulbs, and fragments. If the glass is broken and not 100% identifiable as food or beverage glass, it belongs to Other Glass.

ORGANIC

31. **YARD WASTE:** Yard waste means grass clippings, leaves, branches, sticks, garden waste, brush, stumps compostable yard waste bags, and non-woody plant material such as cut flowers.

32. **FOOD WASTE:** Food preparation wastes, food scraps, composting food waste bags, and spoiled food including meat' bones' and Keurig type coffee cups that have not been emptied. When feasible, food waste will be removed from containers (e.g., Tupperware, carry-out containers, etc.) and the food waste will be placed in the Food Waste category and the container will be placed in the appropriate category.

33. **LIQUID FOOD WASTE:** Liquids such as water, soda, juice, etc. that is disposed in a capped bottles or other type of containers. When possible the liquids will be removed from containers (e.g., PET bottles, milk cartons, glass jars) and the liquids will be

emptied into a 5- gallon or similar-sized bucket, and the bottle or container will be placed in its appropriate category.

34. **TEXTILE & LEATHER:** Items made of natural or manmade woven thread, yarn, fabric, or cloth. This subcategory includes clothes, fabric trimmings, draperies, towels, and all natural and synthetic cloth fibers. This subcategory includes leather shoes, leather bags, or leather belts.

35. **DIAPERS & SANITARY NAPKINS:** Diapers and Sanitary Napkins.

36. **NON-TREATED DIMENSIONAL LUMBER/PALLETS/CRATES:** 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. This subcategory also includes clean pallets and crates made of lumber used for shipping and packaging.

37. **TREATED /PAINTED /STAINED WOOD & PLYWOOD/COMPOSITE WOOD:** Wood treated with adhesive, paint, stain, fire retardant, pesticide or preservative. Examples are painted or stained lengths of wood from construction or woodworking activities, particle board, OSB, and plywood.

38. **OTHER ORGANIC MATERIAL:** Material that is mostly organic that does not fit into the categories specified above, and items that are primarily organic but include other materials such as plastic or metal. Examples include cotton balls, hair, Q-tips, wax, soap, popsicle sticks, toothpicks, animal feces, and animal carcasses.

ELECTRONIC

39. **ELECTRONIC:** Electronic items with cathode ray tubes (CRTs) such as TVs, flat screen TVs, computer monitors, copiers, scanners, printers, cell phones, telephones, phone answering machines, computer gaming systems, other electronic toys, portable CD players, camcorders, digital cameras, and other small consumer electronics.

HOUSEHOLD HAZARDOUS WASTE (HHW)

40. **BATTERIES:** Lead acid, all household (rechargeable and non-rechargeable), and button batteries.

41. **MERCURY-CONTAINING ITEMS:** Items that contain mercury. Examples include compact fluorescent light (CFL) and fluorescent light bulbs, thermostats, thermometers, light switches, and other items containing mercury.

42. **PAINTS & SOLVENTS:** Liquid paints, solvents, and stains that are oil or water based products. This subcategory does not include empty or dried paint or solvent containers.

43. **AUTOMOTIVE PRODUCTS:** Antifreeze, oil, oil filters, and other automotive products.

44. **OTHER HHW:** All other products characterized as toxic, corrosive, flammable, ignitable, radioactive, poisonous, or reactive. Examples include strong cleaners, pesticides, drain cleaners, syringes, pharmaceuticals, untreated medical waste, smoke detectors, etc.

OTHER WASTE

45. **BULKY MATERIAL:** Large bulky items made of more than one material such as mattresses, box springs, couches, chairs, etc.

46. **SMALL HOUSEHOLD APPLIANCES:** Electrically-powered household products with very little or no circuit boards fabricated from metals and plastics not easily separable into individual materials. Examples include hair dryers, toasters, coffee makers, etc.

47. **CARPET & PADDING:** Carpet means flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material. This subcategory includes carpet padding.

48. **CONSTRUCTION & DEMOLITION (C&D) MATERIAL**: All C&D material excluding wood products. Examples include brick, asphalt, concrete, other aggregates, ceramics, tiles, toilets, sinks, and fiberglass insulation, plate glass, tiles, and gypsum board.

49. **TIRES / RUBBER**: Tires and rubber means vehicle tires, tubes, and other material mainly made of rubber. Examples include tires from trucks, automobiles, motorcycles, heavy equipment, bicycles, some shoes, and floor mats.

50. **OTHER INORGANIC:** Other inorganic materials means inerts and other material that cannot be put in any other type. This type may include items from different types combined, which would be very hard to separate.

Appendix C
Field Data

Residential Samples - Raw Data

	Date	6/23/2014	6/23/2014	6/23/2014	6/23/2014
	County	Ramsey	Ramsey	Ramsey	Washington
	Hauler Name	Allied Waste - Acti	Walters Recycling	Ken Berquist & Sc	Tennis Sanitation
	Truck #	5854	6086	5585	344
	Truck Type	SL	RL	RL	SL
	Ticket #	1473192	1473206	1473225	1473227
	Net Weight	10.72	2.88	4.97	6.01
	Sequence Number	1	2	3	4
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**33.4**	**59.0**	**21.8**	**51.5**
1	NEWSPAPER	0.2	5.2	1.4	5.0
2	OFFICE PAPER	1.3	0.6	1.3	0.0
3	MAGAZINES / CATALOGS	5.1	10.1	0.2	1.7
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.2	0.3	0.1
5	CARDBOARD /KRAFT PAPER	6.7	5.6	2.6	13.8
6	BOXBOARD/ PAPERBOARD	0.4	3.7	2.1	3.2
7	MIXED RECYCLABLE PAPER	1.3	5.6	1.6	4.6
8	COMPOSTABLE PAPER	13.7	10.0	10.1	12.4
9	R/C PAPER	4.9	18.1	2.3	10.8
	Plastic Subtotal	**22.1**	**21.8**	**23.1**	**22.8**
10	#1 PET BOTTLES	0.2	0.3	0.8	1.0
11	OTHER NON-BOTTLE #1 PET	0.0	0.0	0.0	0.0
12	#2 HDPE BOTTLES/JARS	0.1	0.4	0.8	1.2
13	#2 HDPE NON-BOTTLE AND JARS	0.4	0.6	0.0	0.0
14	#5 PP CONTAINERS	3.5	4.6	1.3	1.5
15	OTHER PLASTIC BOTTLES #3 - #7	0.4	0.2	0.5	0.0
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.6
17	PLASTIC PACKAGING/CONTAINERS	0.4	0.7	0.4	2.0
18	BULKY RIGID	3.6	1.0	10.6	0.0
19	#6 STYROFOAM	0.6	0.9	0.6	0.3
20	RECOVERABLE FILM & FILM BAGS	1.8	3.2	2.3	2.9
21	FILM: TRASH BAGS	1.8	1.8	0.9	1.8
22	FILM: OTHER	7.9	2.1	4.0	4.2
23	R/C PLASTIC	1.5	6.3	1.1	7.6
	Metal Subtotal	**5.5**	**7.6**	**5.0**	**5.7**
24	ALUMINUM CANS	0.2	0.5	0.7	1.1
25	NON-FERROUS METAL	0.0	1.0	0.7	0.9
26	STEEL CANS	0.7	0.6	0.6	2.3
27	OTHER SCRAP STEEL	4.3	1.4	1.7	0.7
28	R/C METAL	0.4	4.2	1.4	0.8
	Glass Subtotal	**2.8**	**10.2**	**0.7**	**2.3**
29	FOOD & BEVERAGE GLASS	1.4	9.3	0.7	1.3
30	R/C GLASS	1.4	0.9	0.0	1.0
	Organic Subtotal	**130.1**	**78.9**	**83.5**	**107.6**
31	YARD WASTE	10.8	11.4	2.1	0.0
32	FOOD WASTE	0.3	30.5	41.8	30.3
33	LIQUID FOOD WASTE	0.5	0.0	0.4	0.0
34	TEXTILE & LEATHER	110.1	14.6	11.1	4.1
35	DIAPERS & SANITARY NAPKINS	0.0	0.0	26.8	1.4
36	CLEAN LUMBER/PALLETS/CRATES	0.0	0.0	0.0	52.0
37	TREATED WOOD & PLYWOOD	0.0	15.9	0.7	5.9
38	R/C ORGANIC MATERIAL	8.4	6.6	0.7	14.0
	Electronic Subtotal	**1.4**	**11.9**	**0.0**	**2.8**
39	ELECTRONICS	1.4	11.9	0.0	2.8
	HHW Subtotal	**0.1**	**1.3**	**0.2**	**0.1**
40	BATTERIES	0.1	0.4	0.1	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.9	0.1	0.1
	Subtotal Other Waste	**35.1**	**24.7**	**62.2**	**6.4**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	3.7	12.8	0.0	6.0
47	CARPET & PADDING	27.5	0.9	0.0	0.0
48	C&D MATERIAL	0.0	0.1	15.9	0.0
49	TIRES / RUBBER	3.9	2.7	0.1	0.1
50	OTHER INORGANIC	0.0	8.2	46.2	0.3
	Total	**230.3**	**215.2**	**196.3**	**199.0**

