Ohio Statewide Waste Characterization Study – Final Report

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1 EXECUTIVE SUMMARY

The 2024-25 Ohio Statewide Waste Characterization Study, led by the Ohio Environmental Protection Agency (Ohio EPA) and conducted by SCS Engineers, provides a comprehensive analysis of municipal solid waste (MSW) generated across the state. The study aims to inform waste diversion strategies by collecting hand-sort data in the field and analyzing the composition of waste from both Residential and Industrial, Commercial, and Institutional (ICI) sectors at five disposal sites during Fall 2024 and Spring 2025. Key findings are listed in the bullets below:

- Recyclable materials (paper and commingled recyclables) made up approximately 29.7 percent of the overall waste stream.
- Food Waste and Compostable Organics (such as compostable paper) accounted for 22.9 percent of the overall waste stream
- Yard Waste comprised approximately 5.4 percent of the overall waste stream.
- ICI waste had a higher proportion of recyclables (30.9 percent) compared to residential waste (28.4 percent). Most of this difference is due to Uncoated OCC/Kraft Packaging which comprised 7.8 percent of the overall ICI waste stream
- Urban sites like Franklin County Landfill and Rumpke Sanitary Landfill showed lower amounts of recyclable materials, likely due to existing recycling infrastructure.
- Rural sites such as Beech Hollow had higher recyclable content, indicating potential for improved diversion through infrastructure expansion.

Section 3 of this report details the methodology used to conduct the field activities and Section 4 of this report presents the results of the ten weeks spent sampling and sorting waste across the state. Detailed compositions with confidence intervals for overall waste streams, residential waste streams, and ICI waste streams by site are presented in Appendices A, B, and C, respectively. Appendix D contains the material categories and definitions that were used for the sorting events.

This study establishes a baseline for understanding and managing the waste bound for landfills in Ohio, allowing managers to identify actionable strategies to enhance diversion, reduce environmental impacts, and stimulate economic growth through sustainable waste management.

2 INTRODUCTION

In Fall of 2024 Ohio Environmental Protection Agency (Ohio EPA) contracted with SCS Engineers (SCS) to conduct a waste composition study of waste generated throughout the state. The study was designed to gather data via waste characterization field events at five landfills over two seasonal events, which took place in Fall of 2024 and Spring of 2025. Samples were collected from both Residential and Industrial, Commercial and Institutional (ICI) generating sectors. Ohio EPA will utilize the regional waste stream data to maximize diversion efforts for organics and recyclable materials and thereby minimize the tons of waste disposed by landfilling. The data will also be used to evaluate regional changes in the character, quantity, and sources of materials in the State's solid waste stream.

The study consists of two five-week sampling periods during Fall of 2024 and Spring of 2025. The following five waste disposal sites were targeted for sampling during both seasonal events:

- Hancock County Sanitary Landfill at 3763 County Road 140, Findlay, Ohio
- Franklin County Sanitary Landfill at 4239 London Groveport Road, Grove City, Ohio
- Countywide Landfill at 3619 Gracemont Street SW, East Sparta, Ohio
- Beech Hollow Landfill at 28 W Long Road, Wellston, Ohio
- Rumpke Sanitary Landfill at 3800 Struble Road, Cincinnati, Ohio

This report presents the results of both seasonal field efforts.

Sorting activities take place in the fog at Franklin County Landfill.

3 METHODS

This section summarizes the methods used to characterize the waste stream at each of the five sites selected for field events. Samples were collected and characterized over two seasonal five-day periods at each of the sites. Sorting activities were performed by manually sorting samples from municipal solid waste (MSW) into distinct waste categories defined in Appendix D. The sorting methods were based on ASTM D5231 – 92 (2024), Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste. In addition to the physically sorted samples, bulky and self-haul loads that are not suitable for manual sorting were visually characterized at each site during each season.

WASTE SAMPLING

Waste sample collection was performed at each site during normal operating hours of the facility. Each day, vehicles carrying waste were randomly selected for sampling. Drivers of front-load trucks were interviewed to confirm that the waste was collected in Ohio and representative of the desired generating sector. With the assistance of loading equipment, SCS staff gathered a sample from a randomly selected segment of each target load, weighing greater than two hundred pounds. When loading equipment was not available, samples were manually collected by filling trash cans by hand. Over the course of the study the average sample weight was approximately 222 pounds. While collecting samples, two important procedural factors were considered:

- The target vehicle selected for sampling contained MSW that was representative of the type of waste typically generated in that sector; and
- The process of acquiring the waste sample did not alter the apparent MSW composition.

If an item was too large or bulky to be weighed and was in the sampling area, its weight was estimated and added to the sample. This process was repeated until samples had been collected from all the targeted loads. The sampled MSW was placed in trash cans and moved to the sorting site to be manually sorted into the material categories.

NUMBER OF SAMPLES

A total of 72 samples were collected at each site over the course of the two seasonal sampling events. A total of 36 samples were sourced from trucks on Residential routes and 36 were collected from trucks on ICI routes at each of the five sites. Generally front-end load trucks collect ICI trash and rear or side-load trucks collect Residential trash. More than 100 samples from bulky and self-haul loads were visually characterized at each site in addition to the physically sorted samples.

WASTE SORTING

A sorting crew and an SCS Crew Supervisor manually characterized and weighed materials from the samples. The basic procedures and objectives for sorting (as described below) were identical for each sample, each day. Sorting was performed as follows:

1. The sort crew transferred the refuse sample onto the sorting table until it was full and began characterizing the materials. Large or heavy waste items, such as bags of yard waste, were torn open, examined, and then placed directly into the appropriate waste container for subsequent weighing.

2. Plastic bags of refuse were opened, and crew members manually segregated each item of waste, according to material categories defined in Appendix D and placed it in the appropriate waste container. These steps were repeated until the entire sample was sorted.

3. At the completion of sorting, the waste containers were moved to the scale where a representative of SCS weighed each category and recorded the net weight on the Sort Data Sheet. Measurements were made to the nearest 0.02 pounds.

4. This four-step process was repeated until all the day's samples taken at the site were characterized. Waste samples were maintained in as-disposed condition or as close to this as possible until the actual sorting began. Proper site layout and close supervision of sampling was maintained to avoid the need to repeatedly handle sampled wastes.

Members of the sorting crew were fully equipped with high visibility vests, safety footwear, puncture/cut resistant gloves, safety glasses, and Tyvek suits.

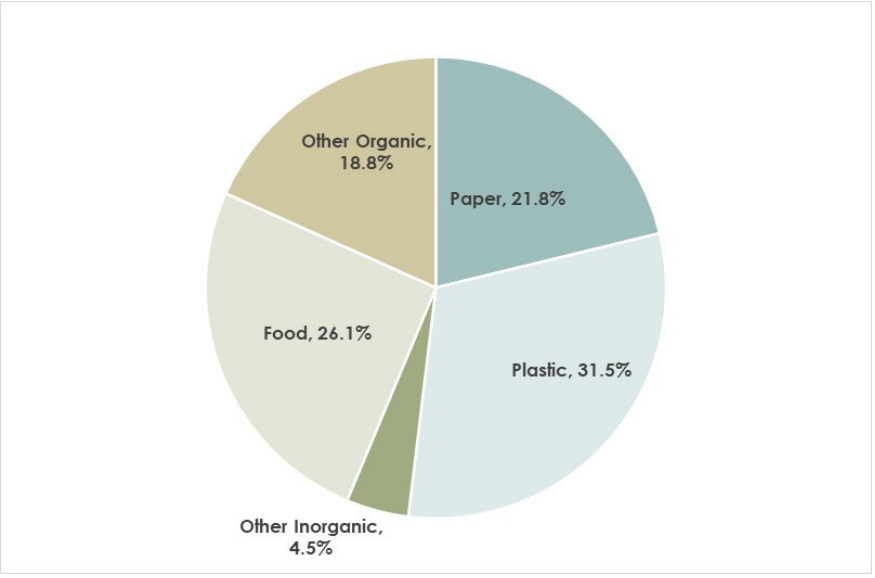
Consistent with good practice in such sampling programs, efforts were made to minimize sampling bias or other impacts on the integrity of the database. To this end, field sampling was coordinated to avoid holidays and other out of the ordinary events.

For visually characterized samples, the sample is first characterized by percent volume, and then converted to percent by weight using density factors for waste materials established by the EPA.

Fines and Uncategorized Materials

During the second season an effort was made to visually estimate and characterize the materials weighed as Fines/Dirt that are too small or indistinguishable to hand-sort into the material categories. These materials are usually left at the end of the sample after the large and easy to categorize materials have been removed from the sorting table. This category comprised about 6.2 percent of the overall waste stream. The results of the visual characterization of the Fines/Dirt are presented in **Exhibit 1**. Please note that these are amounts by volume rather than weight.

Exhibit 1. Visual Categorization of Fines/Dirt



DATA ANALYSIS

Data from the sort was entered into an Excel sheet that calculated the weight of each material category based on the tare weight of the bin that held that material.

Data presented include mean percentages by weight, standard deviations, and statistical confidence intervals (95 percent confidence interval) for each group of data. Derivation of this data is as follows:

$$\textit{Mean}\left(\overline{X}\right) = \sum_{i=1}^{n} x_i * \frac{1}{n};$$

$$\textit{Standard Deviation } (\sigma) = \sqrt{\frac{\left(n\sum x^2\right) - \left(\sum x\right)^2}{n(n-1)}}\text{; and}$$

$$\textit{Upper/Lower Confidence Interval Limits} = \overline{X} \pm \left[1.96 * \left(\frac{\sigma}{\sqrt{n}}\right)\right]$$

Where: n = number of samples and x = sample percentage.

Waste samples were acquired to estimate the waste composition (i.e., the proportion of each waste component present in waste disposed at each site). The mean is the arithmetic average of all data, and the standard deviation is a measure of the dispersion in the data. Together, the mean and standard deviation are used to determine the confidence interval. A 95 percent confidence interval contains the true proportion of a waste component with 95 percent confidence.

4 SUMMARY OF RESULTS

This section contains overall results by site for Residential and ICI generating sectors. Please note that these waste streams are for landfilled waste that is generated in the state of Ohio. The study did not sample from other waste streams or waste that originated out of state. Detailed results for each site with statistical confidence intervals are presented in Appendix A for the Overall waste stream, Appendix B for Residential waste, and Appendix C for ICI. The percentages in the following composition tables report percent by weight for each material component.

THE OVERALL STATEWIDE WASTE STREAM

The overall composition is an equally weighted (by sample, site, and generating sector) average of the 360 waste samples collected over the course of the project. The exhibit below shows the major material types found in the overall statewide waste stream. Recyclable Paper and Commingled Recyclables comprised approximately 29.7 percent of the waste stream. Compostable Organics comprised approximately 22.9 percent.

Exhibit 2. The Overall Landfilled Statewide Waste Stream by Material Type

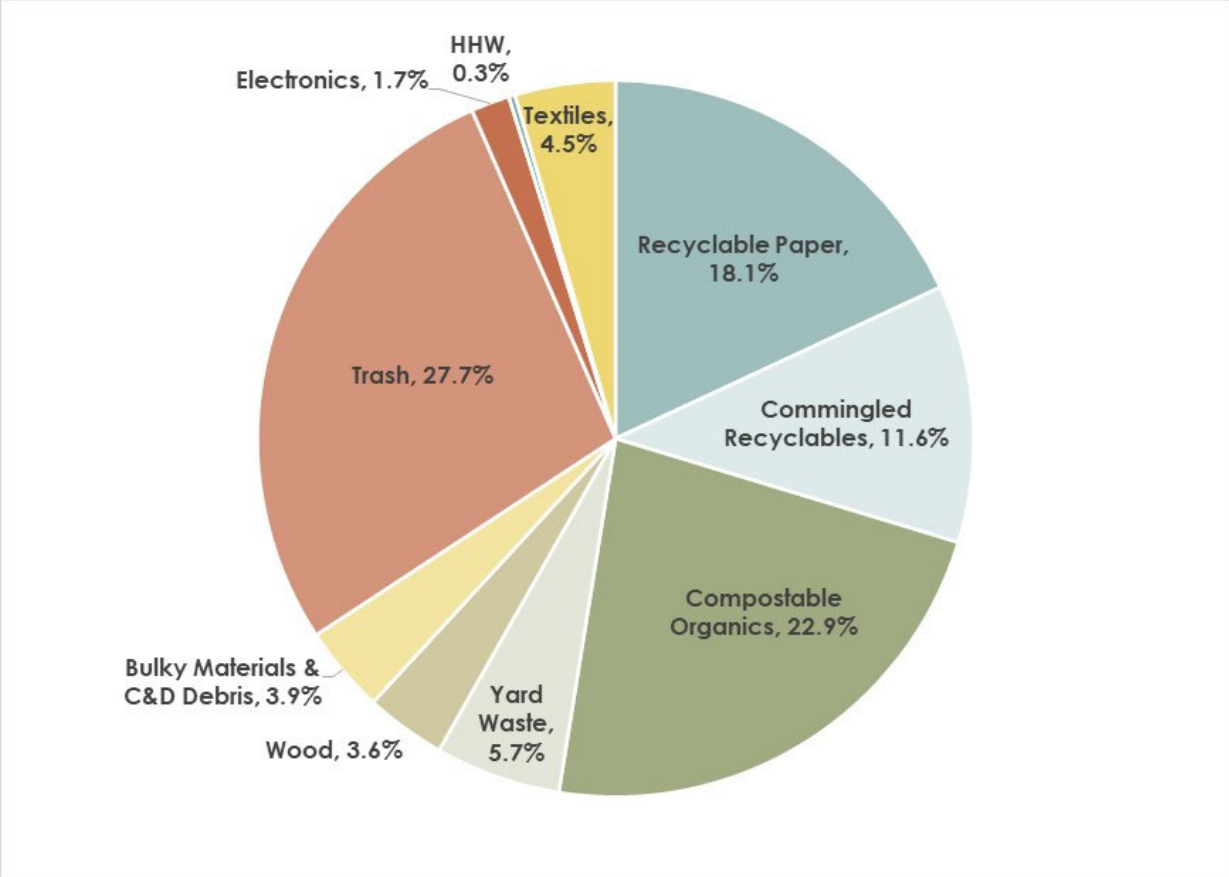


Exhibit 3 on the next three pages presents the detailed composition with confidence intervals for each material category for the overall statewide landfilled waste stream.

Garbage bags are torn open and the contents seperated into the sorting categories.