Residential Samples - Raw Data

	Date	6/23/2014	6/24/2014	6/24/2014	6/24/2014
	County	Ramsey	Ramsey	Ramsey	Washington
	Hauler Name	Gene's Disposal	Allied Waste - Acti	Nitti Sanitation	Tennis Sanitation
	Truck #	5814	5895	6015	343
	Truck Type	RL	SL	SL	SL
	Ticket #	1473254	1473504	1473509	1473518
	Net Weight	5.49	6.7	9.16	6.98
	Sequence Number	5	6	7	8
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**12.0**	**45.8**	**43.6**	**23.0**
1	NEWSPAPER	0.0	2.9	1.9	0.1
2	OFFICE PAPER	1.6	0.0	3.1	0.0
3	MAGAZINES / CATALOGS	0.7	0.4	1.5	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.2	0.9	0.0
5	CARDBOARD /KRAFT PAPER	3.3	8.1	6.6	2.9
6	BOXBOARD/ PAPERBOARD	0.0	8.5	2.2	5.9
7	MIXED RECYCLABLE PAPER	0.6	4.0	4.8	3.8
8	COMPOSTABLE PAPER	5.6	20.2	20.0	9.8
9	R/C PAPER	0.4	1.6	2.8	0.6
	Plastic Subtotal	**15.8**	**41.5**	**41.3**	**41.5**
10	#1 PET BOTTLES	0.1	3.2	3.1	0.2
11	OTHER NON-BOTTLE #1 PET	1.3	0.3	0.4	0.2
12	#2 HDPE BOTTLES/JARS	0.1	2.0	1.6	2.0
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.2	0.0	0.1
14	#5 PP CONTAINERS	0.0	0.6	1.7	0.6
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.0	0.4	0.4
16	#3 PVC RIGID NON - BOTTLE	1.4	0.0	0.0	3.3
17	PLASTIC PACKAGING/CONTAINERS	0.4	2.3	2.6	2.3
18	BULKY RIGID	0.0	0.5	0.0	10.8
19	#6 STYROFOAM	2.7	2.9	1.9	2.1
20	RECOVERABLE FILM & FILM BAGS	0.6	8.4	3.6	4.6
21	FILM: TRASH BAGS	2.2	4.3	13.5	3.4
22	FILM: OTHER	5.6	12.7	12.8	7.5
23	R/C PLASTIC	1.4	4.3	0.0	4.4
	Metal Subtotal	**4.6**	**3.6**	**20.4**	**26.7**
24	ALUMINUM CANS	0.5	0.7	1.4	0.5
25	NON-FERROUS METAL	0.4	0.5	0.5	2.4
26	STEEL CANS	1.3	1.5	1.5	1.6
27	OTHER SCRAP STEEL	2.5	0.1	0.3	10.2
28	R/C METAL	0.0	0.9	16.8	12.1
	Glass Subtotal	**14.4**	**2.3**	**5.3**	**2.3**
29	FOOD & BEVERAGE GLASS	12.8	2.3	4.9	2.0
30	R/C GLASS	1.6	0.0	0.4	0.3
	Organic Subtotal	**101.5**	**96.5**	**79.6**	**67.6**
31	YARD WASTE	65.3	4.2	0.2	8.6
32	FOOD WASTE	22.8	56.7	52.8	46.9
33	LIQUID FOOD WASTE	0.1	0.8	0.4	0.0
34	TEXTILE & LEATHER	0.0	17.4	18.1	0.0
35	DIAPERS & SANITARY NAPKINS	0.0	10.3	7.2	2.7
36	CLEAN LUMBER/PALLETS/CRATES	8.1	0.5	0.0	0.0
37	TREATED WOOD & PLYWOOD	0.0	0.0	0.0	7.1
38	R/C ORGANIC MATERIAL	5.2	6.7	0.9	2.4
	Electronic Subtotal	**0.0**	**0.0**	**0.1**	**3.5**
39	ELECTRONICS	0.0	0.0	0.1	3.5
	HHW Subtotal	**0.1**	**0.0**	**0.1**	**6.0**
40	BATTERIES	0.1	0.0	0.1	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	6.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**102.1**	**3.5**	**7.5**	**37.4**
45	BULKY MATERIAL	96.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0	15.7
48	C&D MATERIAL	0.0	0.0	0.0	10.6
49	TIRES / RUBBER	0.0	2.6	0.6	0.1
50	OTHER INORGANIC	6.1	0.9	6.9	11.0
	Total	**250.4**	**193.1**	**197.7**	**207.9**

Residential Samples - Raw Data

	Date	6/24/2014	6/24/2014	6/25/2014	6/25/2014
	County	Washington	Washington	Washington	Ramsey
	Hauler Name	Tennis Sanitation	Maroney's Sanitat	Tennis Sanitation	Allied Waste - Acti
	Truck #	344	5951	5619	5851
	Truck Type	SL	SL	SL	SL
	Ticket #	1473552	1473573	1473836	1473876
	Net Weight	8.87	11.57	10.08	8
	Sequence Number	9	10	11	12
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**29.1**	**82.6**	**13.7**	**40.1**
1	NEWSPAPER	0.7	13.2	0.0	1.6
2	OFFICE PAPER	0.0	5.6	0.0	2.6
3	MAGAZINES / CATALOGS	0.0	6.5	0.0	2.4
4	GABLE TOP & ASEPTIC CONTAINERS	1.2	0.7	0.2	0.0
5	CARDBOARD /KRAFT PAPER	2.8	2.2	0.5	2.3
6	BOXBOARD/ PAPERBOARD	4.1	11.4	2.0	11.7
7	MIXED RECYCLABLE PAPER	3.9	12.8	1.3	4.5
8	COMPOSTABLE PAPER	15.7	27.3	6.8	14.2
9	R/C PAPER	0.8	3.1	3.0	1.0
	Plastic Subtotal	**26.3**	**55.8**	**29.6**	**47.7**
10	#1 PET BOTTLES	1.2	1.0	2.3	1.9
11	OTHER NON-BOTTLE #1 PET	0.9	0.1	0.1	0.0
12	#2 HDPE BOTTLES/JARS	0.8	0.9	0.1	2.2
13	#2 HDPE NON-BOTTLE AND JARS	0.1	1.0	0.0	0.3
14	#5 PP CONTAINERS	1.4	2.6	0.6	3.0
15	OTHER PLASTIC BOTTLES #3 - #7	1.3	0.2	0.4	0.5
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.8	1.7	13.5	3.5
18	BULKY RIGID	0.5	3.2	0.8	11.9
19	#6 STYROFOAM	0.9	0.0	1.8	1.6
20	RECOVERABLE FILM & FILM BAGS	5.0	8.8	1.7	2.6
21	FILM: TRASH BAGS	2.1	2.0	2.0	6.1
22	FILM: OTHER	8.6	29.8	5.3	12.7
23	R/C PLASTIC	2.9	4.7	1.1	1.7
	Metal Subtotal	**6.7**	**10.1**	**48.8**	**21.2**
24	ALUMINUM CANS	1.4	1.8	0.2	2.1
25	NON-FERROUS METAL	1.2	0.3	0.8	0.2
26	STEEL CANS	2.2	2.3	1.5	2.3
27	OTHER SCRAP STEEL	0.2	3.7	44.0	11.2
28	R/C METAL	1.8	2.1	2.4	5.5
	Glass Subtotal	**5.5**	**2.1**	**3.6**	**4.7**
29	FOOD & BEVERAGE GLASS	5.5	1.0	3.6	4.5
30	R/C GLASS	0.0	1.1	0.0	0.2
	Organic Subtotal	**117.7**	**40.5**	**45.7**	**80.6**
31	YARD WASTE	36.2	11.2	0.6	0.0
32	FOOD WASTE	53.9	26.3	26.5	44.8
33	LIQUID FOOD WASTE	2.7	0.0	0.0	1.3
34	TEXTILE & LEATHER	8.3	3.0	0.4	3.9
35	DIAPERS & SANITARY NAPKINS	8.9	0.0	15.3	8.9
36	CLEAN LUMBER/PALLETS/CRATES	0.0	0.0	0.0	1.4
37	TREATED WOOD & PLYWOOD	1.9	0.0	0.2	6.8
38	R/C ORGANIC MATERIAL	5.9	0.0	2.8	13.6
	Electronic Subtotal	**0.0**	**0.8**	**0.0**	**0.0**
39	ELECTRONICS	0.0	0.8	0.0	0.0
	HHW Subtotal	**0.1**	**0.2**	**0.1**	**0.0**
40	BATTERIES	0.1	0.2	0.1	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**43.4**	**2.4**	**63.1**	**15.6**
45	BULKY MATERIAL	0.0	0.0	55.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	42.1	0.0	0.0	0.0
48	C&D MATERIAL	0.0	0.0	0.0	0.4
49	TIRES / RUBBER	0.4	2.4	8.1	0.1
50	OTHER INORGANIC	0.9	0.0	0.0	15.1
	Total	**228.7**	**194.4**	**204.5**	**209.7**

Residential Samples - Raw Data

	Date	6/25/2014	6/26/2014	6/26/2014	6/26/2014
	County	Washington	Washington	Ramsey	Washington
	Hauler Name	Waste Manageme	Tennis Sanitation	Advanced Disposa	Waste Manageme
	Truck #	6170	5616	5955	6182
	Truck Type	FL	SL	FL	SL
	Ticket #	1473884	1474168	1474169	1474199
	Net Weight	8.61	7.77	8.96	9.43
	Sequence Number	13	14	15	16
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**26.3**	**46.8**	**26.8**	**53.9**
1	NEWSPAPER	0.5	0.5	0.0	9.1
2	OFFICE PAPER	0.0	0.4	0.3	1.8
3	MAGAZINES / CATALOGS	1.3	5.7	0.5	0.7
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.5	0.2	0.7
5	CARDBOARD /KRAFT PAPER	6.4	5.3	2.6	10.5
6	BOXBOARD/ PAPERBOARD	5.9	5.7	4.9	7.5
7	MIXED RECYCLABLE PAPER	4.8	4.8	0.4	3.2
8	COMPOSTABLE PAPER	6.3	19.7	11.4	13.8
9	R/C PAPER	1.2	4.4	6.7	6.8
	Plastic Subtotal	**31.6**	**36.6**	**43.7**	**30.1**
10	#1 PET BOTTLES	1.2	2.0	1.5	2.2
11	OTHER NON-BOTTLE #1 PET	0.1	0.4	0.2	0.2
12	#2 HDPE BOTTLES/JARS	0.9	1.5	2.6	1.1
13	#2 HDPE NON-BOTTLE AND JARS	1.9	0.2	0.0	0.1
14	#5 PP CONTAINERS	1.2	0.6	0.4	0.6
15	OTHER PLASTIC BOTTLES #3 - #7	0.2	0.0	0.6	0.7
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	1.5
17	PLASTIC PACKAGING/CONTAINERS	1.4	2.5	2.0	3.1
18	BULKY RIGID	5.9	6.9	0.0	0.4
19	#6 STYROFOAM	0.8	1.5	0.6	2.3
20	RECOVERABLE FILM & FILM BAGS	3.0	0.9	2.4	0.0
21	FILM: TRASH BAGS	3.0	3.3	9.7	4.2
22	FILM: OTHER	9.9	11.4	11.3	9.8
23	R/C PLASTIC	2.4	5.5	12.6	4.2
	Metal Subtotal	**30.0**	**3.9**	**2.8**	**25.5**
24	ALUMINUM CANS	0.5	0.1	0.7	0.6
25	NON-FERROUS METAL	0.2	0.9	0.2	0.6
26	STEEL CANS	1.5	1.2	1.2	2.9
27	OTHER SCRAP STEEL	4.9	1.8	0.6	0.0
28	R/C METAL	23.0	0.0	0.2	21.5
	Glass Subtotal	**0.0**	**31.1**	**4.8**	**5.1**
29	FOOD & BEVERAGE GLASS	0.0	24.3	4.8	3.3
30	R/C GLASS	0.0	6.8	0.0	1.8
	Organic Subtotal	**96.0**	**93.4**	**124.5**	**94.4**
31	YARD WASTE	16.9	29.4	18.4	32.5
32	FOOD WASTE	26.1	49.5	48.1	30.9
33	LIQUID FOOD WASTE	1.2	0.3	0.0	0.6
34	TEXTILE & LEATHER	35.9	3.6	47.1	9.2
35	DIAPERS & SANITARY NAPKINS	5.0	2.1	0.0	3.3
36	CLEAN LUMBER/PALLETS/CRATES	5.6	2.2	2.2	0.3
37	TREATED WOOD & PLYWOOD	5.4	4.7	8.5	8.5
38	R/C ORGANIC MATERIAL	0.0	1.7	0.3	9.2
	Electronic Subtotal	**5.6**	**1.5**	**4.3**	**4.2**
39	ELECTRONICS	5.6	1.5	4.3	4.2
	HHW Subtotal	**0.3**	**0.1**	**0.0**	**0.1**
40	BATTERIES	0.2	0.1	0.0	0.1
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.1	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**10.0**	**0.1**	**7.0**	**1.5**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	9.1	0.0	6.8	0.1
48	C&D MATERIAL	0.0	0.0	0.0	1.4
49	TIRES / RUBBER	0.2	0.0	0.2	0.0
50	OTHER INORGANIC	0.7	0.1	0.0	0.0
	Total	**199.6**	**213.4**	**213.7**	**214.6**

Residential Samples - Raw Data

	Date	1/0/1900	6/26/2014	6/26/2014	6/27/2014
	County	Ramsey	Washington	Washington	Ramsey
	Hauler Name	EME Other	Waste Manageme	Maroney's Sanitat	Allied Waste - Acti
	Truck #	6106	6170	Sidewinder	6117
	Truck Type	RL	SL	SL	SL
	Ticket #	1474253	1474256	1474317	1474469
	Net Weight	6.47	7.9	7.5	8.78
	Sequence Number	17	18	19	20
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**21.7**	**53.1**	**25.6**	**46.0**
1	NEWSPAPER	2.8	0.2	0.2	4.3
2	OFFICE PAPER	0.5	0.0	0.0	0.0
3	MAGAZINES / CATALOGS	2.0	2.9	0.8	1.2
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.3	0.4	0.3
5	CARDBOARD /KRAFT PAPER	4.8	14.6	3.7	2.3
6	BOXBOARD/ PAPERBOARD	2.1	2.1	0.9	8.8
7	MIXED RECYCLABLE PAPER	2.8	10.4	4.8	3.9
8	COMPOSTABLE PAPER	4.9	16.7	11.8	23.9
9	R/C PAPER	2.0	6.0	3.1	1.4
	Plastic Subtotal	**28.4**	**29.4**	**25.0**	**38.4**
10	#1 PET BOTTLES	2.6	1.2	1.2	2.6
11	OTHER NON-BOTTLE #1 PET	1.2	0.3	0.4	0.7
12	#2 HDPE BOTTLES/JARS	0.3	0.6	1.3	1.1
13	#2 HDPE NON-BOTTLE AND JARS	0.1	0.1	0.9	0.5
14	#5 PP CONTAINERS	0.9	0.4	0.4	0.4
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.3	0.0	0.4
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	1.1	2.1	2.3	0.0
18	BULKY RIGID	0.0	2.3	0.0	4.3
19	#6 STYROFOAM	1.2	1.2	0.4	3.1
20	RECOVERABLE FILM & FILM BAGS	1.4	3.8	2.4	3.0
21	FILM: TRASH BAGS	3.5	0.7	1.7	4.5
22	FILM: OTHER	7.6	7.6	10.3	11.9
23	R/C PLASTIC	8.7	9.1	3.8	6.2
	Metal Subtotal	**14.9**	**7.2**	**2.9**	**6.8**
24	ALUMINUM CANS	0.8	0.4	0.8	0.6
25	NON-FERROUS METAL	0.0	0.8	0.6	0.7
26	STEEL CANS	2.1	1.3	1.5	3.1
27	OTHER SCRAP STEEL	2.3	3.3	0.0	2.5
28	R/C METAL	9.8	1.5	0.1	0.0
	Glass Subtotal	**1.9**	**3.7**	**0.9**	**3.7**
29	FOOD & BEVERAGE GLASS	1.8	2.8	0.0	3.7
30	R/C GLASS	0.1	0.9	0.9	0.0
	Organic Subtotal	**102.1**	**88.5**	**109.1**	**117.2**
31	YARD WASTE	8.2	0.6	40.8	1.9
32	FOOD WASTE	68.1	31.1	50.9	83.7
33	LIQUID FOOD WASTE	1.3	4.8	0.3	1.4
34	TEXTILE & LEATHER	6.4	13.9	6.2	18.9
35	DIAPERS & SANITARY NAPKINS	14.1	3.2	8.4	6.9
36	CLEAN LUMBER/PALLETS/CRATES	0.0	0.0	0.0	0.0
37	TREATED WOOD & PLYWOOD	4.0	21.1	0.1	4.4
38	R/C ORGANIC MATERIAL	0.0	13.9	2.5	0.0
	Electronic Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
39	ELECTRONICS	0.0	0.0	0.0	0.0
	HHW Subtotal	**0.0**	**0.1**	**0.0**	**0.4**
40	BATTERIES	0.0	0.1	0.0	0.4
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**44.8**	**31.9**	**45.5**	**0.3**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	24.5	0.0	0.0
48	C&D MATERIAL	43.4	0.0	45.5	0.0
49	TIRES / RUBBER	1.4	3.9	0.0	0.3
50	OTHER INORGANIC	0.0	3.5	0.0	0.0
	Total	**213.7**	**213.8**	**208.9**	**212.7**