Exhibit 3. Overall Statewide Waste Composition

Overall Statewide Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.0%	2.7%	1.7%	2.3%
Mixed Paper Products	7.6%	4.2%	7.1%	8.0%
Uncoated OCC/Kraft Packaging	6.3%	5.4%	5.7%	6.9%
Aseptic Cartons / Polycoated	1.8%	1.6%	1.6%	1.9%
Compostable Paper	6.5%	2.6%	6.2%	6.8%
Hard Cover Books	0.1%	0.5%	<0.1%	0.2%
Shredded Paper	0.3%	1.5%	0.2%	0.5%
Remainder/Composite Paper	0.3%	0.6%	0.3%	0.4%
Total Paper	**24.9%**			
Plastic				
#1 PET Bottles/Jars	1.9%	1.0%	1.8%	2.0%
#1 PET Containers	0.8%	0.7%	0.7%	0.8%
#1 PET Clamshells	0.3%	0.2%	0.3%	0.3%
#2 HDPE Containers - Natural	0.5%	0.5%	0.5%	0.6%
#2 HDPE Containers - Colored	0.9%	0.9%	0.8%	1.0%
#4 LDPE Film	1.1%	1.1%	1.0%	1.2%
#5 PP Packaging	1.3%	0.9%	1.2%	1.4%
#6 PS General	0.3%	0.3%	0.3%	0.3%
#6 PS High Impact	0.3%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.5%	0.6%	0.4%	0.6%
#6 Expanded Food	0.9%	0.9%	0.8%	1.0%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.4%	3.1%	4.1%	4.7%
Other Plastics	3.2%	3.0%	2.8%	3.5%
Garbage Bags	3.5%	1.3%	3.3%	3.6%
Total Plastic	**19.9%**			
Food Wastes				
Uncontained Vegetative Food	8.0%	4.6%	7.5%	8.5%
Uncontained Non-Vegetative	3.1%	2.9%	2.8%	3.4%
Unopened Packaged - Metal	0.1%	0.5%	<0.1%	0.2%
Unopened Packaged - Plastic	0.6%	1.0%	0.5%	0.7%
Unopened Packaged - Paperboard	0.1%	0.7%	<0.1%	0.2%
Unopened Packaged - Film Plastic	2.1%	2.4%	1.9%	2.4%
Unopened Packaged - Glass	<0.1%	0.4%	<0.1%	0.1%
Unopened Packaged - Beverages	0.2%	0.7%	0.1%	0.3%
Opened Packaged - Beverages	1.9%	1.7%	1.7%	2.0%
Other Packaged	<0.1%	0.8%	<0.1%	0.1%
Food Processing Wastes	<0.1%	0.2%	<0.1%	<0.1%
Total Food Wastes	**16.2%**			

Overall Statewide Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	5.4%	7.5%	4.7%	6.2%
Other Plant Materials	0.1%	0.9%	<0.1%	0.2%
Woody Material >10"	<0.1%	0.4%	<0.1%	<0.1%
Agricultural Plant Materials	<0.1%	0.8%	<0.1%	0.1%
Pallets and Crates	0.9%	2.8%	0.7%	1.2%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.1%	1.4%	<0.1%	0.3%
Other Organic Material	4.5%	4.3%	4.1%	4.9%
Total Other Organics	**11.2%**			
Glass and Metal				
Glass Containers	2.3%	2.2%	2.1%	2.5%
Other Glass and Ceramics	0.2%	0.7%	0.2%	0.3%
Aluminum Cans	0.9%	0.6%	0.8%	0.9%
Other Aluminum	0.5%	0.9%	0.4%	0.6%
Ferrous Cans	1.1%	1.3%	0.9%	1.2%
Other Ferrous	0.9%	1.4%	0.7%	1.0%
Other Nonferrous Metal	0.1%	0.4%	<0.1%	0.2%
Mixed Metal / Material	0.5%	1.6%	0.3%	0.6%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.2%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.6%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	0.7%	<0.1%	0.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.6%	0.2%	0.3%
Ink Cartridges	<0.1%	0.2%	<0.1%	<0.1%
Mixed Media	<0.1%	0.3%	<0.1%	<0.1%
General Electronics	1.3%	3.1%	1.0%	1.6%
Vaping Devices	<0.1%	0.2%	<0.1%	<0.1%
Total Electronics	**1.7%**			
Consumer Products				
Textiles - Organic	3.5%	4.3%	3.1%	4.0%
Textiles-Synthetic, Mixed Unk	0.5%	1.1%	0.4%	0.6%
Shoes, Purses, Belts	0.5%	1.0%	0.4%	0.6%
Furniture & Mattresses	1.6%	4.3%	1.1%	2.0%
Large Appliances	<0.1%	0.5%	<0.1%	<0.1%
Rubber Products	0.7%	1.8%	0.5%	0.9%
Total Consumer Products	**6.8%**			

Overall Statewide Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	<0.1%	1.2%	<0.1%	0.2%
Fines/Dirt	6.2%	2.4%	6.0%	6.5%
Mixed Residue	1.0%	2.7%	0.7%	1.3%
Total Other Wastes	**7.3%**			
Construction & Demolition Debris				
Treated Wood	0.5%	2.5%	0.3%	0.8%
Untreated Wood	1.4%	3.1%	1.1%	1.8%
Painted/Stained Wood	0.7%	2.2%	0.5%	0.9%
Plastic Lumber	<0.1%	0.3%	<0.1%	<0.1%
Insulation	0.2%	1.3%	<0.1%	0.4%
Gypsum Drywall - Demolition	0.4%	2.0%	0.2%	0.6%
Gypsum Drywall - Clean	<0.1%	1.1%	<0.1%	0.2%
Concrete and Bricks	0.4%	1.8%	0.2%	0.5%
Ceramics/Porcelain	<0.1%	0.1%	<0.1%	<0.1%
Wall-to-wall Carpet	0.5%	2.4%	0.3%	0.8%
Carpet Padding	0.2%	1.2%	<0.1%	0.3%
Asphalt Roofing	<0.1%	0.6%	<0.1%	0.1%
Plastic Flooring	<0.1%	0.4%	<0.1%	<0.1%
C&D PVC	<0.1%	0.5%	<0.1%	0.1%
C&D Glass	0.1%	1.1%	<0.1%	0.2%
C&D Metal	<0.1%	0.3%	<0.1%	<0.1%
Other C&D	0.3%	1.4%	0.2%	0.5%
Total C&DD	**5.0%**			
Household Hazardous Wastes				
Paint	0.2%	1.0%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	0.2%	<0.1%	<0.1%
Other Batteries	<0.1%	0.3%	<0.1%	<0.1%
Other HHW	<0.1%	0.3%	<0.1%	<0.1%
Total HHW	**0.3%**			
Total	**100.0%**			

Notes: Composition based on 360 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

As shown in the preceding exhibit, Uncontained Vegetative Food comprises approximately 8 percent of the waste stream, and Food Wastes in aggregate comprise approximately 16.2 percent of the overall statewide waste stream. Paper materials in aggregate comprise approximately 24.9 percent of the waste stream, with Mixed Paper being the largest contributor to this category group at 7.6 percent.

THE OVERALL WASTE STREAM BY SITE

The overall composition for each site is an average of the 72 residential and ICI samples collected at each of the five sites. These compositions are not weighted, meaning residential and ICI are represented evenly. Detailed compositions with confidence intervals for the overall waste stream for

each site are presented in Appendix A. Exhibit 4 presents a side-by-side summary for each site with the material categories grouped together based on the potential for diversion. The material category groupings are defined in Appendix D.

Exhibit 4. Waste Diversion Potential by Site

As shown above, samples collected from Countywide, Rumpke Sanitary, and Franklin County Landfills contained the least amount of recyclable materials. Total recyclable materials (paper and commingled) ranged from 27.8 percent at Franklin County to 31.8 percent at Beech Hollow Landfill. Compostable Organics ranged from 22.5 percent at Beech Hollow Landfill to 23.5 percent at Countywide Landfill.

Exhibit 5 on the next three pages shows the detailed composition for each material category by percentage weight for the overall waste stream at each site.

Exhibit 5. Overall Waste Compositions by Site

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Paper					
High Grade Office Paper	2.2%	1.9%	1.6%	2.3%	1.8%
Mixed Paper Products	7.7%	6.0%	7.4%	7.9%	8.8%
Uncoated OCC/Kraft Packaging	5.7%	6.7%	6.4%	6.5%	6.2%
Aseptic Cartons / Polycoated	1.8%	2.0%	1.2%	2.5%	1.3%
Compostable Paper	6.6%	7.0%	6.0%	6.6%	6.3%
Hard Cover Books	0.1%	0.1%	0.1%	<0.1%	0.2%
Shredded Paper	0.2%	0.2%	0.3%	0.1%	0.7%
Remainder/Composite Paper	0.4%	0.2%	0.3%	0.3%	0.4%
Total Paper	**24.9%**	**24.1%**	**23.5%**	**26.5%**	**25.7%**
Plastic					
#1 PET Bottles/Jars	1.9%	1.3%	1.7%	1.9%	2.6%
#1 PET Containers	0.8%	0.8%	0.8%	0.8%	0.6%
#1 PET Clamshells	0.4%	0.3%	0.3%	0.3%	0.2%
#2 HDPE Containers - Natural	0.5%	0.5%	0.4%	0.5%	0.8%
#2 HDPE Containers - Colored	1.1%	0.9%	0.5%	1.0%	0.7%
#4 LDPE Film	1.1%	0.9%	1.0%	1.6%	0.9%
#5 PP Packaging	1.6%	1.1%	1.3%	1.2%	1.5%
#6 PS General	0.3%	0.3%	0.4%	0.3%	0.3%
#6 PS High Impact	0.2%	0.3%	0.2%	0.3%	0.3%
#6 PS Expanded Non-Food	0.4%	0.4%	0.6%	0.6%	0.5%
#6 Expanded Food	1.1%	1.0%	0.6%	1.0%	1.0%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	0.1%	0.1%	<0.1%
Single-Layer Flexible Packaging	3.8%	4.1%	5.1%	4.3%	4.7%
Other Plastics	3.9%	3.0%	2.6%	2.6%	3.7%
Garbage Bags	3.2%	3.5%	3.4%	3.8%	3.4%
Total Plastic	**20.2%**	**18.7%**	**19.1%**	**20.2%**	**21.2%**
Food Wastes					
Uncontained Vegetative Food	7.6%	8.2%	8.6%	7.8%	7.7%
Uncontained Non-Vegetative	3.1%	2.8%	3.4%	4.0%	2.1%
Unopened Packaged - Metal	0.1%	<0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Plastic	0.9%	0.5%	0.5%	0.5%	0.6%
Unopened Packaged - Paperboard	<0.1%	0.2%	<0.1%	0.2%	<0.1%
Unopened Packaged - Film Plastic	2.2%	2.0%	2.6%	1.5%	2.2%
Unopened Packaged - Glass	0.2%	<0.1%	0.1%	<0.1%	0.1%
Unopened Packaged - Beverages	0.2%	0.2%	0.2%	0.1%	0.3%
Opened Packaged - Beverages	1.7%	1.8%	1.4%	1.8%	2.7%
Other Packaged	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Food Wastes	**16.0%**	**15.8%**	**17.2%**	**16.0%**	**15.9%**

Exhibit 5. Overall Waste Compositions by Site (continued)

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Other Organics					
Yard Waste	6.7%	4.4%	7.3%	4.8%	4.1%
Other Plant Materials	0.2%	0.2%	<0.1%	<0.1%	0.2%
Woody Material >10"	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Agricultural Plant Materials	0.2%	<0.1%	<0.1%	0.1%	<0.1%
Pallets and Crates	0.8%	0.8%	0.9%	1.3%	0.8%
Manure	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Dead Animals	<0.1%	0.2%	0.2%	<0.1%	0.2%
Other Organic Material	4.9%	3.9%	4.3%	4.7%	4.7%
Total Other Organics	**12.9%**	**9.5%**	**12.7%**	**11.0%**	**10.2%**
Glass and Metal					
Glass Containers	2.4%	2.5%	2.2%	2.1%	2.2%
Other Glass and Ceramics	0.3%	0.3%	0.1%	0.1%	0.3%
Aluminum Cans	0.8%	0.7%	0.9%	0.9%	1.1%
Other Aluminum	0.5%	0.5%	0.6%	0.3%	0.5%
Ferrous Cans	0.8%	0.8%	1.1%	1.1%	1.4%
Other Ferrous	1.0%	1.2%	0.8%	0.7%	0.7%
Other Nonferrous Metal	<0.1%	0.2%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.3%	0.6%	0.5%	0.3%	0.6%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.2%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**	**6.9%**	**6.6%**	**5.8%**	**7.2%**
Electronics					
TVs and Monitors - CRT	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	<0.1%	0.3%	<0.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.2%	0.2%	0.1%	0.3%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	1.3%	2.3%	1.0%	1.0%	1.0%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.6%**	**2.7%**	**1.4%**	**1.5%**	**1.5%**
Consumer Products					
Textiles - Organic	4.1%	3.4%	2.4%	3.3%	4.6%
Textiles-Synthetic, Mixed Unk	0.4%	0.6%	0.4%	0.6%	0.4%
Shoes, Purses, Belts	0.8%	0.3%	0.5%	0.4%	0.6%
Furniture & Mattresses	1.2%	2.1%	2.1%	1.4%	1.0%
Large Appliances	0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Rubber Products	0.3%	0.7%	0.7%	0.7%	1.1%
Total Consumer Products	**6.9%**	**7.1%**	**6.0%**	**6.4%**	**7.7%**

Exhibit 5. Overall Waste Compositions by Site (continued)

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Other Wastes					
Sludges & Other Special Industrial Wastes	0.2%	<0.1%	0.3%	<0.1%	<0.1%
Fines/Dirt	5.0%	6.8%	6.8%	7.2%	5.4%
Mixed Residue	0.6%	1.3%	0.7%	1.3%	0.9%
Total Other Wastes	**5.7%**	**8.1%**	**7.8%**	**8.5%**	**6.2%**
Construction & Demolition Debris					
Treated Wood	0.4%	1.4%	0.2%	0.4%	0.3%
Untreated Wood	1.2%	2.1%	1.6%	1.2%	1.1%
Painted/Stained Wood	0.5%	1.2%	0.9%	0.4%	0.6%
Plastic Lumber	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Insulation	0.1%	0.2%	0.2%	0.4%	0.2%
Gypsum Drywall - Demolition	0.8%	<0.1%	0.5%	0.2%	0.2%
Gypsum Drywall - Clean	<0.1%	<0.1%	<0.1%	<0.1%	0.3%
Concrete and Bricks	0.2%	0.5%	0.7%	0.3%	0.2%
Ceramics/Porcelain	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Wall-to-wall Carpet	0.8%	0.7%	0.5%	0.3%	0.2%
Carpet Padding	0.5%	<0.1%	0.1%	<0.1%	0.2%
Asphalt Roofing	<0.1%	<0.1%	0.2%	<0.1%	0.1%
Plastic Flooring	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
C&D PVC	0.2%	<0.1%	<0.1%	<0.1%	<0.1%
C&D Glass	<0.1%	0.4%	<0.1%	0.1%	<0.1%
C&D Metal	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other C&D	0.2%	0.3%	0.4%	0.4%	0.3%
Total C&DD	**5.0%**	**7.0%**	**5.5%**	**3.9%**	**3.9%**
Household Hazardous Wastes					
Paint	0.2%	0.1%	<0.1%	0.2%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total HHW	**0.3%**	**0.2%**	**0.2%**	**0.3%**	**0.4%**
Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

As seen in the exhibit above, prevalent compostable materials include Vegetative Food Waste (ranging from 7.6 to 8.6 percent), Compostable Paper (ranging from 6.0 to 7.0 percent), and Yard Waste (ranging from 4.4 to 7.3 percent). Prevalent recyclable subcomponents include Mixed Paper Products, Uncoated OCC/Kraft Packaging, and Glass Containers.

THE OVERALL STATEWIDE RESIDENTIAL WASTE STREAM

The overall statewide residential composition is an equally weighted average of the 180 residential waste samples collected during the course of the project. The exhibit below shows the major material types found in the overall statewide waste stream. Recyclable Paper and Commingled Recyclable comprised approximately 28.4 percent of the waste stream. Compostable Organics comprised approximately 22.2 percent.