Residential Samples - Raw Data

	Date	6/27/2014	6/27/2014	6/27/2014	6/27/2014
	County	Ramsey	Washington	Ramsey	Ramsey
	Hauler Name	Allied Waste - Acti	Waste Manageme	Highland Sanitatic	Highland Sanitatic
	Truck #	6123	5628	6162	6126
	Truck Type	SL	RL	RL	RL
	Ticket #	1474490	1474507	1474522	1474550
	Net Weight	7.28	5.2	4.49	7.34
	Sequence Number	21	22	23	24
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**36.4**	**8.3**	**57.2**	**39.5**
1	NEWSPAPER	4.7	1.4	0.5	0.6
2	OFFICE PAPER	0.0	0.0	18.0	0.0
3	MAGAZINES / CATALOGS	0.3	0.1	0.8	11.7
4	GABLE TOP & ASEPTIC CONTAINERS	0.2	0.0	0.2	0.0
5	CARDBOARD /KRAFT PAPER	3.9	0.3	5.5	5.8
6	BOXBOARD/ PAPERBOARD	3.7	0.7	3.6	3.3
7	MIXED RECYCLABLE PAPER	11.0	1.4	13.8	2.2
8	COMPOSTABLE PAPER	9.5	4.3	11.8	13.5
9	R/C PAPER	3.2	0.2	3.2	2.5
	Plastic Subtotal	**18.8**	**10.9**	**27.2**	**38.5**
10	#1 PET BOTTLES	1.8	0.4	0.3	0.6
11	OTHER NON-BOTTLE #1 PET	0.2	0.2	0.6	0.4
12	#2 HDPE BOTTLES/JARS	0.6	0.4	0.4	0.4
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.4	0.8	0.2
14	#5 PP CONTAINERS	0.6	0.1	0.4	1.4
15	OTHER PLASTIC BOTTLES #3 - #7	0.6	0.0	0.5	0.4
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	1.7	0.4	0.8	2.5
18	BULKY RIGID	0.0	0.0	0.0	0.0
19	#6 STYROFOAM	1.2	0.4	0.9	1.4
20	RECOVERABLE FILM & FILM BAGS	1.9	0.4	0.8	1.7
21	FILM: TRASH BAGS	2.7	0.9	1.8	5.9
22	FILM: OTHER	6.3	1.4	9.1	13.4
23	R/C PLASTIC	1.4	6.0	11.0	10.5
	Metal Subtotal	**5.6**	**0.4**	**13.8**	**11.2**
24	ALUMINUM CANS	0.7	0.2	0.7	0.5
25	NON-FERROUS METAL	0.2	0.1	0.3	0.2
26	STEEL CANS	1.4	0.0	0.6	2.6
27	OTHER SCRAP STEEL	3.4	0.1	0.0	0.9
28	R/C METAL	0.0	0.0	12.3	7.1
	Glass Subtotal	**4.1**	**1.5**	**10.4**	**4.5**
29	FOOD & BEVERAGE GLASS	0.0	1.5	9.7	1.1
30	R/C GLASS	4.1	0.0	0.7	3.4
	Organic Subtotal	**102.3**	**101.1**	**60.6**	**101.8**
31	YARD WASTE	26.4	52.8	18.3	22.9
32	FOOD WASTE	46.1	36.8	29.1	58.4
33	LIQUID FOOD WASTE	0.5	0.0	0.0	0.0
34	TEXTILE & LEATHER	18.5	1.9	10.7	4.5
35	DIAPERS & SANITARY NAPKINS	4.8	9.2	0.9	10.0
36	CLEAN LUMBER/PALLETS/CRATES	3.5	0.0	0.0	0.0
37	TREATED WOOD & PLYWOOD	0.1	0.4	1.1	4.1
38	R/C ORGANIC MATERIAL	2.5	0.0	0.6	2.0
	Electronic Subtotal	**0.0**	**7.4**	**26.4**	**0.0**
39	ELECTRONICS	0.0	7.4	26.4	0.0
	HHW Subtotal	**0.1**	**0.0**	**0.1**	**0.1**
40	BATTERIES	0.1	0.0	0.0	0.1
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.1	0.0
	Subtotal Other Waste	**48.8**	**117.3**	**35.5**	**5.7**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	33.9	37.5	0.0	0.0
48	C&D MATERIAL	14.0	79.8	27.4	0.0
49	TIRES / RUBBER	0.9	0.0	1.2	0.1
50	OTHER INORGANIC	0.0	0.0	6.9	5.6
	Total	**216.1**	**246.7**	**231.0**	**201.1**

Residential Samples - Raw Data

Date	6/27/2014
County	Washington
Hauler Name	Allied Waste - Acti
Truck #	5961
Truck Type	SL
Ticket #	1474571
Net Weight	8.21
Sequence Number	25

	Category	Total
	Paper Subtotal	**49.9**
1	NEWSPAPER	4.3
2	OFFICE PAPER	0.0
3	MAGAZINES / CATALOGS	5.7
4	GABLE TOP & ASEPTIC CONTAINERS	0.4
5	CARDBOARD /KRAFT PAPER	4.3
6	BOXBOARD/ PAPERBOARD	9.4
7	MIXED RECYCLABLE PAPER	6.9
8	COMPOSTABLE PAPER	16.5
9	R/C PAPER	2.5
	Plastic Subtotal	**42.7**
10	#1 PET BOTTLES	2.7
11	OTHER NON-BOTTLE #1 PET	1.0
12	#2 HDPE BOTTLES/JARS	0.0
13	#2 HDPE NON-BOTTLE AND JARS	1.5
14	#5 PP CONTAINERS	1.5
15	OTHER PLASTIC BOTTLES #3 - #7	0.4
16	#3 PVC RIGID NON - BOTTLE	0.0
17	PLASTIC PACKAGING/CONTAINERS	1.3
18	BULKY RIGID	0.0
19	#6 STYROFOAM	2.5
20	RECOVERABLE FILM & FILM BAGS	2.5
21	FILM: TRASH BAGS	6.9
22	FILM: OTHER	10.8
23	R/C PLASTIC	11.9
	Metal Subtotal	**10.8**
24	ALUMINUM CANS	4.6
25	NON-FERROUS METAL	0.5
26	STEEL CANS	2.3
27	OTHER SCRAP STEEL	0.0
28	R/C METAL	3.5
	Glass Subtotal	**1.9**
29	FOOD & BEVERAGE GLASS	0.0
30	R/C GLASS	1.9
	Organic Subtotal	**88.7**
31	YARD WASTE	0.9
32	FOOD WASTE	58.6
33	LIQUID FOOD WASTE	2.1
34	TEXTILE & LEATHER	14.5
35	DIAPERS & SANITARY NAPKINS	8.5
36	CLEAN LUMBER/PALLETS/CRATES	1.3
37	TREATED WOOD & PLYWOOD	0.0
38	R/C ORGANIC MATERIAL	2.9
	Electronic Subtotal	**8.0**
39	ELECTRONICS	8.0
	HHW Subtotal	**0.0**
40	BATTERIES	0.0
41	MERCURY-CONTAINING ITEMS	0.0
42	PAINTS & SOLVENTS	0.0
43	AUTOMOTIVE PRODUCTS	0.0
44	R/C OTHER HHW	0.0
	Subtotal Other Waste	**5.1**
45	BULKY MATERIAL	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0
47	CARPET & PADDING	0.0
48	C&D MATERIAL	0.0
49	TIRES / RUBBER	0.7
50	OTHER INORGANIC	4.4
	Total	**206.9**

Commercial Samples - Raw Data

	Date	6/23/2014	6/23/2014	6/23/2014	6/23/2014
	County	Washington	Washington	Washington	Ramsey
	Hauler Name	ste Management	d Waste - Action	ennis Sanitation	hland Sanitation
	Truck #	6080	5975	261B	6050
	Truck Type	COMP	FL	FL	FL
	Ticket #	1473167	1473181	1473200	1473253
	Net Weight	8.59	9.26	6.13	10.2
	Sequence Number	26	27	28	29
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**12.4**	**63.8**	**59.6**	**26.2**
1	NEWSPAPER	0.0	0.0	2.2	0.0
2	OFFICE PAPER	0.5	0.5	3.2	0.0
3	MAGAZINES / CATALOGS	0.0	5.2	2.7	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.9	0.3	0.1
5	CARDBOARD /KRAFT PAPER	3.9	3.5	2.9	2.8
6	BOXBOARD/ PAPERBOARD	0.9	1.7	6.1	1.0
7	MIXED RECYCLABLE PAPER	0.0	0.2	4.7	1.5
8	COMPOSTABLE PAPER	2.2	49.6	25.7	19.8
9	R/C PAPER	5.0	2.4	12.0	1.1
	Plastic Subtotal	**15.8**	**30.0**	**49.2**	**21.0**
10	#1 PET BOTTLES	0.8	3.4	16.4	0.0
11	OTHER NON-BOTTLE #1 PET	0.2	0.6	1.7	0.0
12	#2 HDPE BOTTLES/JARS	0.0	2.1	1.3	0.0
13	#2 HDPE NON-BOTTLE AND JARS	0.1	0.1	1.6	0.0
14	#5 PP CONTAINERS	0.1	1.3	2.6	0.0
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.5	0.0	0.8
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.3	0.9	0.1	0.0
18	BULKY RIGID	3.8	1.8	0.8	7.7
19	#6 STYROFOAM	0.1	1.3	2.5	0.8
20	RECOVERABLE FILM & FILM BAGS	2.8	1.3	5.6	3.3
21	FILM: TRASH BAGS	2.4	5.3	9.7	1.0
22	FILM: OTHER	1.2	8.8	5.4	7.6
23	R/C PLASTIC	4.0	2.8	1.6	0.0
	Metal Subtotal	**2.2**	**8.5**	**11.3**	**8.7**
24	ALUMINUM CANS	0.2	4.0	10.4	0.0
25	NON-FERROUS METAL	0.7	1.5	0.2	0.7
26	STEEL CANS	0.0	1.3	0.3	5.5
27	OTHER SCRAP STEEL	1.3	1.5	0.0	0.5
28	R/C METAL	0.0	0.3	0.5	2.1
	Glass Subtotal	**2.2**	**7.7**	**8.0**	**4.2**
29	FOOD & BEVERAGE GLASS	2.2	7.3	6.7	4.2
30	R/C GLASS	0.0	0.4	1.3	0.0
	Organic Subtotal	**120.0**	**93.5**	**68.0**	**101.6**
31	YARD WASTE	0.0	0.0	0.0	0.0
32	FOOD WASTE	0.0	91.4	25.3	70.4
33	LIQUID FOOD WASTE	0.0	0.5	14.7	0.0
34	TEXTILE & LEATHER	0.0	0.3	4.9	0.3
35	DIAPERS & SANITARY NAPKINS	0.0	1.0	10.2	4.7
36	CLEAN LUMBER/PALLETS/CRATES	34.6	0.0	2.8	0.0
37	TREATED WOOD & PLYWOOD	85.4	0.0	0.0	23.9
38	R/C ORGANIC MATERIAL	0.0	0.3	10.2	2.4
	Electronic Subtotal	**0.0**	**0.0**	**0.0**	**12.9**
39	ELECTRONICS	0.0	0.0	0.0	12.9
	HHW Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
40	BATTERIES	0.0	0.0	0.0	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**44.8**	**1.2**	**2.8**	**33.9**
45	BULKY MATERIAL	0.0	0.0	0.0	27.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0	0.0
48	C&D MATERIAL	27.1	0.0	1.0	0.0
49	TIRES / RUBBER	0.6	0.9	1.8	6.6
50	OTHER INORGANIC	17.1	0.3	0.0	0.3
	Total	**197.3**	**204.5**	**198.9**	**208.5**