Exhibit 6. The Overall Statewide Residential Waste Stream by Material Type

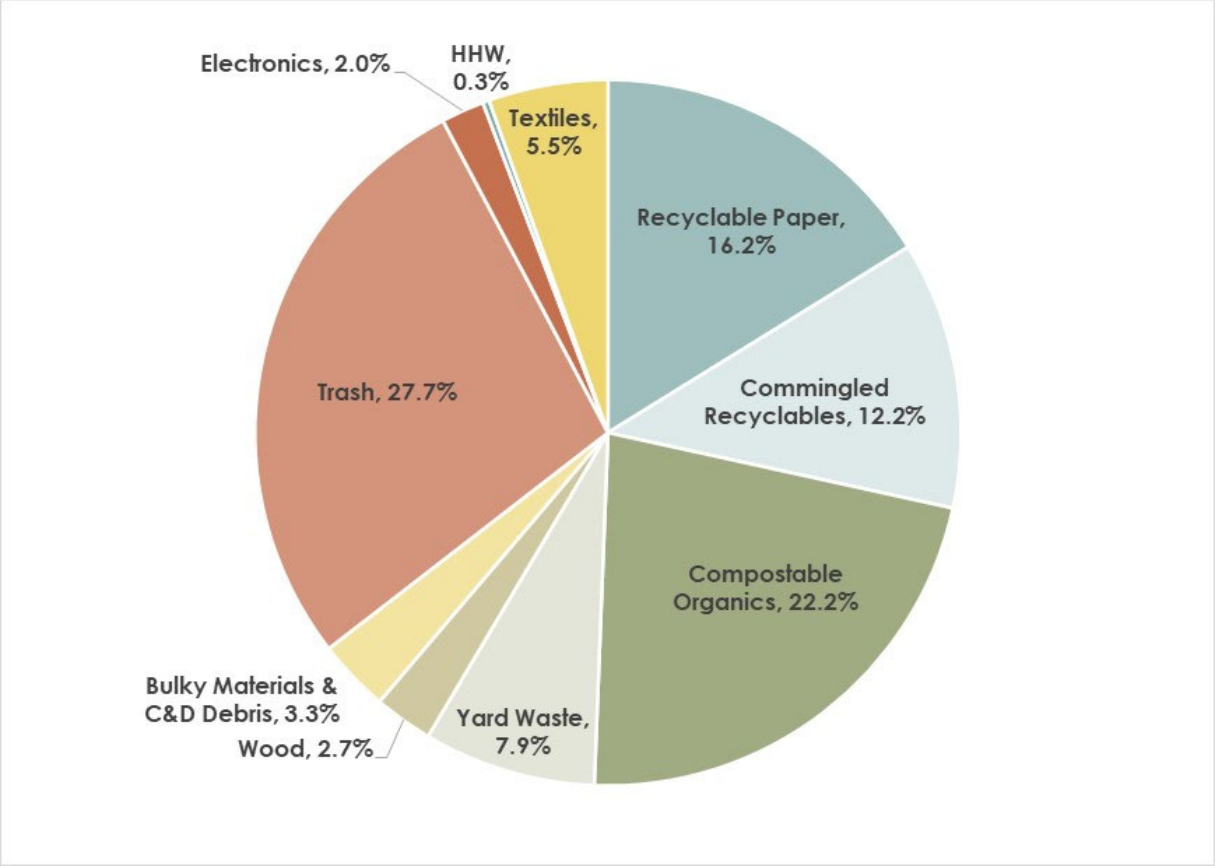


Exhibit 7 on the next three pages presents the detailed composition with confidence intervals for each material category for the overall statewide residential waste stream.

Exhibit 7. Overall Statewide Residential Waste Composition

Overall Statewide Residential Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	1.7%	1.8%	1.5%	2.0%
Mixed Paper Products	7.7%	3.2%	7.2%	8.2%
Uncoated OCC/Kraft Packaging	4.8%	4.0%	4.2%	5.4%
Aseptic Cartons / Polycoated	1.7%	1.5%	1.5%	2.0%
Compostable Paper	6.1%	2.0%	5.9%	6.4%
Hard Cover Books	0.2%	0.5%	<0.1%	0.2%
Shredded Paper	0.1%	0.4%	<0.1%	0.2%
Remainder/Composite Paper	0.3%	0.4%	0.2%	0.3%
Total Paper	**22.6%**			
Plastic				
#1 PET Bottles/Jars	2.1%	1.1%	1.9%	2.2%
#1 PET Containers	0.8%	0.7%	0.7%	0.9%
#1 PET Clamshells	0.3%	0.3%	0.3%	0.4%
#2 HDPE Containers - Natural	0.5%	0.5%	0.4%	0.6%
#2 HDPE Containers - Colored	0.9%	0.7%	0.8%	1.0%
#4 LDPE Film	1.2%	0.8%	1.1%	1.3%
#5 PP Packaging	1.2%	0.7%	1.1%	1.3%
#6 PS General	0.3%	0.2%	0.2%	0.3%
#6 PS High Impact	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.4%	0.4%	0.4%	0.5%
#6 Expanded Food	0.8%	0.5%	0.8%	0.9%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	3.8%	2.3%	3.4%	4.1%
Other Plastics	3.0%	2.6%	2.6%	3.4%
Garbage Bags	3.3%	1.3%	3.1%	3.5%
Total Plastic	**18.9%**			
Food Wastes				
Uncontained Vegetative Food	7.8%	3.4%	7.3%	8.3%
Uncontained Non-Vegetative	2.9%	1.9%	2.6%	3.2%
Unopened Packaged - Metal	0.1%	0.5%	<0.1%	0.2%
Unopened Packaged - Plastic	0.6%	1.0%	0.5%	0.7%
Unopened Packaged - Paperboard	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Film Plastic	2.5%	2.9%	2.1%	2.9%
Unopened Packaged - Glass	0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Beverages	0.1%	0.5%	<0.1%	0.2%
Opened Packaged - Beverages	1.7%	1.4%	1.5%	1.9%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	0.2%	<0.1%	<0.1%
Total Food Wastes	**16.0%**			

Overall Statewide Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	7.7%	8.6%	6.4%	9.0%
Other Plant Materials	0.1%	0.7%	<0.1%	0.2%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	0.6%	<0.1%	0.1%
Pallets and Crates	0.5%	2.1%	0.2%	0.8%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	1.1%	<0.1%	0.2%
Other Organic Material	5.8%	4.5%	5.1%	6.4%
Total Other Organics	**14.3%**			
Glass and Metal				
Glass Containers	2.5%	2.0%	2.2%	2.8%
Other Glass and Ceramics	0.2%	0.5%	0.2%	0.3%
Aluminum Cans	0.9%	0.6%	0.8%	1.0%
Other Aluminum	0.6%	1.1%	0.4%	0.7%
Ferrous Cans	1.2%	1.1%	1.0%	1.3%
Other Ferrous	0.9%	1.1%	0.7%	1.0%
Other Nonferrous Metal	0.1%	0.4%	<0.1%	0.2%
Mixed Metal / Material	0.5%	1.4%	0.2%	0.7%
Aerosol Containers Non-hazardous	0.3%	0.3%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**7.2%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	0.1%	0.9%	<0.1%	0.2%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.7%	0.1%	0.3%
Ink Cartridges	<0.1%	0.2%	<0.1%	<0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	1.4%	2.4%	1.1%	1.8%
Vaping Devices	<0.1%	0.2%	<0.1%	<0.1%
Total Electronics	**1.9%**			
Consumer Products				
Textiles - Organic	4.3%	4.5%	3.7%	5.0%
Textiles-Synthetic, Mixed Unk	0.5%	0.9%	0.4%	0.6%
Shoes, Purses, Belts	0.6%	0.9%	0.5%	0.7%
Furniture & Mattresses	1.1%	3.2%	0.6%	1.5%
Large Appliances	<0.1%	0.7%	<0.1%	0.2%
Rubber Products	0.6%	1.2%	0.4%	0.8%
Total Consumer Products	**7.2%**			

Overall Statewide Residential Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	<0.1%	<0.1%	<0.1%	<0.1%
Fines/Dirt	6.4%	2.1%	6.1%	6.7%
Mixed Residue	0.9%	2.5%	0.5%	1.3%
Total Other Wastes	**7.3%**			
Construction & Demolition Debris				
Treated Wood	0.3%	1.2%	0.1%	0.5%
Untreated Wood	1.3%	2.7%	0.9%	1.7%
Painted/Stained Wood	0.6%	1.5%	0.4%	0.8%
Plastic Lumber	<0.1%	0.1%	<0.1%	<0.1%
Insulation	0.2%	0.9%	<0.1%	0.3%
Gypsum Drywall - Demolition	0.4%	2.3%	<0.1%	0.7%
Gypsum Drywall - Clean	<0.1%	0.1%	<0.1%	<0.1%
Concrete and Bricks	0.4%	1.6%	0.1%	0.6%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.5%	2.2%	0.2%	0.8%
Carpet Padding	0.2%	1.5%	<0.1%	0.5%
Asphalt Roofing	<0.1%	0.8%	<0.1%	0.2%
Plastic Flooring	<0.1%	0.3%	<0.1%	<0.1%
C&D PVC	<0.1%	0.4%	<0.1%	0.1%
C&D Glass	<0.1%	0.5%	<0.1%	0.1%
C&D Metal	<0.1%	0.4%	<0.1%	0.1%
Other C&D	0.3%	1.3%	0.1%	0.5%
Total C&DD	**4.4%**			
Household Hazardous Wastes				
Paint	0.1%	1.0%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	0.3%	<0.1%	0.1%
Other HHW	<0.1%	0.3%	<0.1%	0.1%
Total HHW	**0.3%**			
Total	**100.0%**			

Notes: Composition based on 180 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

THE RESIDENTIAL WASTE STREAM BY SITE

The following exhibits present the compositions of the 36 residential waste samples collected at each site over both seasons. Composition tables with confidence intervals for each site are presented in Appendix B. Exhibit 8 presents a side-by-side summary with the material categories grouped together based on the potential for diversion. The material category groupings are defined in Appendix D.

Exhibit 8. Residential Waste Diversion Potential by Site

As shown above, residential samples collected from Countywide, Rumpke Sanitary, and Franklin County Landfills contained the least amount of recyclable materials. Total recyclable materials (recyclable paper and commingled materials) ranged from 25.6 percent at Franklin County to 31.9 percent at Beech Hollow Landfill. Compostable Organics ranged from 21.2 percent at Beech Hollow Landfill to 22.8 percent at Countywide Landfill.

Exhibit 9 on the next three pages shows the composition for each material category at each site by percentage weight for the residential generating sector.

Exhibit 9. Residential Waste Composition by Site

Material Components	Rumpke LF Cincinnati	Franklin Co Grove City	Countywide East Sparta	Hancock Co Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Paper					
High Grade Office Paper	2.0%	1.5%	1.5%	2.0%	1.6%
Mixed Paper Products	8.0%	5.7%	7.6%	7.9%	9.3%
Uncoated OCC/Kraft Packaging	3.0%	4.6%	5.1%	5.5%	5.6%
Aseptic Cartons / Polycoated	1.7%	2.1%	1.1%	2.7%	1.2%
Compostable Paper	6.1%	7.0%	5.3%	6.5%	5.8%
Hard Cover Books	<0.1%	<0.1%	0.3%	0.1%	0.2%
Shredded Paper	<0.1%	0.1%	<0.1%	<0.1%	<0.1%
Remainder/Composite Paper	0.3%	0.1%	0.3%	0.2%	0.3%
Total Paper	**21.3%**	**21.2%**	**21.2%**	**25.1%**	**24.1%**
Plastic					
#1 PET Bottles/Jars	1.9%	1.6%	2.0%	2.2%	2.8%
#1 PET Containers	0.8%	0.9%	0.8%	0.8%	0.6%
#1 PET Clamshells	0.4%	0.4%	0.3%	0.3%	0.2%
#2 HDPE Containers - Natural	0.4%	0.5%	0.4%	0.5%	0.8%
#2 HDPE Containers - Colored	0.9%	0.9%	0.5%	1.4%	0.6%
#4 LDPE Film	1.3%	1.1%	1.1%	1.5%	1.1%
#5 PP Packaging	1.5%	1.0%	1.3%	1.0%	1.4%
#6 PS General	0.2%	0.3%	0.3%	0.3%	0.3%
#6 PS High Impact	0.3%	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.4%	0.3%	0.6%	0.4%	0.4%
#6 Expanded Food	1.0%	0.8%	0.6%	1.0%	0.8%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	0.1%	0.1%	<0.1%
Single-Layer Flexible Packaging	3.4%	3.4%	3.9%	3.7%	4.5%
Other Plastics	3.7%	2.7%	2.1%	2.6%	3.8%
Garbage Bags	2.9%	3.5%	3.5%	3.7%	3.2%
Total Plastic	**18.9%**	**17.6%**	**17.7%**	**19.7%**	**20.9%**
Food Wastes					
Uncontained Vegetative Food	8.1%	8.1%	8.1%	7.5%	7.2%
Uncontained Non-Vegetative	2.9%	2.9%	3.3%	3.4%	2.1%
Unopened Packaged - Metal	0.2%	0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Plastic	0.8%	0.7%	0.5%	0.4%	0.7%
Unopened Packaged - Paperboard	<0.1%	<0.1%	<0.1%	0.2%	0.1%
Unopened Packaged - Film Plastic	2.7%	2.1%	3.4%	1.7%	2.6%
Unopened Packaged - Glass	0.3%	<0.1%	0.1%	<0.1%	<0.1%
Unopened Packaged - Beverages	0.2%	0.1%	0.1%	0.2%	<0.1%
Opened Packaged - Beverages	1.5%	1.6%	1.3%	1.5%	2.5%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Food Wastes	**16.5%**	**15.7%**	**17.1%**	**15.0%**	**15.5%**

Exhibit 9. Residential Waste Composition by Site (continued)

Material Components	Rumpke LF Cincinnati	Franklin Co Grove City	Countywide East Sparta	Hancock Co Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Other Organics					
Yard Waste	10.3%	6.7%	10.5%	5.9%	5.2%
Other Plant Materials	0.1%	<0.1%	<0.1%	0.1%	0.5%
Woody Material >10"	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Agricultural Plant Materials	<0.1%	<0.1%	<0.1%	0.2%	<0.1%
Pallets and Crates	0.4%	1.0%	0.2%	0.7%	0.3%
Manure	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Dead Animals	<0.1%	<0.1%	0.4%	<0.1%	<0.1%
Other Organic Material	5.5%	6.2%	5.5%	6.4%	5.2%
Total Other Organics	**16.3%**	**13.8%**	**16.6%**	**13.4%**	**11.2%**
Glass and Metal					
Glass Containers	2.3%	2.8%	2.1%	2.6%	2.6%
Other Glass and Ceramics	0.4%	0.2%	0.2%	0.1%	0.3%
Aluminum Cans	0.8%	0.8%	0.9%	1.0%	1.1%
Other Aluminum	0.6%	0.4%	0.8%	0.4%	0.6%
Ferrous Cans	0.9%	0.7%	1.2%	1.2%	1.8%
Other Ferrous	0.9%	1.1%	0.7%	0.8%	0.9%
Other Nonferrous Metal	<0.1%	0.2%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.4%	1.0%	0.3%	0.4%	0.2%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.2%	0.3%	0.3%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**	**7.5%**	**6.7%**	**6.9%**	**8.1%**
Electronics					
TVs and Monitors - CRT	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	<0.1%	0.4%	0.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.3%	0.3%	0.2%	0.2%	0.2%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	1.4%	2.6%	1.2%	0.9%	1.2%
Vaping Devices	<0.1%	0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.8%**	**3.0%**	**1.5%**	**1.6%**	**1.8%**
Consumer Products					
Textiles - Organic	5.2%	3.5%	3.1%	4.1%	5.9%
Textiles-Synthetic, Mixed Unk	0.5%	0.4%	0.4%	0.8%	0.5%
Shoes, Purses, Belts	0.8%	0.4%	0.6%	0.5%	0.7%
Furniture & Mattresses	0.9%	2.2%	0.9%	0.4%	1.0%
Large Appliances	0.3%	<0.1%	<0.1%	<0.1%	<0.1%
Rubber Products	0.4%	0.8%	0.4%	0.4%	1.0%
Total Consumer Products	**8.0%**	**7.3%**	**5.3%**	**6.1%**	**9.1%**

Exhibit 9. Residential Waste Composition by Site (continued)

	Rumpke LF Cincinnati	Franklin Co Grove City	Countywide East Sparta	Hancock Co Findlay	Beech Hollow Wellston
Material Components	Mean Composition by Weight				
Other Wastes					
Sludges & Other Special Industrial Wastes	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Fines/Dirt	5.2%	7.1%	6.9%	7.3%	5.4%
Mixed Residue	0.6%	1.5%	0.7%	1.5%	0.2%
Total Other Wastes	**5.9%**	**8.7%**	**7.5%**	**8.8%**	**5.6%**
Construction & Demolition Debris					
Treated Wood	0.2%	0.9%	<0.1%	<0.1%	0.2%
Untreated Wood	0.9%	1.8%	1.6%	1.2%	0.9%
Painted/Stained Wood	0.7%	0.6%	0.7%	0.4%	0.7%
Plastic Lumber	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Insulation	0.1%	<0.1%	0.3%	0.2%	0.2%
Gypsum Drywall - Demolition	0.7%	<0.1%	1.1%	<0.1%	<0.1%
Gypsum Drywall - Clean	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Concrete and Bricks	0.4%	0.3%	0.5%	0.4%	0.2%
Ceramics/Porcelain	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Wall-to-wall Carpet	0.3%	0.8%	0.8%	0.6%	<0.1%
Carpet Padding	0.9%	0.2%	<0.1%	<0.1%	0.2%
Asphalt Roofing	<0.1%	<0.1%	0.1%	<0.1%	0.2%
Plastic Flooring	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
C&D PVC	0.2%	<0.1%	<0.1%	<0.1%	<0.1%
C&D Glass	<0.1%	0.2%	<0.1%	<0.1%	<0.1%
C&D Metal	<0.1%	<0.1%	<0.1%	<0.1%	0.2%
Other C&D	0.1%	0.4%	0.7%	0.2%	0.2%
Total C&DD	**4.5%**	**5.1%**	**6.1%**	**3.2%**	**3.2%**
Household Hazardous Wastes					
Paint	<0.1%	<0.1%	<0.1%	<0.1%	0.6%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
Other HHW	<0.1%	<0.1%	<0.1%	0.2%	<0.1%
Total HHW	**0.2%**	**<0.1%**	**0.2%**	**0.2%**	**0.7%**
Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Non-Vegetative Food Waste on the sorting table.

As seen in the Exhibit 9, prevalent compostable materials include Vegetative Food Waste (ranging from 7.2 to 8.1 percent), Compostable Paper (ranging from 5.3 to 7.0 percent), and Yard Waste (ranging from 5.2 to 10.5 percent). Prevalent recyclable subcomponents include Mixed Paper Products, Uncoated OCC/Kraft Packaging, and Glass Containers.

A sample being collected at Hancock Landfill.

Sorted Cardboard being weighed.

THE OVERALL STATEWIDE ICI WASTE STREAM

The overall statewide ICI composition is an equally weighted average of the 180 ICI waste samples collected during the course of the project. The exhibit below shows the major material types found in the overall statewide ICI waste stream. Recyclable Paper and Commingled Recyclables comprised approximately 30.9 percent of the waste stream. Compostable Organics comprised approximately 23.5 percent.

Exhibit 10. The Overall Statewide ICI Waste Stream by Material Type

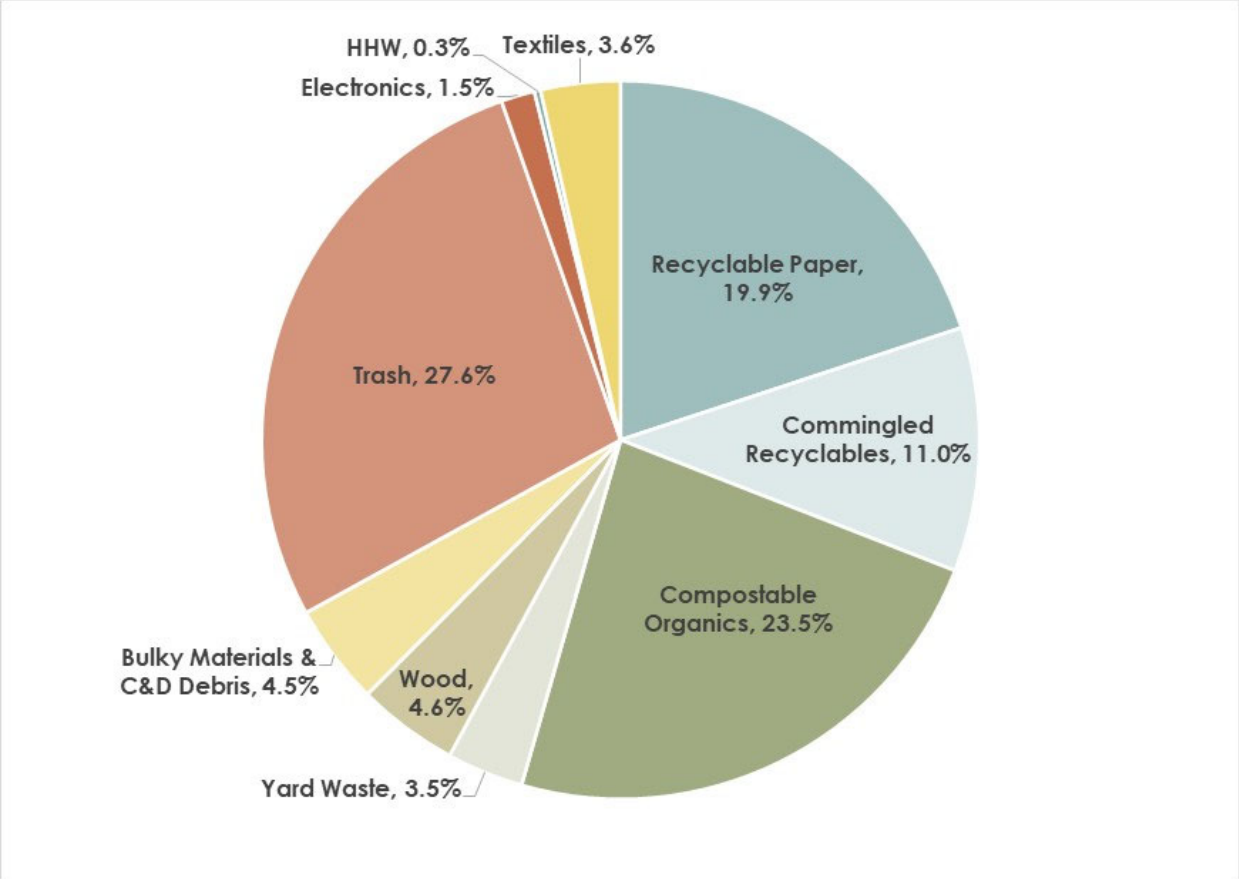


Exhibit 11 on the next three pages presents the detailed composition with confidence intervals for each material category for the overall statewide ICI waste stream.

Exhibit 11. Overall Statewide ICI Waste Composition

Overall Statewide ICI Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.3%	3.3%	1.8%	2.7%
Mixed Paper Products	7.5%	5.0%	6.7%	8.2%
Uncoated OCC/Kraft Packaging	7.8%	6.1%	6.9%	8.7%
Aseptic Cartons / Polycoated	1.8%	1.8%	1.5%	2.1%
Compostable Paper	6.9%	3.1%	6.4%	7.3%
Hard Cover Books	0.1%	0.5%	<0.1%	0.2%
Shredded Paper	0.5%	2.1%	0.2%	0.8%
Remainder/Composite Paper	0.4%	0.8%	0.3%	0.5%
Total Paper	**27.2%**			
Plastic				
#1 PET Bottles/Jars	1.7%	0.9%	1.5%	1.8%
#1 PET Containers	0.7%	0.8%	0.6%	0.9%
#1 PET Clamshells	0.3%	0.2%	0.3%	0.3%
#2 HDPE Containers - Natural	0.6%	0.5%	0.5%	0.6%
#2 HDPE Containers - Colored	0.9%	1.1%	0.7%	1.0%
#4 LDPE Film	1.0%	1.2%	0.8%	1.2%
#5 PP Packaging	1.4%	1.0%	1.3%	1.6%
#6 PS General	0.3%	0.3%	0.3%	0.4%
#6 PS High Impact	0.3%	0.3%	0.2%	0.3%
#6 PS Expanded Non-Food	0.6%	0.7%	0.5%	0.7%
#6 Expanded Food	1.0%	1.2%	0.8%	1.2%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	5.0%	3.7%	4.5%	5.5%
Other Plastics	3.3%	3.4%	2.8%	3.8%
Garbage Bags	3.6%	1.4%	3.4%	3.8%
Total Plastic	**20.8%**			
Food Wastes				
Uncontained Vegetative Food	8.1%	5.6%	7.3%	9.0%
Uncontained Non-Vegetative	3.3%	3.7%	2.7%	3.8%
Unopened Packaged - Metal	<0.1%	0.5%	<0.1%	0.2%
Unopened Packaged - Plastic	0.6%	1.1%	0.4%	0.7%
Unopened Packaged - Paperboard	0.1%	0.9%	<0.1%	0.3%
Unopened Packaged - Film Plastic	1.7%	1.8%	1.5%	2.0%
Unopened Packaged - Glass	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Beverages	0.3%	0.9%	0.1%	0.4%
Opened Packaged - Beverages	2.1%	2.0%	1.8%	2.3%
Other Packaged	<0.1%	1.1%	<0.1%	0.3%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**16.4%**			

Overall Statewide ICI Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	3.2%	5.4%	2.4%	4.0%
Other Plant Materials	0.1%	1.1%	<0.1%	0.3%
Woody Material >10"	<0.1%	0.5%	<0.1%	0.1%
Agricultural Plant Materials	<0.1%	1.0%	<0.1%	0.2%
Pallets and Crates	1.4%	3.3%	0.9%	1.8%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.2%	1.7%	<0.1%	0.4%
Other Organic Material	3.2%	3.7%	2.7%	3.8%
Total Other Organics	**8.2%**			
Glass and Metal				
Glass Containers	2.1%	2.3%	1.7%	2.4%
Other Glass and Ceramics	0.2%	0.8%	0.1%	0.3%
Aluminum Cans	0.8%	0.5%	0.7%	0.9%
Other Aluminum	0.4%	0.5%	0.3%	0.5%
Ferrous Cans	0.9%	1.4%	0.7%	1.1%
Other Ferrous	0.9%	1.6%	0.7%	1.1%
Other Nonferrous Metal	0.1%	0.4%	<0.1%	0.2%
Mixed Metal / Material	0.4%	1.8%	0.2%	0.7%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.1%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	0.3%	<0.1%	<0.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.6%	0.1%	0.3%
Ink Cartridges	<0.1%	0.2%	<0.1%	<0.1%
Mixed Media	<0.1%	0.4%	<0.1%	0.1%
General Electronics	1.2%	3.7%	0.6%	1.7%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.5%**			
Consumer Products				
Textiles - Organic	2.7%	3.9%	2.2%	3.3%
Textiles-Synthetic, Mixed Unk	0.4%	1.2%	0.3%	0.6%
Shoes, Purses, Belts	0.4%	1.0%	0.3%	0.6%
Furniture & Mattresses	2.1%	5.1%	1.3%	2.8%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.8%	2.2%	0.5%	1.1%
Total Consumer Products	**6.5%**			

Overall Statewide ICI Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	0.2%	1.7%	<0.1%	0.4%
Fines/Dirt	6.0%	2.7%	5.6%	6.4%
Mixed Residue	1.0%	3.0%	0.6%	1.5%
Total Other Wastes	**7.2%**			
Construction & Demolition Debris				
Treated Wood	0.8%	3.3%	0.3%	1.3%
Untreated Wood	1.6%	3.5%	1.1%	2.1%
Painted/Stained Wood	0.8%	2.7%	0.4%	1.2%
Plastic Lumber	<0.1%	0.4%	<0.1%	0.1%
Insulation	0.3%	1.7%	<0.1%	0.5%
Gypsum Drywall - Demolition	0.4%	1.5%	0.1%	0.6%
Gypsum Drywall - Clean	0.1%	1.5%	<0.1%	0.3%
Concrete and Bricks	0.4%	1.9%	<0.1%	0.7%
Ceramics/Porcelain	<0.1%	0.2%	<0.1%	<0.1%
Wall-to-wall Carpet	0.5%	2.6%	0.1%	0.9%
Carpet Padding	0.1%	0.8%	<0.1%	0.2%
Asphalt Roofing	<0.1%	0.4%	<0.1%	0.1%
Plastic Flooring	<0.1%	0.5%	<0.1%	0.1%
C&D PVC	<0.1%	0.5%	<0.1%	0.2%
C&D Glass	0.2%	1.5%	<0.1%	0.4%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.3%	1.5%	0.1%	0.6%
Total C&DD	**5.7%**			
Household Hazardous Wastes				
Paint	0.2%	0.9%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	0.3%	<0.1%	<0.1%
Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.2%	<0.1%	<0.1%
Total HHW	**0.3%**			
Total	**100.0%**			

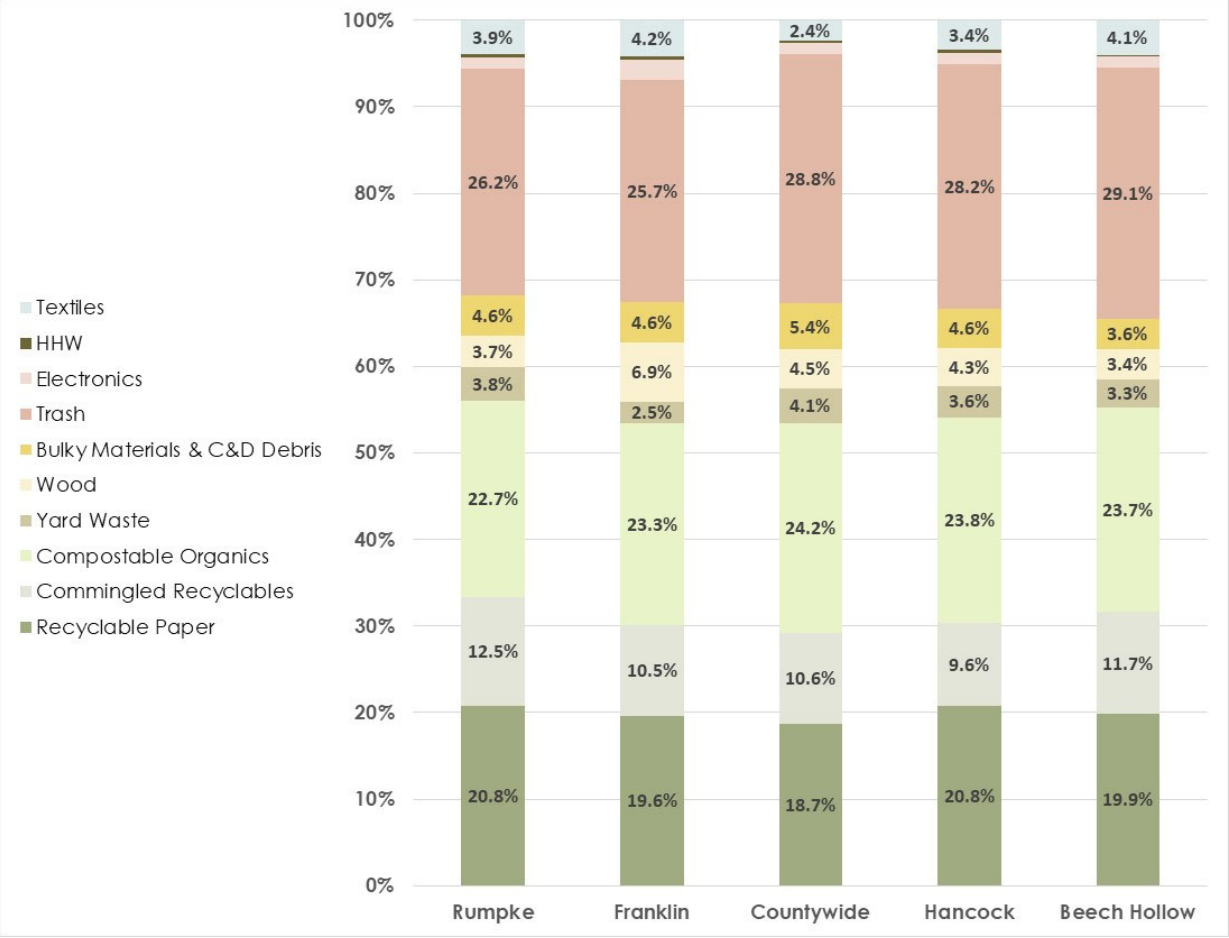
Notes: Composition based on 180 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Aluminum Cans being weighed.

THE ICI WASTE STREAM BY SITE

The following exhibits present the compositions of the 36 ICI waste samples collected at each site. These samples were usually collected from front-end loading trucks. Composition tables with confidence intervals for each site are presented in Appendix C. Exhibit 12 presents a side-by-side summary with the material categories grouped together based on the potential for diversion. The material category groupings are defined in Appendix D.

Exhibit 12. ICI Waste Diversion Potential by Site



As shown above, ICI samples collected from Franklin, Countywide, and Hancock County Landfills contained the least amount of recyclable materials. Total recyclable materials (paper and commingled) ranged from 29.2 percent at Countywide Landfill to 33.3 percent at Rumpke Sanitary Landfill. There were slightly more recyclable materials in ICI waste (30.9 percent) than Residential waste (28.4 percent). Compostable Organics ranged from 23.3 percent at Franklin County Landfill to 24.2 percent at Countywide Landfill. Materials in ICI waste are usually more variable than residential waste due to the wide variety of businesses and land uses involved.