Commercial Samples - Raw Data

	Date	6/23/2014	6/24/2014	6/24/2014	6/24/2014
	County	Ramsey	Washington	Ramsey	Ramsey
	Hauler Name	Aspen c Services	Other ed Disposal Vas ste Management		
	Truck #	5780	6145	6021	6085
	Truck Type	OT	COMP	FL	SL
	Ticket #	1473296	1473487	1473493	1473459
	Net Weight	4.62	9.27	9.05	3.81
	Sequence Number	30	31	32	33
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**126.0**	**5.0**	**38.7**	**29.3**
1	NEWSPAPER	0.0	0.0	2.3	0.0
2	OFFICE PAPER	0.0	0.0	1.3	0.0
3	MAGAZINES / CATALOGS	0.0	0.0	0.0	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.0	0.0	1.5
5	CARDBOARD /KRAFT PAPER	126.0	0.0	11.4	4.5
6	BOXBOARD/ PAPERBOARD	0.0	1.2	5.2	1.7
7	MIXED RECYCLABLE PAPER	0.0	0.0	2.6	0.6
8	COMPOSTABLE PAPER	0.0	3.8	14.6	19.6
9	R/C PAPER	0.0	0.0	1.4	1.5
	Plastic Subtotal	**0.0**	**26.4**	**22.8**	**38.3**
10	#1 PET BOTTLES	0.0	0.2	0.0	0.5
11	OTHER NON-BOTTLE #1 PET	0.0	0.0	0.3	2.3
12	#2 HDPE BOTTLES/JARS	0.0	0.0	1.5	0.0
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.1	0.1	0.3
14	#5 PP CONTAINERS	0.0	0.4	0.4	3.7
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.2	2.3	0.0
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.0	0.0	0.6	3.1
18	BULKY RIGID	0.0	0.0	1.9	3.2
19	#6 STYROFOAM	0.0	1.1	0.4	0.1
20	RECOVERABLE FILM & FILM BAGS	0.0	0.4	3.7	10.7
21	FILM: TRASH BAGS	0.0	0.2	5.1	4.3
22	FILM: OTHER	0.0	23.2	4.0	6.1
23	R/C PLASTIC	0.0	0.6	2.7	4.1
	Metal Subtotal	**0.0**	**0.1**	**14.1**	**44.4**
24	ALUMINUM CANS	0.0	0.1	0.4	0.3
25	NON-FERROUS METAL	0.0	0.0	0.5	0.1
26	STEEL CANS	0.0	0.0	1.9	0.0
27	OTHER SCRAP STEEL	0.0	0.0	11.4	44.0
28	R/C METAL	0.0	0.0	0.0	0.0
	Glass Subtotal	**3.0**	**0.0**	**5.1**	**0.8**
29	FOOD & BEVERAGE GLASS	3.0	0.0	5.1	0.8
30	R/C GLASS	0.0	0.0	0.0	0.0
	Organic Subtotal	**33.0**	**97.0**	**116.1**	**110.7**
31	YARD WASTE	0.0	0.0	0.3	0.9
32	FOOD WASTE	0.0	0.0	11.4	18.4
33	LIQUID FOOD WASTE	0.0	0.0	3.4	0.3
34	TEXTILE & LEATHER	0.0	0.0	0.3	0.0
35	DIAPERS & SANITARY NAPKINS	0.0	0.0	9.7	0.0
36	CLEAN LUMBER/PALLETS/CRATES	24.5	36.0	0.0	89.8
37	TREATED WOOD & PLYWOOD	0.0	61.0	87.2	1.2
38	R/C ORGANIC MATERIAL	8.5	0.0	3.8	0.2
	Electronic Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
39	ELECTRONICS	0.0	0.0	0.0	0.0
	HHW Subtotal	**0.0**	**0.0**	**0.5**	**0.0**
40	BATTERIES	0.0	0.0	0.0	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.5	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**61.6**	**78.0**	**25.2**	**3.9**
45	BULKY MATERIAL	0.0	78.0	24.5	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0	0.0
48	C&D MATERIAL	0.0	0.0	0.0	0.0
49	TIRES / RUBBER	0.0	0.0	0.7	0.5
50	OTHER INORGANIC	61.6	0.0	0.0	3.4
	Total	**223.6**	**206.4**	**222.4**	**227.3**

Commercial Samples - Raw Data

	Date	6/24/2014	6/24/2014	6/25/2014	6/25/2014
	County	Ramsey	Ramsey	Ramsey	Washington
	Hauler Name	cycling & Refuse	Nitti Sanitation	d Waste - Action	d Waste - Action
	Truck #	5545	6180	5917	5975
	Truck Type	FL	FL	COMP	FL
	Ticket #	1473500	1473612	1473842	1473789
	Net Weight	8.45	3.23	8.7	9.35
	Sequence Number	34	35	36	37
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**87.3**	**21.4**	**0.0**	**39.6**
1	NEWSPAPER	2.5	8.2	0.0	8.8
2	OFFICE PAPER	0.0	0.2	0.0	1.0
3	MAGAZINES / CATALOGS	2.6	1.6	0.0	0.7
4	GABLE TOP & ASEPTIC CONTAINERS	0.2	0.0	0.0	2.1
5	CARDBOARD /KRAFT PAPER	34.3	6.3	0.0	2.3
6	BOXBOARD/ PAPERBOARD	5.9	1.4	0.0	5.6
7	MIXED RECYCLABLE PAPER	3.1	1.3	0.0	7.1
8	COMPOSTABLE PAPER	34.2	1.6	0.0	11.5
9	R/C PAPER	4.6	1.0	0.0	0.7
	Plastic Subtotal	**32.2**	**16.7**	**48.0**	**55.5**
10	#1 PET BOTTLES	7.9	0.2	0.0	1.0
11	OTHER NON-BOTTLE #1 PET	0.4	0.2	0.0	0.5
12	#2 HDPE BOTTLES/JARS	1.8	0.0	0.0	0.6
13	#2 HDPE NON-BOTTLE AND JARS	0.1	0.0	0.0	0.2
14	#5 PP CONTAINERS	2.3	0.3	0.0	2.3
15	OTHER PLASTIC BOTTLES #3 - #7	0.3	0.0	0.0	0.0
16	#3 PVC RIGID NON - BOTTLE	0.0	0.5	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	2.0	0.3	0.0	1.9
18	BULKY RIGID	0.8	0.7	29.5	15.8
19	#6 STYROFOAM	0.6	0.6	0.0	2.2
20	RECOVERABLE FILM & FILM BAGS	4.0	1.4	0.0	3.6
21	FILM: TRASH BAGS	4.7	1.8	0.0	1.7
22	FILM: OTHER	4.4	4.4	5.0	2.3
23	R/C PLASTIC	3.2	6.6	13.5	23.6
	Metal Subtotal	**16.1**	**0.9**	**105.0**	**11.5**
24	ALUMINUM CANS	3.9	0.1	0.0	0.4
25	NON-FERROUS METAL	12.2	0.0	0.0	0.0
26	STEEL CANS	0.0	0.0	0.0	0.3
27	OTHER SCRAP STEEL	0.0	0.8	40.0	10.7
28	R/C METAL	0.0	0.0	65.0	0.2
	Glass Subtotal	**5.4**	**1.4**	**0.0**	**0.7**
29	FOOD & BEVERAGE GLASS	5.2	1.4	0.0	0.0
30	R/C GLASS	0.2	0.0	0.0	0.7
	Organic Subtotal	**72.0**	**34.5**	**65.0**	**72.3**
31	YARD WASTE	0.0	0.0	0.0	0.0
32	FOOD WASTE	28.7	2.4	0.0	58.5
33	LIQUID FOOD WASTE	13.7	0.0	0.0	3.3
34	TEXTILE & LEATHER	0.2	4.9	0.0	3.1
35	DIAPERS & SANITARY NAPKINS	0.0	0.0	0.0	2.1
36	CLEAN LUMBER/PALLETS/CRATES	27.5	17.5	0.0	0.0
37	TREATED WOOD & PLYWOOD	1.5	9.5	65.0	4.9
38	R/C ORGANIC MATERIAL	0.5	0.2	0.0	0.5
	Electronic Subtotal	**0.0**	**11.5**	**15.0**	**16.7**
39	ELECTRONICS	0.0	11.5	15.0	16.7
	HHW Subtotal	**1.4**	**72.5**	**0.0**	**0.5**
40	BATTERIES	0.3	0.0	0.0	0.5
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	1.1	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	72.5	0.0	0.0
	Subtotal Other Waste	**0.5**	**95.1**	**0.0**	**4.9**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	90.0	0.0	0.0
48	C&D MATERIAL	0.0	4.9	0.0	0.0
49	TIRES / RUBBER	0.5	0.2	0.0	4.9
50	OTHER INORGANIC	0.0	0.0	0.0	0.0
	Total	**214.8**	**253.9**	**233.0**	**201.6**

Commercial Samples - Raw Data

	Date	6/25/2014	6/25/2014	6/26/2014	6/26/2014
	County	Washington	Ramsey	Washington	Washington
	Hauler Name	ste Management		Aspen ed Disposal Vas ement	Burnsville
	Truck #	6168	2336	6021	6191
	Truck Type	FL	FL	FL	COMP
	Ticket #	1473877	1473881	1474147	1474131
	Net Weight	10.32	8.03	8.48	6.27
	Sequence Number	38	39	40	41
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**0.0**	**41.0**	**33.8**	**48.3**
1	NEWSPAPER	0.0	1.9	5.6	0.0
2	OFFICE PAPER	0.0	2.1	0.0	13.3
3	MAGAZINES / CATALOGS	0.0	0.4	2.1	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.5	0.4	0.0
5	CARDBOARD /KRAFT PAPER	0.0	7.6	2.7	9.5
6	BOXBOARD/ PAPERBOARD	0.0	3.7	5.8	0.8
7	MIXED RECYCLABLE PAPER	0.0	5.9	3.7	0.5
8	COMPOSTABLE PAPER	0.0	16.6	10.8	23.4
9	R/C PAPER	0.0	2.5	2.8	0.9
	Plastic Subtotal	**0.0**	**31.3**	**36.8**	**52.6**
10	#1 PET BOTTLES	0.0	0.5	3.7	0.3
11	OTHER NON-BOTTLE #1 PET	0.0	0.4	0.2	0.1
12	#2 HDPE BOTTLES/JARS	0.0	4.2	1.4	0.0
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.0	0.0	0.0
14	#5 PP CONTAINERS	0.0	0.3	0.9	0.0
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.5	0.4	0.0
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.0	2.9	2.6	2.0
18	BULKY RIGID	0.0	3.2	0.0	0.0
19	#6 STYROFOAM	0.0	0.8	1.1	3.6
20	RECOVERABLE FILM & FILM BAGS	0.0	2.4	0.0	4.6
21	FILM: TRASH BAGS	0.0	5.0	2.9	6.2
22	FILM: OTHER	0.0	4.5	12.4	35.4
23	R/C PLASTIC	0.0	6.9	11.5	0.5
	Metal Subtotal	**0.0**	**1.6**	**13.2**	**0.7**
24	ALUMINUM CANS	0.0	0.7	2.9	0.1
25	NON-FERROUS METAL	0.0	0.2	0.6	0.0
26	STEEL CANS	0.0	0.8	4.4	0.0
27	OTHER SCRAP STEEL	0.0	0.0	0.0	0.2
28	R/C METAL	0.0	0.0	5.4	0.5
	Glass Subtotal	**0.0**	**0.1**	**5.3**	**0.0**
29	FOOD & BEVERAGE GLASS	0.0	0.0	4.4	0.0
30	R/C GLASS	0.0	0.1	0.9	0.0
	Organic Subtotal	**127.5**	**126.0**	**58.3**	**105.2**
31	YARD WASTE	0.0	0.0	0.0	0.0
32	FOOD WASTE	0.0	33.7	33.7	104.1
33	LIQUID FOOD WASTE	0.0	0.0	1.8	1.1
34	TEXTILE & LEATHER	29.0	1.1	4.5	0.0
35	DIAPERS & SANITARY NAPKINS	0.0	7.9	5.5	0.0
36	CLEAN LUMBER/PALLETS/CRATES	42.5	0.0	7.2	0.0
37	TREATED WOOD & PLYWOOD	56.0	0.0	5.0	0.0
38	R/C ORGANIC MATERIAL	0.0	83.3	0.7	0.0
	Electronic Subtotal	**0.0**	**0.0**	**2.0**	**0.0**
39	ELECTRONICS	0.0	0.0	2.0	0.0
	HHW Subtotal	**0.0**	**0.2**	**0.2**	**0.1**
40	BATTERIES	0.0	0.2	0.2	0.1
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**92.0**	**3.8**	**65.1**	**0.0**
45	BULKY MATERIAL	14.5	0.0	65.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	2.3	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.1	0.0
48	C&D MATERIAL	77.5	0.0	0.0	0.0
49	TIRES / RUBBER	0.0	1.5	0.0	0.0
50	OTHER INORGANIC	0.0	0.0	0.0	0.0
	Total	**219.5**	**203.9**	**214.6**	**206.8**

Commercial Samples - Raw Data

Date	6/30/2014	6/27/2014	6/27/2014	6/27/2014
County	Ramsey	Ramsey	Washington	Ramsey
Hauler Name	Aspen	Nitti Sanitation	Aspen cycling & Refuse	
Truck #	6119	6180	6130	6125
Truck Type	OT	FL	COMP	FL
Ticket #	1474871	1474902	1474495	1474499
Net Weight	3.94	8.88	10.97	6.56
Sequence Number	42	43	44	45

	Category	Total	Total	Total	Total
	Paper Subtotal	**3.7**	**26.9**	**30.1**	**17.2**
1	NEWSPAPER	0.0	1.9	6.2	0.0
2	OFFICE PAPER	0.9	1.0	2.1	0.0
3	MAGAZINES / CATALOGS	0.0	0.2	0.1	2.2
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.3	1.0	1.5
5	CARDBOARD /KRAFT PAPER	1.8	2.8	6.0	5.2
6	BOXBOARD/ PAPERBOARD	0.1	1.1	3.1	2.2
7	MIXED RECYCLABLE PAPER	0.2	5.1	3.6	0.7
8	COMPOSTABLE PAPER	0.6	12.5	8.1	5.5
9	R/C PAPER	0.2	2.2	0.0	0.0
	Plastic Subtotal	**63.9**	**46.6**	**83.8**	**27.3**
10	#1 PET BOTTLES	0.6	2.0	3.1	1.4
11	OTHER NON-BOTTLE #1 PET	0.0	0.2	1.3	0.0
12	#2 HDPE BOTTLES/JARS	0.0	1.5	0.4	2.5
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.1	0.0	0.0
14	#5 PP CONTAINERS	0.1	0.8	0.8	3.6
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.0	0.0	1.1
16	#3 PVC RIGID NON - BOTTLE	0.0	0.4	0.7	3.5
17	PLASTIC PACKAGING/CONTAINERS	0.1	1.4	1.5	0.0
18	BULKY RIGID	0.0	9.0	17.5	7.5
19	#6 STYROFOAM	0.0	1.7	0.0	1.5
20	RECOVERABLE FILM & FILM BAGS	0.3	4.3	1.4	1.3
21	FILM: TRASH BAGS	1.4	1.6	4.5	1.3
22	FILM: OTHER	0.8	10.8	7.1	1.9
23	R/C PLASTIC	60.6	13.1	45.7	2.0
	Metal Subtotal	**4.1**	**2.2**	**3.1**	**11.4**
24	ALUMINUM CANS	0.3	0.5	1.0	1.2
25	NON-FERROUS METAL	0.0	0.6	0.1	1.1
26	STEEL CANS	0.0	1.1	0.2	0.2
27	OTHER SCRAP STEEL	0.0	0.1	1.6	4.6
28	R/C METAL	3.9	0.0	0.3	4.4
	Glass Subtotal	**0.0**	**2.5**	**0.8**	**5.5**
29	FOOD & BEVERAGE GLASS	0.0	1.2	0.8	5.5
30	R/C GLASS	0.0	1.3	0.0	0.0
	Organic Subtotal	**59.0**	**113.3**	**56.4**	**42.2**
31	YARD WASTE	0.0	0.0	24.6	4.6
32	FOOD WASTE	0.5	56.5	11.3	26.8
33	LIQUID FOOD WASTE	0.0	5.0	4.0	0.8
34	TEXTILE & LEATHER	3.5	6.0	0.3	2.6
35	DIAPERS & SANITARY NAPKINS	0.0	8.4	0.4	7.1
36	CLEAN LUMBER/PALLETS/CRATES	55.0	0.0	0.0	0.0
37	TREATED WOOD & PLYWOOD	0.0	33.0	15.7	0.0
38	R/C ORGANIC MATERIAL	0.0	4.4	0.2	0.3
	Electronic Subtotal	**0.0**	**13.0**	**0.0**	**0.0**
39	ELECTRONICS	0.0	13.0	0.0	0.0
	HHW Subtotal	**0.0**	**0.1**	**0.0**	**0.2**
40	BATTERIES	0.0	0.0	0.0	0.1
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.1	0.0	0.1
	Subtotal Other Waste	**86.5**	**0.5**	**43.4**	**109.4**
45	BULKY MATERIAL	86.5	0.0	17.0	107.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	6.0	0.0
48	C&D MATERIAL	0.0	0.0	2.4	2.4
49	TIRES / RUBBER	0.0	0.5	16.8	0.0
50	OTHER INORGANIC	0.0	0.0	1.2	0.0
	Total	**217.2**	**205.0**	**217.5**	**213.1**