Exhibit 13 on the next three pages shows the detailed results for each material category at each site by percentage weight for the ICI generating sector.

Exhibit 13. ICI Waste Composition

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Paper					
High Grade Office Paper	2.4%	2.4%	1.8%	2.7%	2.0%
Mixed Paper Products	7.4%	6.3%	7.3%	7.9%	8.4%
Uncoated OCC/Kraft Packaging	8.4%	8.7%	7.6%	7.6%	6.7%
Aseptic Cartons / Polycoated	2.0%	1.9%	1.3%	2.4%	1.4%
Compostable Paper	7.1%	7.0%	6.8%	6.7%	6.8%
Hard Cover Books	0.2%	0.1%	<0.1%	<0.1%	<0.1%
Shredded Paper	0.4%	0.2%	0.6%	0.2%	1.3%
Remainder/Composite Paper	0.5%	0.3%	0.3%	0.3%	0.6%
Total Paper	**28.4%**	**26.9%**	**25.8%**	**27.8%**	**27.3%**
Plastic					
#1 PET Bottles/Jars	1.9%	1.1%	1.5%	1.6%	2.4%
#1 PET Containers	0.8%	0.7%	0.8%	0.8%	0.6%
#1 PET Clamshells	0.3%	0.3%	0.3%	0.3%	0.3%
#2 HDPE Containers - Natural	0.5%	0.5%	0.4%	0.5%	0.9%
#2 HDPE Containers - Colored	1.4%	1.0%	0.6%	0.6%	0.8%
#4 LDPE Film	0.8%	0.8%	0.9%	1.7%	0.8%
#5 PP Packaging	1.7%	1.2%	1.2%	1.4%	1.6%
#6 PS General	0.3%	0.3%	0.4%	0.3%	0.2%
#6 PS High Impact	0.2%	0.3%	0.3%	0.3%	0.2%
#6 PS Expanded Non-Food	0.5%	0.5%	0.6%	0.7%	0.5%
#6 Expanded Food	1.2%	1.3%	0.6%	0.9%	1.1%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	0.1%	0.1%	<0.1%
Single-Layer Flexible Packaging	4.3%	4.8%	6.2%	4.9%	4.8%
Other Plastics	4.0%	3.4%	3.1%	2.6%	3.7%
Garbage Bags	3.5%	3.5%	3.4%	3.9%	3.6%
Total Plastic	**21.5%**	**19.8%**	**20.5%**	**20.7%**	**21.6%**
Food Wastes					
Uncontained Vegetative Food	7.0%	8.4%	9.1%	8.0%	8.1%
Uncontained Non-Vegetative	3.3%	2.7%	3.6%	4.6%	2.1%
Unopened Packaged - Metal	<0.1%	<0.1%	<0.1%	0.2%	0.2%
Unopened Packaged - Plastic	0.9%	0.4%	0.4%	0.6%	0.5%
Unopened Packaged - Paperboard	0.1%	0.3%	<0.1%	0.1%	<0.1%
Unopened Packaged - Film Plastic	1.8%	1.8%	1.8%	1.4%	1.8%
Unopened Packaged - Glass	<0.1%	<0.1%	0.1%	<0.1%	0.1%
Unopened Packaged - Beverages	0.3%	0.3%	0.2%	<0.1%	0.6%
Opened Packaged - Beverages	1.9%	2.0%	1.5%	2.0%	3.0%
Other Packaged	<0.1%	<0.1%	0.4%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Food Wastes	**15.6%**	**15.9%**	**17.3%**	**17.0%**	**16.4%**

Exhibit 13. ICI Waste Composition (continued)

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Organics					
Yard Waste	3.0%	2.1%	4.1%	3.6%	3.1%
Other Plant Materials	0.3%	0.4%	<0.1%	<0.1%	<0.1%
Woody Material >10"	0.1%	<0.1%	<0.1%	<0.1%	0.1%
Agricultural Plant Materials	0.4%	<0.1%	<0.1%	<0.1%	<0.1%
Pallets and Crates	1.2%	0.7%	1.5%	2.0%	1.4%
Manure	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Dead Animals	<0.1%	0.5%	<0.1%	<0.1%	0.4%
Other Organic Material	4.4%	1.6%	3.1%	3.0%	4.1%
Total Organics	**9.4%**	**5.2%**	**8.8%**	**8.6%**	**9.2%**
Glass and Metal					
Glass Containers	2.5%	2.2%	2.3%	1.6%	1.8%
Other Glass and Ceramics	0.2%	0.5%	<0.1%	<0.1%	0.3%
Aluminum Cans	0.8%	0.5%	0.8%	0.7%	1.1%
Other Aluminum	0.4%	0.5%	0.5%	0.3%	0.3%
Ferrous Cans	0.7%	0.8%	1.1%	1.0%	1.1%
Other Ferrous	1.2%	1.3%	0.8%	0.5%	0.6%
Other Nonferrous Metal	<0.1%	0.2%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.3%	0.2%	0.6%	0.2%	0.9%
Aerosol Containers Non-hazardous	0.2%	0.1%	0.1%	0.2%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**	**6.3%**	**6.4%**	**4.7%**	**6.4%**
Electronics					
TVs and Monitors - CRT	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.1%	0.2%	0.2%	<0.1%	0.4%
Ink Cartridges	<0.1%	0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
General Electronics	1.2%	2.0%	0.9%	1.1%	0.7%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.4%**	**2.3%**	**1.3%**	**1.4%**	**1.2%**
Consumer Products					
Textiles - Organic	2.9%	3.2%	1.7%	2.6%	3.3%
Textiles-Synthetic, Mixed Unk	0.3%	0.7%	0.4%	0.5%	0.3%
Shoes, Purses, Belts	0.7%	0.3%	0.3%	0.3%	0.5%
Furniture & Mattresses	1.6%	2.0%	3.3%	2.4%	1.1%
Large Appliances	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Rubber Products	0.3%	0.7%	1.0%	1.0%	1.2%
Total Consumer Products	**5.8%**	**6.9%**	**6.6%**	**6.8%**	**6.3%**

Exhibit 13. ICI Waste Composition (continued)

Material Components	Rumpke LF Cincinnati	Franklin Grove City	Countywide East Sparta	Hancock Findlay	Beech Hollow Wellston
	Mean Composition by Weight				
Other Wastes					
Sludges & Other Special Industrial Wastes	0.3%	<0.1%	0.6%	<0.1%	<0.1%
Fines/Dirt	4.7%	6.4%	6.7%	7.0%	5.3%
Mixed Residue	0.6%	1.1%	0.7%	1.1%	1.6%
Total Other Wastes	**5.6%**	**7.5%**	**8.1%**	**8.1%**	**6.9%**
Construction & Demolition Debris					
Treated Wood	0.6%	1.9%	0.4%	0.7%	0.4%
Untreated Wood	1.6%	2.4%	1.6%	1.3%	1.2%
Painted/Stained Wood	0.3%	1.9%	1.0%	0.4%	0.5%
Plastic Lumber	0.2%	<0.1%	<0.1%	<0.1%	<0.1%
Insulation	0.1%	0.3%	<0.1%	0.7%	0.2%
Gypsum Drywall - Demolition	0.9%	0.1%	<0.1%	0.3%	0.5%
Gypsum Drywall - Clean	<0.1%	<0.1%	<0.1%	<0.1%	0.6%
Concrete and Bricks	<0.1%	0.7%	0.9%	0.1%	0.2%
Ceramics/Porcelain	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Wall-to-wall Carpet	1.3%	0.7%	0.3%	<0.1%	0.2%
Carpet Padding	0.1%	<0.1%	0.2%	<0.1%	0.3%
Asphalt Roofing	<0.1%	<0.1%	0.2%	<0.1%	<0.1%
Plastic Flooring	<0.1%	<0.1%	0.3%	<0.1%	<0.1%
C&D PVC	0.1%	<0.1%	<0.1%	0.1%	<0.1%
C&D Glass	<0.1%	0.5%	<0.1%	0.3%	<0.1%
C&D Metal	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other C&D	0.4%	0.2%	0.1%	0.5%	0.4%
Total C&DD	**5.5%**	**8.8%**	**5.0%**	**4.5%**	**4.5%**
Household Hazardous Wastes					
Paint	0.2%	0.2%	<0.1%	0.3%	<0.1%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Total HHW	**0.4%**	**0.3%**	**0.2%**	**0.4%**	**0.2%**
Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

An ICI load with large amounts of Cardboard at Hancock County Landfill

As seen in the preceding exhibit, prevalent compostable materials include Vegetative Food Waste (ranging from 7.0 to 9.1 percent), Compostable Paper (ranging from 6.7 to 7.1 percent), and Non-Vegetative Food Waste (ranging from 2.0 to 4.6 percent). Prevalent recyclable subcomponents include Mixed Paper Products, Uncoated OCC/Kraft Packaging, and Office Paper. Recyclable paper was notably higher when comparing ICI waste (19.9 percent overall) to Residential waste (16.2 percent overall).

Non-Vegetative Food.

Sorted Vegetative Food.

VISUAL CHARACTERIZATION – BULKY/SELF-HAUL/C&DD

The following exhibit presents the composition of visually characterized waste loads from each site during both seasonal event. These loads are from a variety of vehicles including roll-offs, dump trucks, box trucks, and self-haul vehicles. Generally, these loads contain large bulky materials that are not feasible to manually sort and weigh. More than 100 samples were characterized at each site over both seasons. Density factors are generally sourced from the EPA[1]. In some cases where an established density factor is not listed it was estimated based on the density of comparable materials. As shown in the exhibit, dense materials such as soil or sludges often comprise a large amount of the total by weight but lesser amounts by volume. Both the percent by volume and percent by weight are reported for each material category.

A sailboat is disposed of at Beech Hollow Landfill.

A load awaiting visual characterization.

[1] https://www.epa.gov/sites/default/files/2016-03/documents/conversions.pdf

Exhibit 14. Visual Characterization – Bulky/Self-Haul/C&DD

		Rumpke LF Cincinnati		Franklin Co Grove City		Countywide East Sparta		Hancock Co Findlay		Beech Hollow Wellston	
Material Components	**Density lbs/cy**	**Percent Volume**	**Percent Weight**	**Percent Volume**	**Percent Weight**	**Percent Volume**	**Percent Weight**	**Percent Volume**	**Percent Weight**	**Percent Volume**	**Percent Weight**
Soil	2392	12.3%	50.7%	1.2%	12.2%	5.7%	<0.1%	2.4%	19.3%	6.0%	8.8%
Sludges/Industrial Waste	1418	7.2%	17.8%	3.1%	17.8%	15.3%	35.3%	0.9%	4.1%	9.1%	61.3%
Bagged MSW	167	11.9%	3.4%	11.2%	7.7%	9.5%	8.2%	17.5%	9.7%	29.9%	4.2%
Gypsum Drywall - Demo	620	1.3%	1.4%	2.4%	6.0%	2.7%	0.7%	6.2%	12.7%	2.5%	<0.1%
C&D Glass	1971	0.2%	0.7%	<0.1%	<0.1%	0.5%	<0.1%	1.2%	8.1%	<0.1%	<0.1%
Concrete and Bricks	1855	1.7%	5.3%	0.6%	4.7%	0.5%	5.5%	1.2%	7.2%	0.4%	0.5%
Pallets/Crates	169	5.3%	1.5%	13.2%	9.1%	14.4%	18.8%	4.9%	2.8%	3.2%	0.2%
Furniture/Mattresses	169	5.6%	1.6%	7.0%	4.8%	5.3%	2.7%	4.5%	2.5%	8.8%	1.7%
Woody Materials	1080	0.7%	1.4%	1.3%	5.6%	<0.1%	<0.1%	0.6%	2.1%	1.9%	8.7%
OCC Cardboard	100	15.0%	2.6%	22.4%	9.2%	10.3%	8.0%	8.1%	2.7%	5.9%	1.2%
Asphalt Roofing	419	4.5%	3.2%	1.0%	1.7%	0.4%	<0.1%	4.3%	5.9%	3.4%	1.7%
Other C&D	167	0.1%	<0.1%	1.6%	1.1%	3.1%	2.8%	5.1%	2.9%	<0.1%	<0.1%
Manure - Agricultural	675	1.3%	1.5%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Treated Wood	169	3.0%	0.9%	7.3%	5.0%	7.0%	7.2%	10.5%	5.9%	3.6%	2.4%
Untreated Wood	169	6.7%	2.0%	1.9%	1.3%	2.0%	0.7%	3.3%	1.8%	6.1%	3.7%
Painted/Stained Wood	169	4.6%	1.3%	1.6%	1.1%	2.0%	1.1%	3.7%	2.1%	2.5%	1.0%
Yard Waste	250	4.5%	2.0%	2.2%	2.3%	1.3%	<0.1%	1.3%	1.0%	2.5%	1.6%
Rigid Plastics	50	3.4%	0.3%	7.9%	1.6%	4.6%	1.9%	10.6%	1.8%	3.3%	0.2%
Mixed Metal/Material	143	2.4%	0.6%	4.2%	2.5%	1.2%	0.5%	1.5%	0.7%	0.9%	<0.1%
Ceramics/Porcelain	1214	<0.1%	0.1%	0.1%	0.7%	<0.1%	<0.1%	<0.1%	0.4%	0.4%	<0.1%
Wall-to-wall Carpet	147	2.8%	0.7%	1.3%	0.8%	0.7%	0.2%	1.0%	0.5%	1.8%	0.1%
C&D Metal	143	<0.1%	<0.1%	<0.1%	<0.1%	1.1%	0.5%	1.3%	0.6%	0.9%	0.5%
C&D PVC	341	<0.1%	<0.1%	<0.1%	<0.1%	0.6%	0.3%	<0.1%	<0.1%	<0.1%	<0.1%
Large Appliances	145	<0.1%	<0.1%	0.6%	0.4%	1.0%	<0.1%	0.3%	0.1%	<0.1%	<0.1%
Electronics	378	<0.1%	<0.1%	0.2%	0.2%	0.1%	<0.1%	0.5%	0.6%	0.1%	0.2%
Plastic Lumber	169	<0.1%	<0.1%	0.7%	0.5%	0.5%	<0.1%	0.5%	0.3%	<0.1%	<0.1%
Expanded Polystyrene	32	0.2%	<0.1%	0.5%	<0.1%	3.0%	0.7%	0.2%	<0.1%	<0.1%	<0.1%
Carpet Padding	62	2.8%	0.3%	1.2%	0.3%	0.5%	<0.1%	0.7%	0.1%	1.7%	<0.1%
Gypsum Drywall - Clean	620	<0.1%	<0.1%	<0.1%	0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Agricultural Waste	313	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	0.1%	<0.1%
Plastic Flooring	50	<0.1%	<0.1%	0.3%	<0.1%	0.1%	<0.1%	<0.1%	<0.1%	0.2%	<0.1%
Insulation	17	0.4%	<0.1%	0.3%	<0.1%	1.6%	<0.1%	0.8%	<0.1%	2.1%	<0.1%
Dead Animals	1418	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Residue	167	<0.1%	<0.1%	3.2%	2.2%	3.3%	3.4%	3.9%	2.1%	1.6%	1.2%
Other Wastes	167	1.9%	0.5%	1.4%	1.0%	1.5%	1.5%	3.0%	1.6%	1.0%	0.6%
TOTALS		**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

As seen in the Exhibit above, Soil, Sludge/Industrial Waste, and Bagged MSW were common components of the bulky/self-haul/C&DD waste stream. Other common components include the wood categories including pallets and crates. Cardboard is a prevalent material by volume, but due to its low weight, is a relatively low percentage of the waste stream when looking at the proportion by weight. By weight, OCC Cardboard ranged from 2.6 percent at Rumpke Sanitary Landfill to Franklin County Landfill to 9.2 percent at Franklin County landfill.

5 WASTE DIVERSION MODELING

Version 16 of the U.S. Environmental Protection Agency (EPA)'s Waste Reduction Model (WARM) was used to estimate potential greenhouse gas emissions reductions, energy savings, and economic impacts from diverting waste from landfilling in Ohio. WARM is a tool developed by the U.S. Environmental Protection Agency (EPA) to help analyze the potential environmental and economic impacts of various waste management practices.