Commercial Samples - Raw Data

	Date	6/27/2014	6/28/2014	6/28/2014	6/28/2014
	County	Ramsey	Ramsey	Washington	Ramsey
	Hauler Name	Aspen	Aspen	Troje's Trash	d Waste - Action
	Truck #	2336	5992	6174	5520
	Truck Type	FL	FL	FL	FL
	Ticket #	1474537	1474681	1474687	1474696
	Net Weight	8.99	11.66	4.99	8.88
	Sequence Number	46	47	48	49
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**31.4**	**29.6**	**22.6**	**87.4**
1	NEWSPAPER	0.6	4.1	0.0	20.5
2	OFFICE PAPER	0.0	0.0	0.0	6.6
3	MAGAZINES / CATALOGS	0.0	0.5	0.0	27.3
4	GABLE TOP & ASEPTIC CONTAINERS	1.1	0.3	0.0	0.4
5	CARDBOARD /KRAFT PAPER	3.7	4.3	0.7	9.5
6	BOXBOARD/ PAPERBOARD	3.2	1.4	2.8	5.1
7	MIXED RECYCLABLE PAPER	2.4	0.5	0.3	3.7
8	COMPOSTABLE PAPER	19.2	17.4	18.8	10.9
9	R/C PAPER	1.3	1.2	0.1	3.6
	Plastic Subtotal	**44.1**	**11.5**	**22.6**	**41.6**
10	#1 PET BOTTLES	2.5	1.2	0.1	9.0
11	OTHER NON-BOTTLE #1 PET	0.8	0.4	0.0	0.1
12	#2 HDPE BOTTLES/JARS	1.6	0.3	0.0	2.5
13	#2 HDPE NON-BOTTLE AND JARS	7.5	0.0	0.0	0.0
14	#5 PP CONTAINERS	0.9	1.4	0.9	0.9
15	OTHER PLASTIC BOTTLES #3 - #7	1.2	0.5	0.0	0.4
16	#3 PVC RIGID NON - BOTTLE	0.7	0.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	1.5	1.1	0.6	2.6
18	BULKY RIGID	0.0	0.0	0.0	0.0
19	#6 STYROFOAM	4.3	0.4	0.0	1.7
20	RECOVERABLE FILM & FILM BAGS	2.3	1.9	2.3	5.6
21	FILM: TRASH BAGS	2.3	1.7	5.7	10.3
22	FILM: OTHER	14.1	2.0	12.3	8.7
23	R/C PLASTIC	4.8	0.9	0.9	0.0
	Metal Subtotal	**35.3**	**6.7**	**3.3**	**2.4**
24	ALUMINUM CANS	3.7	0.4	0.1	0.9
25	NON-FERROUS METAL	0.3	0.0	0.0	0.3
26	STEEL CANS	1.9	0.0	0.0	0.0
27	OTHER SCRAP STEEL	7.9	0.8	3.2	0.0
28	R/C METAL	21.5	5.5	0.0	1.3
	Glass Subtotal	**2.4**	**4.6**	**2.1**	**22.2**
29	FOOD & BEVERAGE GLASS	1.3	2.1	2.1	17.2
30	R/C GLASS	1.1	2.5	0.0	5.0
	Organic Subtotal	**97.0**	**171.6**	**94.7**	**50.6**
31	YARD WASTE	0.0	0.0	0.0	0.0
32	FOOD WASTE	75.5	158.3	92.2	27.8
33	LIQUID FOOD WASTE	6.0	2.6	1.1	10.5
34	TEXTILE & LEATHER	3.8	0.3	1.4	5.1
35	DIAPERS & SANITARY NAPKINS	11.7	2.4	0.0	4.3
36	CLEAN LUMBER/PALLETS/CRATES	0.0	8.0	0.0	0.0
37	TREATED WOOD & PLYWOOD	0.0	0.0	0.0	0.0
38	R/C ORGANIC MATERIAL	0.0	0.0	0.0	2.9
	Electronic Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
39	ELECTRONICS	0.0	0.0	0.0	0.0
	HHW Subtotal	**0.5**	**0.0**	**0.0**	**0.4**
40	BATTERIES	0.5	0.0	0.0	0.4
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**0.5**	**1.4**	**88.7**	**4.2**
45	BULKY MATERIAL	0.0	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	2.1
47	CARPET & PADDING	0.0	0.0	32.5	0.0
48	C&D MATERIAL	0.0	0.0	50.0	0.0
49	TIRES / RUBBER	0.5	0.3	6.2	0.0
50	OTHER INORGANIC	0.0	1.1	0.0	2.1
	Total	**211.2**	**225.2**	**234.0**	**208.7**

Commercial Samples - Raw Data

	Date	6/28/2014	6/28/2014	6/28/2014	6/28/2014
	County	Ramsey	Ramsey	Washington	Ramsey
	Hauler Name	d Waste - Action	ed Disposal Vas	d Waste - Action	d Waste - Action
	Truck #	440	5865	5986	5520
	Truck Type	COMP	FL	FL	FL
	Ticket #	1474712	1474707	1474706	1474725
	Net Weight	6.53	15.22	3.85	6.65
	Sequence Number	50	51	52	53
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**29.3**	**54.1**	**39.7**	**32.5**
1	NEWSPAPER	0.4	1.3	0.0	14.3
2	OFFICE PAPER	0.0	0.0	0.0	0.0
3	MAGAZINES / CATALOGS	1.0	7.7	0.0	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.2	0.0	1.6
5	CARDBOARD /KRAFT PAPER	2.2	7.4	39.5	1.2
6	BOXBOARD/ PAPERBOARD	1.3	5.4	0.0	0.4
7	MIXED RECYCLABLE PAPER	10.0	3.3	0.0	0.2
8	COMPOSTABLE PAPER	0.1	28.2	0.2	14.6
9	R/C PAPER	14.4	0.7	0.0	0.3
	Plastic Subtotal	**24.2**	**41.1**	**3.2**	**22.4**
10	#1 PET BOTTLES	0.0	1.5	0.0	2.5
11	OTHER NON-BOTTLE #1 PET	0.0	0.6	0.0	0.4
12	#2 HDPE BOTTLES/JARS	0.0	1.6	0.0	1.8
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.0	0.0	0.0
14	#5 PP CONTAINERS	0.0	4.2	0.0	1.2
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.0	0.0	0.3
16	#3 PVC RIGID NON - BOTTLE	0.0	2.0	0.0	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.3	4.3	0.0	1.1
18	BULKY RIGID	0.0	0.0	0.0	0.4
19	#6 STYROFOAM	0.0	0.9	0.0	0.4
20	RECOVERABLE FILM & FILM BAGS	1.1	2.1	1.7	1.4
21	FILM: TRASH BAGS	0.1	4.6	0.0	2.9
22	FILM: OTHER	0.3	16.4	0.0	8.6
23	R/C PLASTIC	22.5	3.1	1.5	1.6
	Metal Subtotal	**14.1**	**4.2**	**0.0**	**2.7**
24	ALUMINUM CANS	0.0	0.6	0.0	1.9
25	NON-FERROUS METAL	0.0	0.5	0.0	0.0
26	STEEL CANS	2.9	2.6	0.0	0.9
27	OTHER SCRAP STEEL	4.2	0.6	0.0	0.0
28	R/C METAL	7.1	0.0	0.0	0.0
	Glass Subtotal	**1.1**	**14.3**	**0.0**	**1.9**
29	FOOD & BEVERAGE GLASS	0.0	14.3	0.0	1.9
30	R/C GLASS	1.1	0.0	0.0	0.0
	Organic Subtotal	**127.9**	**86.0**	**190.4**	**137.5**
31	YARD WASTE	0.0	0.0	0.0	0.0
32	FOOD WASTE	0.0	74.5	184.4	130.2
33	LIQUID FOOD WASTE	0.0	0.5	0.0	0.0
34	TEXTILE & LEATHER	48.3	3.6	0.0	0.3
35	DIAPERS & SANITARY NAPKINS	0.0	3.2	0.0	3.9
36	CLEAN LUMBER/PALLETS/CRATES	0.7	0.0	6.0	0.0
37	TREATED WOOD & PLYWOOD	75.9	4.2	0.0	0.3
38	R/C ORGANIC MATERIAL	3.1	0.0	0.0	2.9
	Electronic Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
39	ELECTRONICS	0.0	0.0	0.0	0.0
	HHW Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
40	BATTERIES	0.0	0.0	0.0	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**16.1**	**30.1**	**0.0**	**11.3**
45	BULKY MATERIAL	12.5	0.0	0.0	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0	0.0
48	C&D MATERIAL	0.0	0.0	0.0	0.0
49	TIRES / RUBBER	0.9	30.1	0.0	1.9
50	OTHER INORGANIC	2.7	0.0	0.0	9.4
	Total	**212.5**	**229.7**	**233.3**	**208.2**