Using waste composition data from the results discussed in the previous section and the total amount of waste disposed in Ohio in 2023, the amount of waste landfilled annually was estimated from each material category. The waste categories used in WARM sometimes differ than the ones used in the waste sorts, so the categories were matched as best as possible. The matching categories can be seen on the table below.

Table 1. WARM Categories and Ohio Waste Sort Categories

Material Type	Waste Categories	
	EPA WARM Model	**Ohio Waste Characterization**
Paper	Corrugated Containers	Uncoated OCC/Kraft Packaging
	Office Paper	High Grade Office Paper
	Textbooks	Hard Cover Books
	Mixed Paper (general)	Mixed Paper Products
	Mixed Paper (primarily residential)	Remainder/Composite Paper
Food Waste	Food Waste	Uncontained Non-Vegetative
		Unopened Packaged – Metal
		Unopened Packaged – Plastic
		Unopened Packaged – Paperboard
		Unopened Packaged – Film Plastics
		Unopened Packaged – Glass
		Unopened Packaged – Beverages
		Opened Packaged – Beverages
		Other Packaged
		Food Processing Wastes
	Fruits and Vegetables	Uncontained Vegetative Food
Yard Trimmings	Yard Trimmings	Yard Waste
		Other Plant Materials
		Woody Materials >10"
		Agricultural Materials

Material Type	Waste Categories	
	EPA WARM Model	Ohio Waste Characterization
Mixed Plastics	HDPE	#2 HDPE Containers – Natural
		#2 HDPE Containers – Colored
	LDPE	#4 LDPE Film
		Multi-Layer Flexible Packaging
		Single Layer Flexible Packaging
		Garbage Bags
	PET	#1 PET Bottles/Jars
		#1 PET Containers
		#1 PET Clamshells
	PP	#5 PP Packaging
	PS	#6 PS General
		#6 PS High Impact
		#6 PS Expanded Non-Food
		#6 Expanded Food
	PVC	C&D PVC
	Mixed Plastics	Other Plastics
Bioplastics	PLA	#7 Compostable
Electronics	Flat-Panel Displays	TVs and Monitors – LCD/LED/Plasma
	CRT Displays	TVs and Monitors - CRT
	Mixed Electronics	Data Bearing Electronics
		Electronic Equipment Cables & Wires
		Ink Cartridges
		Mixed Media
		General Electronics
		Vaping Devices
Metals	Aluminum Cans	Aluminum Cans
	Mixed Metals	Other Aluminum
		Ferrous Cans
		Other Ferrous
		Other Ferrous Metal
		Mixed Metal/Material
		Aerosol Containers Non-hazardous
		Aerosol Containers Hazardous
Glass	Glass	Glass Containers
		Other Glass and Ceramics
		C&D Glass

Material Type	Waste Categories	
	EPA WARM Model	**Ohio Waste Characterization**
Construction Materials	Asphalt Shingles	Asphalt Roofing
	Carpet	Wall-to-wall Carpet
		Carpet Padding
	Dimensional Lumber	Treated Wood
		Untreated Wood
		Painted/Stained Wood
	Drywall	Gypsum Drywall – Demolition
		Gypsum Drywall – Clean
	Fiberglass Insultation	Insulation
	Vinyl Flooring	Plastic Flooring
Mixed Recyclables	Mixed Recyclables	Aseptic Cartons/Polycoated
		Shredded Paper
Mixed Organics	Mixed Organics	Compostable Paper
		Pallets and Crates
		Manure
		Dead Animals
		Other Organic Material
Mixed MSW	Mixed MSW	Aseptic Cartons/Polycoated
		Shredded Paper
		Rubber Products
		Sludges & Other Special Industrial Wastes
		Fines/Dirt
		Mixed Residue
		Textiles – Organic
		Textiles – Synthetic, Mixed Unk.
		Shoes, Purses, Belts
		Furniture & Mattresses
		Large Appliances
		Plastic Lumber
		Concrete and Bricks
		Ceramics/Porcelain
		Other C&D
		Paint
		Fluorescent Lighting
		Li-ion Batteries
		Other Batteries
		Other HHW

Three diversion scenarios were analyzed using WARM to determine the greenhouse gas, energy, and economic impacts from diverting waste from landfills via recycling, composting, and source reduction. The scenarios are described in further detail below.

- **Baseline Scenario:** All waste materials are landfilled.
- **Scenario 1 - Recycling**: All Corrugated Containers, Office Paper, Textbooks, Mixed Paper (general), HDPE, PET, Polypropylene (PP), Aluminum Cans, Mixed Metals, and Mixed Recyclables are recycled. Remaining materials, including Mixed Paper (primarily residential), continue to be landfilled.
- **Scenario 2 - Composting**: All Food Waste, Fruits and Vegetables, Yard Trimmings, PLA, and Mixed Organics are composted.
- **Scenario 3 – Source Reduction**: Other potential divertibles (including Textiles, Electronics, Appliances, and plastic film) were diverted from the landfill. This scenario assumes environmental and economic benefits from reduced landfilling.

The EPA WARM model requires other data inputs to personalize greenhouse gas estimates that reflect different waste management situations and locations. Ohio receives a yearly rainfall average between 20 and 40 inches, so a moderate moisture condition was assumed. This influences the decay rate for the decomposition of waste. Default/national average estimates were used as inputs for landfill gas collection systems, which capture significant portions greenhouse gases emissions from decaying materials in the landfill.

Each diversion scenario was run against a baseline scenario, which assumes landfilling of all waste materials generated. The results of the diversion scenarios are discussed below.

BASELINE SCENARIO

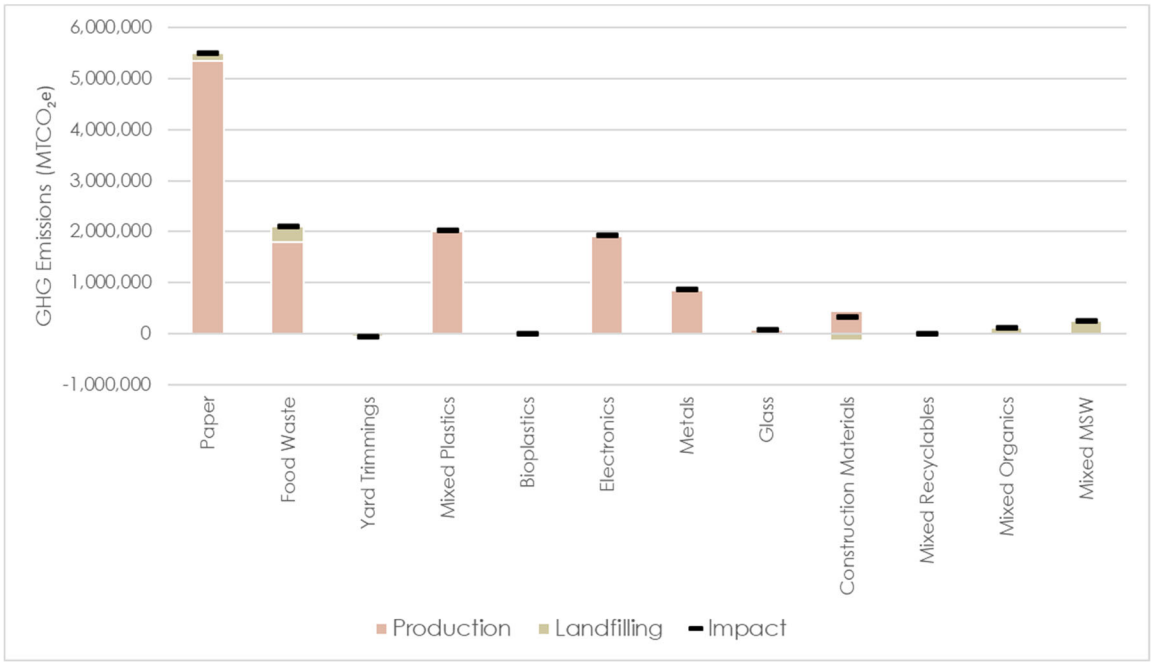
The baseline scenario assumes that the materials found in the waste continue to be landfilled rather than diverted. The results from this section will be used to compare with the diversion scenarios.

GHG Emission Impacts

Greenhouse gas emissions are measured in metric tons of carbon dioxide equivalent ($MTCO_2e$). As seen in **Exhibit 15**, the greenhouse gas emissions from the production of materials is presented along with the greenhouse gas emissions from the end-of -life management of these materials, in this case, landfilling.

The final impact is the sum of emissions emitted from the production of materials and the end-of-life management of those materials. In some cases, the end-of-life management option saves or reduces the emissions of greenhouse gases, which reduces the impact of the lifespan of that material. The impact in these cases reduces the lifetime greenhouse gas emissions.

Exhibit 15. Current Greenhouse Gas Impact from Production and Landfilling

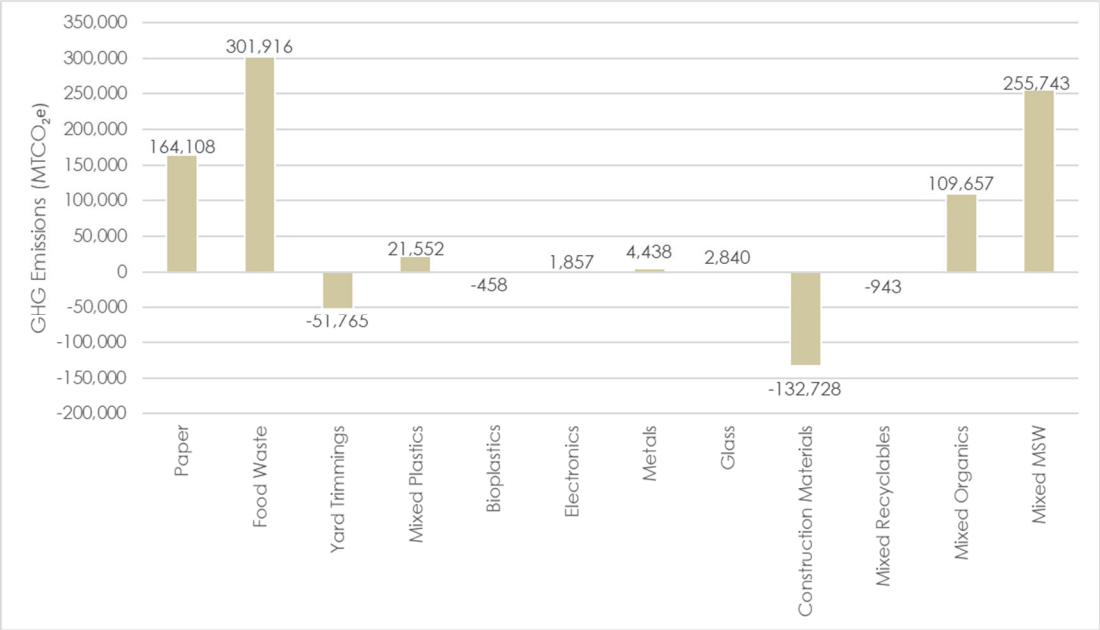


Note: Impact is the sum of Production and End-of-Life Management (Landfilling)

As shown above, most of the emissions from each category come from their production. The largest total emissions came from the production of paper products. The total amount of greenhouse gas emissions from this scenario is just over 13,000,000 $MTCO_2e$.

Greenhouse gas emisisons related to landfilling as the sole end-of-life management option total approximately 676,200 $MTCO_2e$ and are presented in **Exhibit 16**. Yard Trimmings, Bioplastics, Construction Materials, and Mixed Recyclables show a reduction (negative) in greenhouse gas emissions which is due to the use of landfill gas collection systems at most landfills in Ohio.

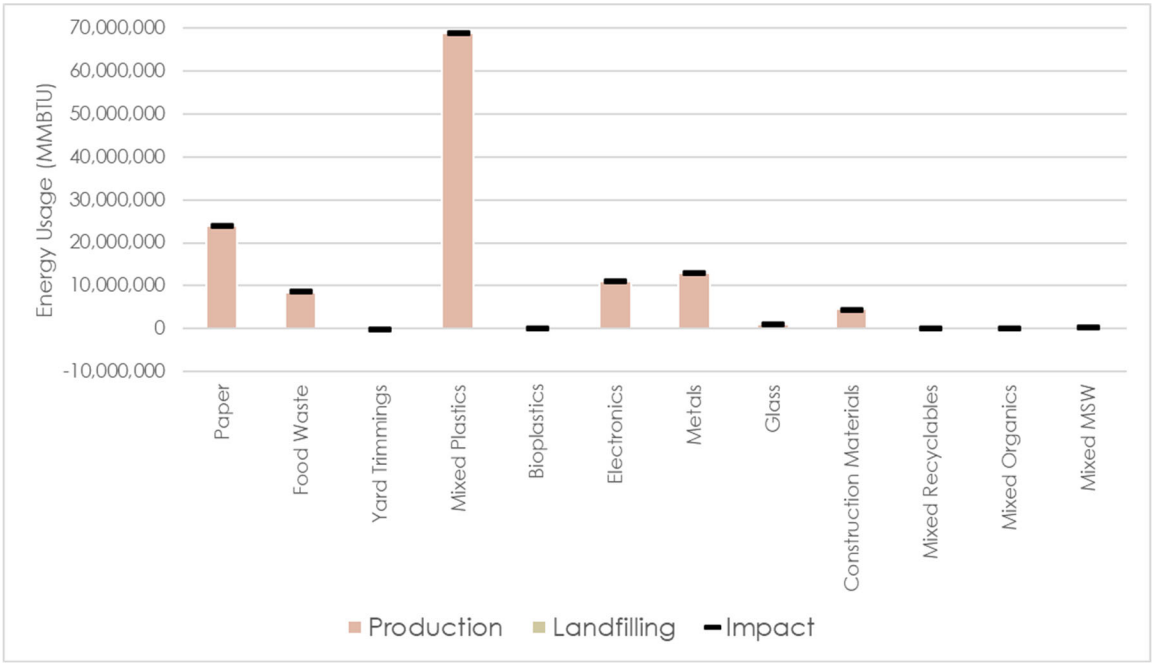
Exhibit 16. Current Greenhouse Gas Impact from Landfilling



Current Energy Use

The energy use from the production and landfilling of materials generated in Ohio can be seen in the following exhibit. Energy is measured in millions of BTUs (MMBTU).

Exhibit 17. Current Energy Consumption from Production and Landfilling

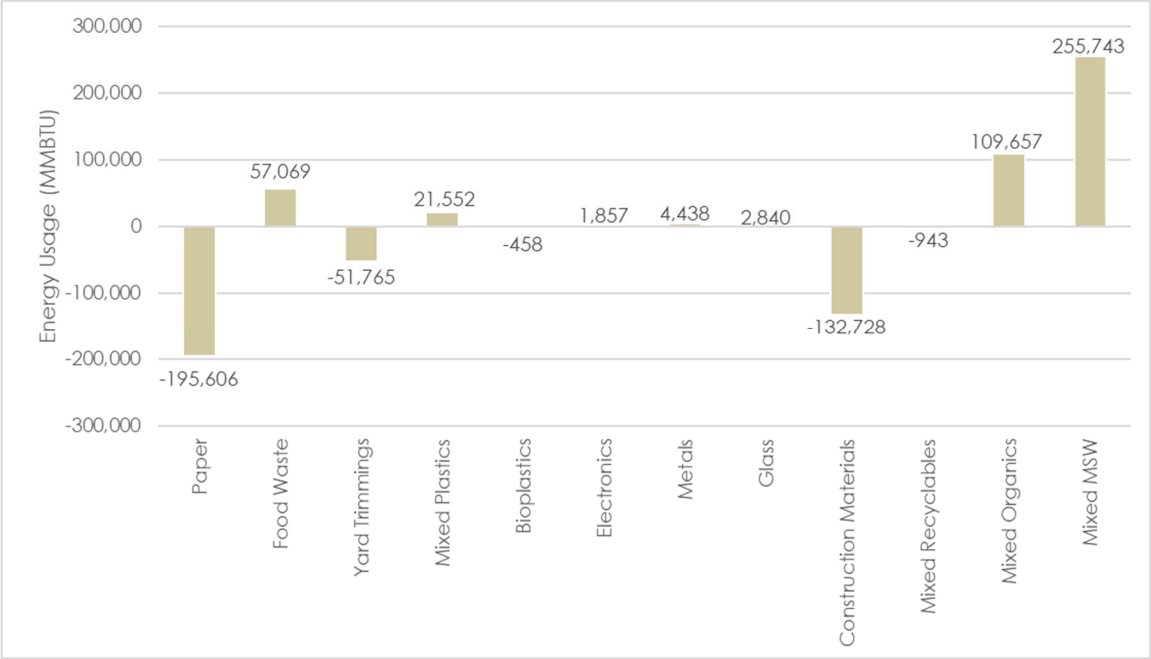


Note: Impact is the sum of Production and End-of-Life Management (Landfilling)

Similarly to greenhouse gas emissions, the production of materials uses the most energy in most categories. The highest energy usage comes from the production of mixed plastics. The total energy consumption from this scenario is about 131 million MMBTUs.