Commercial Samples - Raw Data

Date	6/30/2014	6/30/2014	6/30/2014
County	Washington	Washington	Ramsey
Hauler Name	ste Management	d Waste - Action	d Waste - Action
Truck #	6133	6145	6041
Truck Type	COMP	OT	COMP
Ticket #	1474891	1474893	1474920
Net Weight	4.1	1.24	10.7
Sequence Number	54	55	56

	Category	Total	Total	Total
	Paper Subtotal	**0.0**	**64.6**	**38.8**
1	NEWSPAPER	0.0	0.3	0.0
2	OFFICE PAPER	0.0	0.5	0.5
3	MAGAZINES / CATALOGS	0.0	0.0	0.0
4	GABLE TOP & ASEPTIC CONTAINERS	0.0	0.3	0.4
5	CARDBOARD /KRAFT PAPER	0.0	45.4	7.0
6	BOXBOARD/ PAPERBOARD	0.0	0.4	3.2
7	MIXED RECYCLABLE PAPER	0.0	0.0	1.9
8	COMPOSTABLE PAPER	0.0	17.7	25.1
9	R/C PAPER	0.0	0.1	0.8
	Plastic Subtotal	**111.5**	**39.7**	**30.2**
10	#1 PET BOTTLES	0.0	13.7	0.9
11	OTHER NON-BOTTLE #1 PET	0.0	0.0	0.0
12	#2 HDPE BOTTLES/JARS	0.0	0.9	0.0
13	#2 HDPE NON-BOTTLE AND JARS	0.0	0.0	0.0
14	#5 PP CONTAINERS	0.0	0.0	1.4
15	OTHER PLASTIC BOTTLES #3 - #7	0.0	0.0	0.0
16	#3 PVC RIGID NON - BOTTLE	0.0	0.4	0.0
17	PLASTIC PACKAGING/CONTAINERS	0.0	4.5	4.0
18	BULKY RIGID	0.0	0.0	0.0
19	#6 STYROFOAM	0.0	3.3	0.0
20	RECOVERABLE FILM & FILM BAGS	0.0	1.4	5.4
21	FILM: TRASH BAGS	0.0	7.1	9.8
22	FILM: OTHER	0.0	3.1	6.7
23	R/C PLASTIC	111.5	5.5	2.1
	Metal Subtotal	**0.0**	**2.1**	**0.6**
24	ALUMINUM CANS	0.0	0.8	0.2
25	NON-FERROUS METAL	0.0	0.2	0.0
26	STEEL CANS	0.0	0.0	0.0
27	OTHER SCRAP STEEL	0.0	1.1	0.4
28	R/C METAL	0.0	0.0	0.0
	Glass Subtotal	**0.0**	**1.0**	**0.3**
29	FOOD & BEVERAGE GLASS	0.0	1.0	0.0
30	R/C GLASS	0.0	0.0	0.3
	Organic Subtotal	**0.0**	**70.7**	**127.9**
31	YARD WASTE	0.0	0.0	0.0
32	FOOD WASTE	0.0	48.6	121.4
33	LIQUID FOOD WASTE	0.0	19.1	0.9
34	TEXTILE & LEATHER	0.0	0.5	0.0
35	DIAPERS & SANITARY NAPKINS	0.0	0.0	0.0
36	CLEAN LUMBER/PALLETS/CRATES	0.0	0.0	0.0
37	TREATED WOOD & PLYWOOD	0.0	0.0	5.6
38	R/C ORGANIC MATERIAL	0.0	2.5	0.0
	Electronic Subtotal	**0.0**	**0.0**	**0.3**
39	ELECTRONICS	0.0	0.0	0.3
	HHW Subtotal	**0.0**	**0.0**	**0.0**
40	BATTERIES	0.0	0.0	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0
	Subtotal Other Waste	**97.5**	**22.5**	**4.4**
45	BULKY MATERIAL	97.5	22.5	0.0
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0
48	C&D MATERIAL	0.0	0.0	0.0
49	TIRES / RUBBER	0.0	0.0	0.4
50	OTHER INORGANIC	0.0	0.0	4.0
	Total	**209.0**	**200.5**	**202.2**

Multi-family Samples - Raw Data

	Date	6/26/14	6/26/14	6/26/14	6/26/14
	County	Ramsey	Ramsey	Ramsey	Ramsey
	Hauler Name	Walters Recycling	Walters Recycling	Walters Recycling	Walters Recycling
	Truck #	(345) 6152	(345) 6152	(345) 6152	(345) 6152
	Truck Type	FL	FL	FL	FL
	Ticket #	1474124	1474124	1474124	1474124
	Net Weight	10	10	10	10
	Sample ID	NRRT-MF-01	NRRT-MF-02	NRRT-MF-03	NRRT-MF-04
	Sequence Number	57	58	59	60
	Category	**Total**	**Total**	**Total**	**Total**
	Paper Subtotal	**63.2**	**25.8**	**61.6**	**17.5**
1	NEWSPAPER	5.4	3.5	1.5	0.0
2	OFFICE PAPER	9.6	0.2	10.7	0.0
3	MAGAZINES / CATALOGS	0.5	0.0	0.4	0.8
4	GABLE TOP & ASEPTIC CONTAINERS	0.5	0.0	6.9	5.3
5	CARDBOARD /KRAFT PAPER	2.9	0.7	7.3	0.0
6	BOXBOARD/ PAPERBOARD	5.3	2.8	6.9	2.1
7	MIXED RECYCLABLE PAPER	10.9	5.7	3.2	2.3
8	COMPOSTABLE PAPER	25.6	10.3	22.3	6.9
9	R/C PAPER	2.7	2.7	2.6	0.2
	Plastic Subtotal	**33.4**	**22.6**	**42.6**	**18.3**
10	#1 PET BOTTLES	6.9	1.5	2.4	0.4
11	OTHER NON-BOTTLE #1 PET	0.7	0.3	1.0	0.3
12	#2 HDPE BOTTLES/JARS	0.4	1.9	2.7	0.0
13	#2 HDPE NON-BOTTLE AND JARS	1.7	0.0	0.9	0.2
14	#5 PP CONTAINERS	1.6	0.3	0.4	0.0
15	OTHER PLASTIC BOTTLES #3 - #7	0.8	0.2	0.3	0.6
16	#3 PVC RIGID NON - BOTTLE	0.0	0.0	0.1	0.0
17	PLASTIC PACKAGING/CONTAINERS	2.9	1.4	1.9	0.0
18	BULKY RIGID	0.0	2.5	5.5	3.6
19	#6 STYROFOAM	1.5	0.6	1.6	1.3
20	RECOVERABLE FILM & FILM BAGS	2.7	1.9	2.4	1.4
21	FILM: TRASH BAGS	1.4	1.4	3.7	2.5
22	FILM: OTHER	7.2	5.8	12.6	2.7
23	R/C PLASTIC	5.9	5.0	7.5	5.5
	Metal Subtotal	**4.3**	**14.3**	**12.5**	**0.8**
24	ALUMINUM CANS	2.7	1.2	0.8	0.2
25	NON-FERROUS METAL	0.3	0.3	0.2	0.1
26	STEEL CANS	0.6	2.1	2.5	0.2
27	OTHER SCRAP STEEL	0.3	5.5	0.3	0.0
28	R/C METAL	0.5	5.3	8.8	0.4
	Glass Subtotal	**8.3**	**2.4**	**1.3**	**0.0**
29	FOOD & BEVERAGE GLASS	7.6	1.2	1.3	0.0
30	R/C GLASS	0.7	1.2	0.0	0.0
	Organic Subtotal	**83.3**	**130.6**	**81.4**	**107.2**
31	YARD WASTE	0.0	18.8	4.3	0.0
32	FOOD WASTE	49.0	13.7	62.6	54.2
33	LIQUID FOOD WASTE	9.3	0.7	6.8	3.0
34	TEXTILE & LEATHER	10.4	11.8	3.8	11.9
35	DIAPERS & SANITARY NAPKINS	11.6	85.2	0.0	0.1
36	CLEAN LUMBER/PALLETS/CRATES	0.0	0.0	2.5	0.0
37	TREATED WOOD & PLYWOOD	0.0	0.2	0.2	36.1
38	R/C ORGANIC MATERIAL	3.0	0.3	1.3	2.0
	Electronic Subtotal	**3.6**	**0.0**	**2.0**	**14.5**
39	ELECTRONICS	3.6	0.0	2.0	14.5
	HHW Subtotal	**0.0**	**0.0**	**0.0**	**0.0**
40	BATTERIES	0.0	0.0	0.0	0.0
41	MERCURY-CONTAINING ITEMS	0.0	0.0	0.0	0.0
42	PAINTS & SOLVENTS	0.0	0.0	0.0	0.0
43	AUTOMOTIVE PRODUCTS	0.0	0.0	0.0	0.0
44	R/C OTHER HHW	0.0	0.0	0.0	0.0
	Subtotal Other Waste	**6.0**	**13.9**	**8.2**	**44.7**
45	BULKY MATERIAL	0.0	0.0	0.0	44.7
46	SMALL HOUSEHOLD APPLIANCES	0.0	0.0	0.0	0.0
47	CARPET & PADDING	0.0	0.0	0.0	0.0
48	C&D MATERIAL	0.0	0.9	5.0	0.0
49	TIRES / RUBBER	0.1	0.2	0.1	0.0
50	OTHER INORGANIC	5.9	12.8	3.1	0.0
	Total	**201.9**	**209.4**	**209.5**	**202.9**