Landfilling as the end-of-life management option for all waste materials has an energy consumption of 71,660 MMBTUs. **Exhibit 18** presents the energy consumption by material category for landfilling.

Exhibit 18. Current Energy Consumption from Landfilling



Economic Impacts

WARM also estimates the economic impacts of the end-of-life management of these materials. **Table 2** shows these economic impacts for the categories modeled.

Table 2. Economic Impacts from the Baseline Scenario

Material	Total Labor Hours	Total Wages ($)
Paper	1,084,665	$ 37,579,621
Food Waste	1,077,082	$ 37,316,885
Yard Trimmings	377,293	$ 13,071,805
Mixed Plastics	1,325,154	$ 45,911,672
Bioplastics	347	$ 12,018
Electronics	114,184	$ 3,956,069
Metals	272,907	$ 9,455,232
Glass	174,613	$ 6,049,690
Construction Materials	275,101	$ 9,531,247

Material	Total Labor Hours	Total Wages ($)
Mixed Recyclables	138,509	$ 4,798,824
Mixed Organics	803,821	$ 27,849,428
Mixed MSW	1,004,534	$ 34,803,371
Total	**6,648,211**	**$ 230,335,860**

SCENARIO 1: DIVERTING RECYCLABLE MATERIALS

Scenario 1 assumes that the same amount of waste is generated in the state, but the following materials are recycled instead of landfilled:

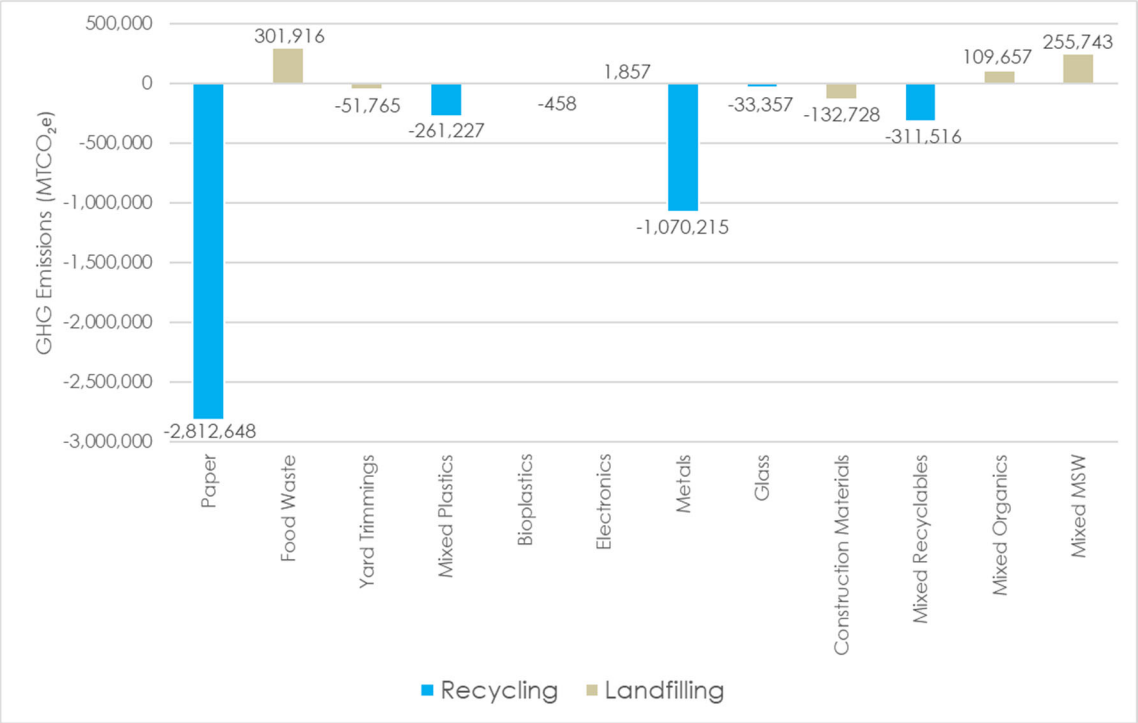
- High Grade Office Paper
- Mixed Paper Products
- Uncoated OCC/Kraft Packaging
- Aseptic Cartons/Polycoated
- Hard Cover Books
- Shredded Paper
- #1 PET Bottles/Jars
- #1 PET Containers
- #1 PET Clamshells
- #2 HDPE Containers - Natural
- #2 HDPE Containers – Colored
- #5 PP Packaging
- Glass Containers
- Aluminum Cans
- Other Aluminum
- Ferrous Cans
- Other Ferrous
- Other Nonferrous Metal
- Aerosol Containers Non-hazardous
- Aerosol Containers Hazardous

The materials above were grouped to match the material categories used by the EPA WARM model (see Table 1 for a crosswalk between the material categories used by this study to the material categories used by the EPA WARM model).

GHG Emission Impacts

The greenhouse gas emissions from the complete recycling of the materials identified above and the landfilling of other materials in Ohio can be seen in the figure below. Greenhouse gas emissions are measured in metric tons of carbon dioxide equivalent ($MTCO_2e$). This scenario results in a greenhouse gas reduction of 4,680,958 $MTCO_2e$. Because the total amount of materials remains the same, greenhouse gas emissions and energy use from the production of the materials were not graphed.

Exhibit 19. GHG Emissions from Scenario 1

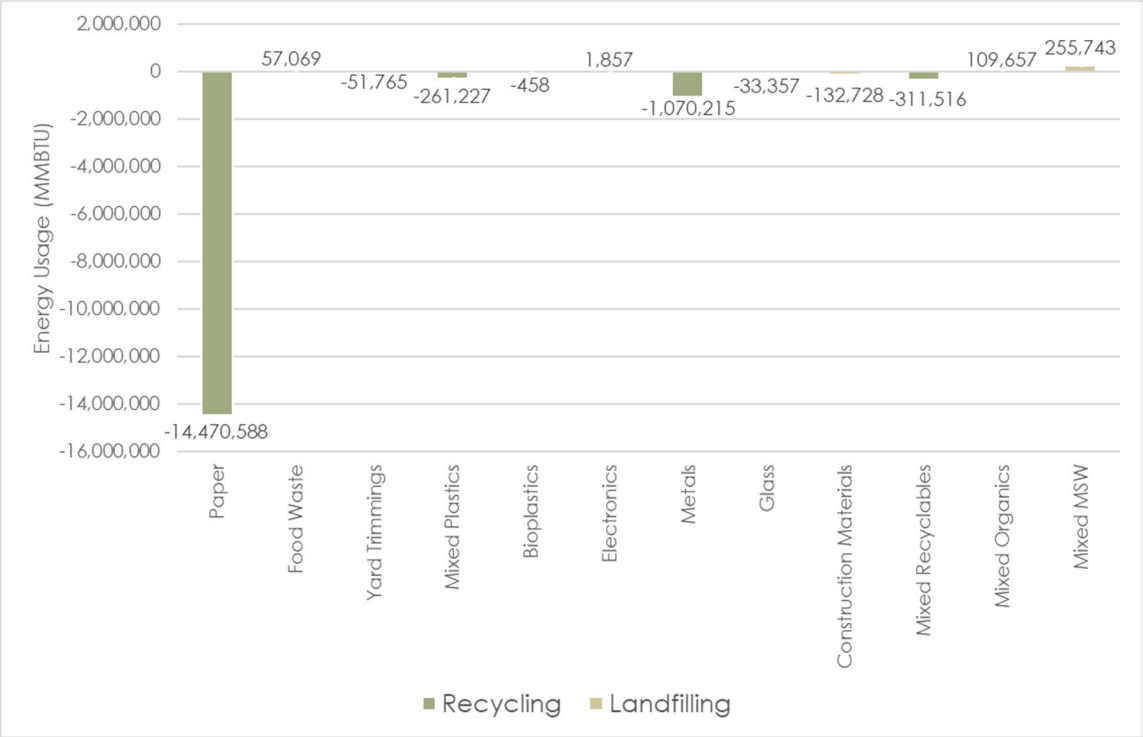


As shown in the graph above, diversion of the specified recyclable materials would significantly decrease greenhouse gas emissions from paper, metals, and mixed recyclables. The total amount of greenhouse gas emissions from this scenario is about 8.4 million $MTCO_2e$ which is 4.7 million $MTCO_2e$ less than the baseline scenario.

Energy Use

The energy use from the recycling and landfilling of materials generated in Ohio can be seen in the following figure. Energy is measured in millions of BTUs (MMBTU). This scenario results in an energy reduction of 15,979,185 MMBTU.

Exhibit 20. Energy Consumption from Recycling



Economic Impacts

Estimated economic impacts of the end-of-life management of the materials can be seen in the figure below. The total labor hours increased by over 400 percent from the baseline scenario, while the total wages increased by about 280 and 130 percent, respectively.

Table 3. Economic Impacts from Scenario 1

Material	Total Labor Hours	Total Wages ($)
Paper	4,344,177	$ 133,661,453
Food Waste	1,077,082	$ 37,316,885
Yard Trimmings	377,293	$ 13,071,805
Mixed Plastics	15,774,044	$ 368,666,854
Bioplastics	347	$ 12,018
Electronics	114,184	$ 3,956,069
Metals	6,781,170	$ 180,053,003
Glass	2,383,946	$ 64,037,790
Construction Materials	275,101	$ 9,531,247
Mixed Recyclables	786,678	$ 21,433,944
Mixed Organics	803,821	$ 27,849,428
Mixed MSW	1,004,534	$ 34,803,371
Total	**33,722,379**	**$ 894,393,867**

SCENARIO 2: COMPOSTING ORGANICS

Scenario 2 assumes that the same amount of waste is generated in the state, but the potentially compostable materials found in the waste are composted instead of landfilled. This scenario is isolated from Scenario 1, meaning that the potentially recyclable materials are landfilled. Because the total amount of materials produced remains the same, greenhouse gas emissions and energy use from the production of the materials are not analyzed. The potentially compostable materials are listed in the call-out box below.

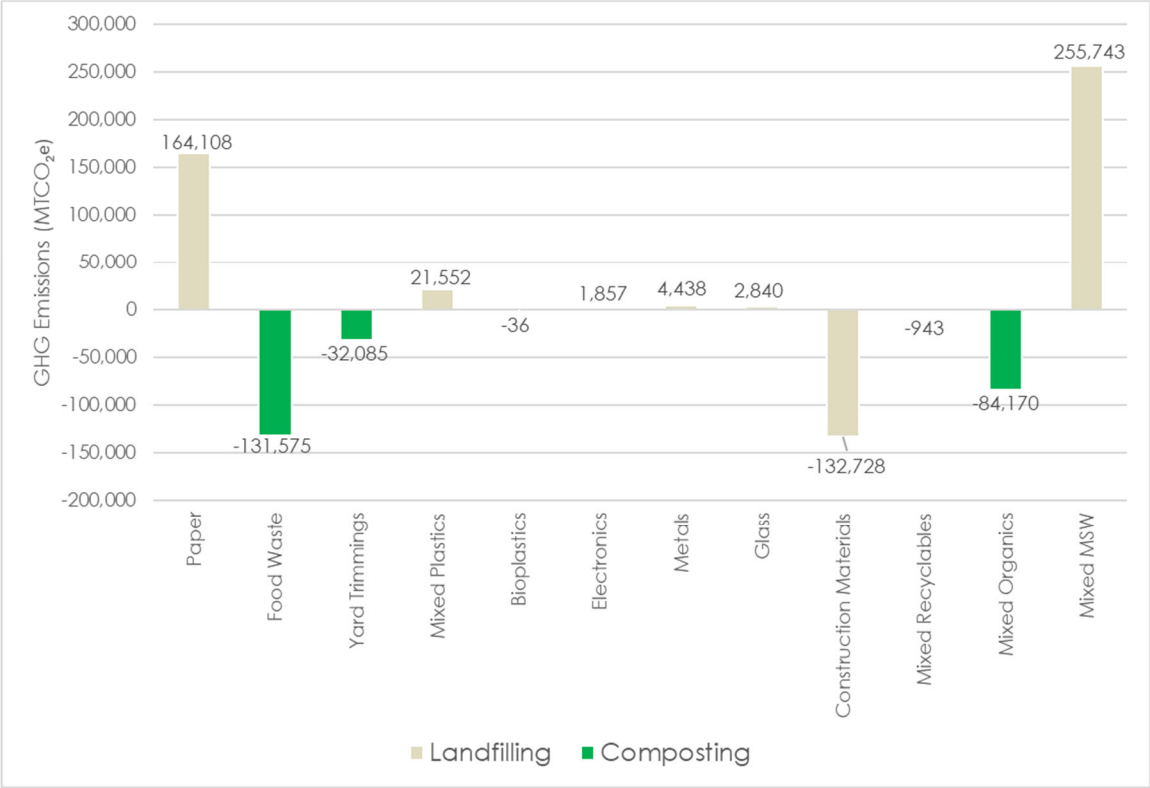
- Compostable Paper
- Uncontained Vegetative Food
- Uncontained Non-Vegetative Food
- Unopened Packaged Food – Metal
- Unopened Packaged Food – Plastic
- Unopened Packaged Food – Paperboard
- Unopened Packaged Food – Film Plastic
- Unopened Packaged Food – Beverages
- Opened Packaged Food – Beverages
- Other Packaged Food
- Food Processing Wastes
- Yard Waste
- Other Plant Materials
- Woody Material >10”
- Agricultural Plant Materials
- Pallets and Crates
- Manure
- Dead Animals
- Other Organic Material

The materials above were grouped to match the material categories used by the EPA WARM model (see Table 1 for a crosswalk between the material categories used by this study to the material categories used by the EPA WARM model).

GHG Emission Impacts

The greenhouse gas emissions from the landfilling and composting of materials generated in Ohio can be seen in the figure below. Greenhouse gas emissions are measured in metric tons of carbon dioxide equivalent ($MTCO_2e$). This scenario results in a greenhouse gas reduction of 607,217 $MTCO_2e$ when compared to the baseline scenario.

Exhibit 21. GHG Emissions from Composting Organics

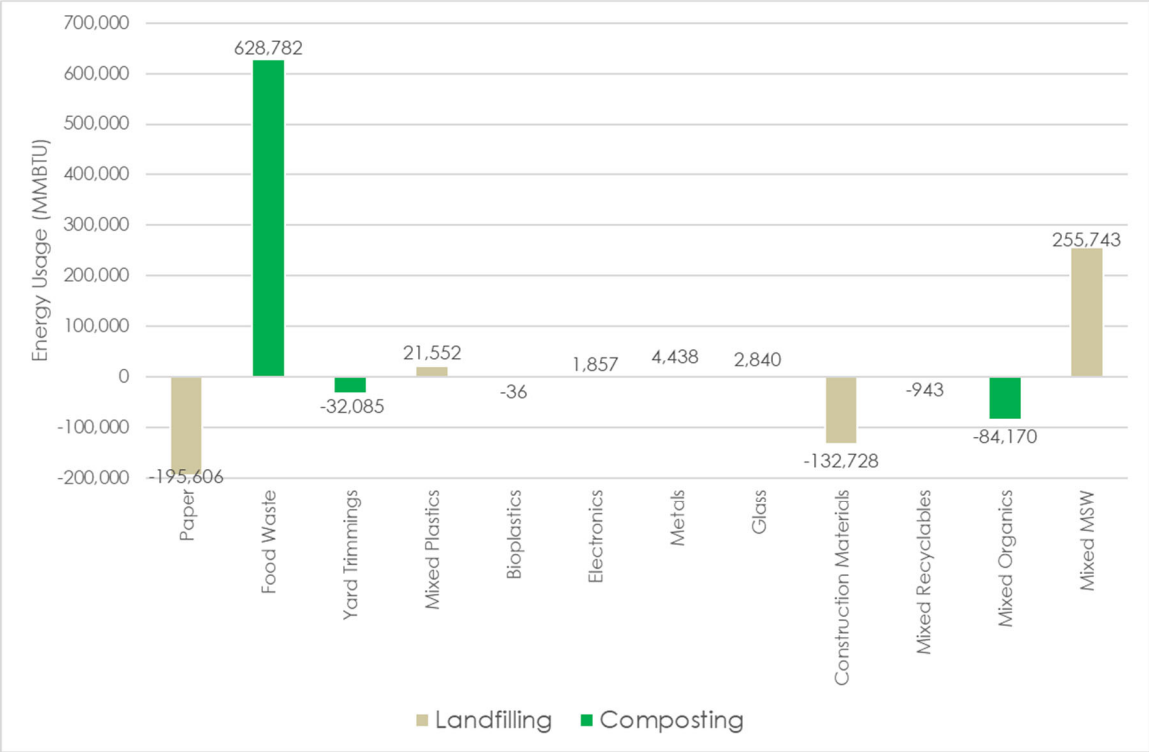


The total amount of greenhouse gas emissions from this scenario is about 12.5 million metric tons of carbon dioxide equivalent, 607 thousand metric tons less than the baseline scenario.

Energy Use

The energy use from the composting and landfilling of materials generated in Ohio can be seen in the following figure. Energy is measured in millions of BTUs (MMBTU). This scenario results in an increase of energy usage by 397,988 MMBTU.

Exhibit 22. Energy Consumption from Composting Organics



Diverting compostables reduced the energy consumption for the end life of mixed organics, while increasing the energy consumption impact for food waste, yard trimmings, and bioplastics. This shows that composting most materials is more energy intensive than landfilling them. The total energy consumption from this scenario is about 131 million MMBTUs, about 400 thousand less MMBTUs than the baseline scenario.

Economic Impacts

Estimated economic impacts of the end-of-life management of the materials can be seen in the table below.

Table 4. Economic Impacts from Composting Organics

Material	Total Labor Hours	Total Wages ($)
Paper	1,084,665	$ 37,579,621
Food Waste	440,624	$ 10,474,242
Yard Trimmings	154,347	$ 3,669,043
Mixed Plastics	1,325,154	$ 45,911,672
Bioplastics	142	$ 3,373
Electronics	114,184	$ 3,956,069
Metals	272,907	$ 9,455,232
Glass	174,613	$ 6,049,690
Construction Materials	275,101	$ 9,531,247
Mixed Recyclables	138,509	$ 4,798,824

Material	Total Labor Hours	Total Wages ($)
Mixed Organics	328,836	$ 7,816,881
Mixed MSW	1,004,534	$ 34,803,371
Total	**5,313,617**	**$ 174,049,262**

The total labor hours and wages decreased by over 20 percent from the baseline scenario. These results show that composting requires less labor than recycling and landfilling materials.

SUMMARY ENVIRONMENTAL AND ECONOMIC BENEFITS

This section provides a summary of the greenhouse gas emissions, energy consumption, and economic impacts of the baseline and three scenarios modeled.

GHG Emission Impacts

The following table summarizes the greenhouse gas emissions from the life of materials modeled in WARM. As shown below, diverting materials to be recycled (scenario 1) has the largest impact on greenhouse gas production.

Table 5. Summary GHG Emission Impacts

Material	Production + End-of-Life Impact ($MTCO_2e$)		
	Baseline	Scenario 1	Scenario 2
Paper	5,503,833	2,527,078	5,503,833
Food Waste	2,096,539	2,096,539	1,663,047
Yard Trimmings	(51,765)	(51,765)	(32,085)
Mixed Plastics	2,031,995	1,749,216	2,031,995
Bioplastics	226	226	647
Electronics	1,919,925	1,919,925	1,919,925
Metals	857,341	(217,312)	857,341
Glass	77,265	41,068	77,265
Construction Materials	318,495	318,495	318,495
Mixed Recyclables	(943)	(311,516)	(943)
Mixed Organics	109,657	109,657	(84,170)
Mixed MSW	255,743	255,743	255,743
Total	**13,118,312**	**8,437,354**	**12,511,095**

Energy Use

Table 7 summarizes the energy use from the life of materials modeled using WARM. As seen in the table, plastics and paper are the largest consumers of energy. Diverting these materials to be recycled (scenario 1) causes the largest decrease in energy consumption.

Table 6. Summary Energy Usage

Material	Production + End-of-Life Impact (Million BTU)		
	Baseline	Scenario 1	Scenario 2
Paper	23,840,679	9,565,697	23,840,679
Food Waste	8,607,706	8,607,706	9,179,419
Yard Trimmings	(51,765)	(51,765)	(32,085)
Mixed Plastics	68,654,224	68,371,446	68,654,224
Bioplastics	7,923	7,923	8,344
Electronics	10,997,647	10,997,647	10,997,647
Metals	12,947,824	11,873,170	12,947,824
Glass	970,916	934,718	970,916
Construction Materials	4,432,084	4,432,084	4,432,084
Mixed Recyclables	(943)	(311,516)	(943)
Mixed Organics	109,657	109,657	(84,170)
Mixed MSW	255,743	255,743	255,743
Total	**130,771,696**	**114,792,511**	**131,169,684**

Economic Impacts

The tables below detail the economic impacts from the life of materials modeled in WARM.

Table 8 summarizes the total labor hours associated with the life of each material. As shown in the table, diverting materials for recycling (scenario 1) increases the total amount of labor hours, while the other two scenarios decrease the number of hours.

Table 7. Summary of Total Labor Hours Spent

Material	Total Labor Hours		
	Baseline	Scenario 1	Scenario 2
Paper	1,084,665	4,344,177	1,084,665
Food Waste	1,077,082	1,077,082	440,624
Yard Trimmings	377,293	377,293	154,347
Mixed Plastics	1,325,154	15,774,044	1,325,154
Bioplastics	347	347	142
Electronics	114,184	114,184	114,184
Metals	272,907	6,781,170	272,907
Glass	174,613	2,383,946	174,613
Construction Materials	275,101	275,101	275,101
Mixed Recyclables	138,509	786,678	138,509
Mixed Organics	803,821	803,821	328,836
Mixed MSW	1,004,534	1,004,534	1,004,534
Total	**6,648,211**	**33,722,379**	**5,313,617**

Table 9 summarizes the total wages associated with the life of each material. Following trend with the previous table, the total wages paid in scenario 1 are a large increase from the baseline, while scenarios 2 and 3 show a slight decrease.

Table 8. Summary of Total Wages

Material	Total Wages ($)		
	Baseline	Scenario 1	Scenario 2
Paper	$ 37,579,621	$ 133,661,453	$ 37,579,621
Food Waste	$ 37,316,885	$ 37,316,885	$ 10,474,242
Yard Trimmings	$ 13,071,805	$ 13,071,805	$ 3,669,043
Mixed Plastics	$ 45,911,672	$ 368,666,854	$ 45,911,672
Bioplastics	$ 12,018	$ 12,018	$ 3,373
Electronics	$ 3,956,069	$ 3,956,069	$ 3,956,069
Metals	$ 9,455,232	$ 180,053,003	$ 9,455,232
Glass	$ 6,049,690	$ 64,037,790	$ 6,049,690
Construction Materials	$ 9,531,247	$ 9,531,247	$ 9,531,247
Mixed Recyclables	$ 4,798,824	$ 21,433,944	$ 4,798,824
Mixed Organics	$ 27,849,428	$ 27,849,428	$ 7,816,881
Mixed MSW	$ 34,803,371	$ 34,803,371	$ 34,803,371
Total	**$ 230,335,860**	**$ 894,393,867**	**$ 174,049,262**

Summary

The following table summarizes the environmental and economic differences from each scenario that was modeled using EPA's WARM.

Table 9. Summary Environmental and Economic Benefits

Metric		Scenario 1	Scenario 2
Waste Tons			
Baseline	Disposed	5,338,279	5,338,279
Baseline	Diverted	1,584,265	1,813,530
	% Diverted	30%	34%
GHG Emissions ($MTCO_2e$)			
	Baseline	13,118,312	13,118,312
	Alternative	8,437,354	12,511,095
	Savings	4,680,958	607,217
Energy (Million BTU)			
	Baseline	130,771,696	130,771,696
	Alternative	114,792,511	131,169,684
	Savings	15,979,185	-397,988
Annual Labor Hours			
	Baseline	6,648,211	6,648,211
	Alternative	33,722,379	5,313,617
	Additional	27,074,168	-1,334,593
	Jobs[1]	13,016	-642
Annual Wages ($)			
	Baseline	$ 230,335,860	$ 230,335,860
	Alternative	$ 894,393,867	$ 174,049,262
	Additional	$ 664,058,006	$ (56,286,598)

[1]Assumes a 40-hour work week

6 CONCLUSIONS AND RECOMMENDATIONS

Periodically Perform Waste Characterization Studies on a Statewide Level - Conducting waste composition studies at regular intervals provides much needed data on changes in the waste stream and the effects of diversion efforts. This study can be thought of as a baseline study. Geographic regions and their waste flows could be better understood by conducting sampling events at a wider range of locations.

Focus on the Low-Hanging Divertible Materials – Recyclable materials were measured in lowered amounts in more urban areas that have more recycling infrastructure, such as Cincinnati and Columbus. Higher amounts of recyclables were found in more rural areas, such as Beech Hollow in Wellston, Ohio. Expanding recycling infrastructure - such as curbside collection or drop-off centers - can be challenging in rural areas due to distance, cost and limited existing infrastructure. However, introducing curbside collection where feasible, and establishing monitored drop-off centers equipped with cameras, staff, or regular contamination checks, could be effective strategies for supporting recycling diversion programs in these areas.

Focus on ICI Establishments to Divert OCC – Uncoated OCC/Kraft Packaging was measured at approximately 7.8 percent in the ICI waste stream, notable higher than the 4.8 percent found overall in Residential samples.

Focus on Residential Sources to Divert Yard Waste – Yard Waste was measured at approximately 7.9 percent in the overall residential waste stream. It can be managed through seasonal curbside pickup or collection events held in the fall and spring/summer. Additional management strategies, such backyard composting, could also be explored. It's important to note that this study was conducted during the fall of 2024 when leaf season was in full swing and the Spring of 2025, when favorable weather allowed homeowners to work on their lawns. Yard Waste volumes are expected to be significantly lower in the Winter months.

Encourage Organics Composting and Diversion – Compostable organics make up a significant portion of the waste stream, particularly in more urban locations where curbside recycling has diverted commingled materials and paper from the waste stream. Additionally, urban areas like Columbus and Cincinnati have areas with higher concentrations of restaurants and other food service establishments, which present key opportunities for targeted organics diversion. Nationally, more jurisdictions are exploring curbside organics collection as a strategy to further reduce landfill disposal. Food generators can also be encouraged to donate surplus food, adopt responsible ordering practices, and use compostable packaging or even reusable containers for takeout services.

Appendix A

Overall Waste Composition by Site

Yard Waste after being sorted into a container.

Rumpke Sanitary Landfill - Overall Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.2%	2.3%	1.7%	2.7%
Mixed Paper Products	7.7%	4.8%	6.6%	8.8%
Uncoated OCC/Kraft Packaging	5.7%	5.5%	4.5%	7.0%
Aseptic Cartons / Polycoated	1.8%	1.6%	1.4%	2.2%
Compostable Paper	6.6%	3.4%	5.8%	7.4%
Hard Cover Books	0.1%	0.7%	<0.1%	0.3%
Shredded Paper	0.2%	1.1%	<0.1%	0.5%
Remainder/Composite Paper	0.4%	0.6%	0.3%	0.6%
Total Paper	**24.9%**			
Plastic				
#1 PET Bottles/Jars	1.9%	1.0%	1.6%	2.1%
#1 PET Containers	0.8%	0.7%	0.6%	0.9%
#1 PET Clamshells	0.4%	0.3%	0.3%	0.4%
#2 HDPE Containers - Natural	0.5%	0.4%	0.4%	0.6%
#2 HDPE Containers - Colored	1.1%	1.2%	0.9%	1.4%
#4 LDPE Film	1.1%	0.8%	0.9%	1.3%
#5 PP Packaging	1.6%	1.0%	1.4%	1.8%
#6 PS General	0.3%	0.4%	0.2%	0.3%
#6 PS High Impact	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.4%	0.4%	0.3%	0.5%
#6 Expanded Food	1.1%	1.1%	0.8%	1.3%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	<0.1%
Single-Layer Flexible Packaging	3.8%	2.4%	3.3%	4.4%
Other Plastics	3.9%	3.8%	3.0%	4.8%
Garbage Bags	3.2%	1.2%	2.9%	3.4%
Total Plastic	**20.2%**			
Food Wastes				
Uncontained Vegetative Food	7.6%	3.8%	6.7%	8.4%
Uncontained Non-Vegetative	3.1%	2.5%	2.5%	3.7%
Unopened Packaged - Metal	0.1%	0.6%	<0.1%	0.2%
Unopened Packaged - Plastic	0.9%	1.6%	0.5%	1.2%
Unopened Packaged - Paperboard	<0.1%	0.5%	<0.1%	0.2%
Unopened Packaged - Film Plastic	2.2%	2.6%	1.7%	2.8%
Unopened Packaged - Glass	0.2%	0.5%	<0.1%	0.3%
Unopened Packaged - Beverages	0.2%	0.8%	<0.1%	0.4%
Opened Packaged - Beverages	1.7%	1.7%	1.3%	2.1%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**16.0%**			

Rumpke Sanitary Landfill - Overall Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	6.7%	9.0%	4.6%	8.7%
Other Plant Materials	0.2%	0.7%	<0.1%	0.4%
Woody Material >10"	<0.1%	0.5%	<0.1%	0.2%
Agricultural Plant Materials	0.2%	1.6%	<0.1%	0.6%
Pallets and Crates	0.8%	2.4%	0.3%	1.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	<0.1%	<0.1%
Other Organic Material	4.9%	4.6%	3.9%	6.0%
Total Other Organics	**12.9%**			
Glass and Metal				
Glass Containers	2.4%	1.9%	2.0%	2.9%
Other Glass and Ceramics	0.3%	0.8%	0.2%	0.5%
Aluminum Cans	0.8%	0.4%	0.7%	0.9%
Other Aluminum	0.5%	0.5%	0.4%	0.6%
Ferrous Cans	0.8%	0.6%	0.7%	0.9%
Other Ferrous	1.0%	2.0%	0.6%	1.5%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	<0.1%
Mixed Metal / Material	0.3%	1.1%	<0.1%	0.6%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.7%	<0.1%	0.4%
Ink Cartridges	<0.1%	0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	1.3%	3.3%	0.5%	2.1%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.6%**			
Consumer Products				
Textiles - Organic	4.1%	4.6%	3.0%	5.1%
Textiles-Synthetic, Mixed Unk	0.4%	0.8%	0.2%	0.6%
Shoes, Purses, Belts	0.8%	1.5%	0.4%	1.1%
Furniture & Mattresses	1.2%	3.4%	0.5%	2.0%
Large Appliances	0.1%	1.1%	<0.1%	0.4%
Rubber Products	0.3%	0.7%	0.2%	0.5%
Total Consumer Products	**6.9%**			

Rumpke Sanitary Landfill - Overall Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	0.2%	0.9%	<0.1%	0.4%
Fines/Dirt	5.0%	1.9%	4.5%	5.4%
Mixed Residue	0.6%	1.6%	0.2%	1.0%
Total Other Wastes	**5.7%**			
Construction & Demolition Debris				
Treated Wood	0.4%	1.5%	<0.1%	0.7%
Untreated Wood	1.2%	2.6%	0.7%	1.8%
Painted/Stained Wood	0.5%	1.2%	0.2%	0.8%
Plastic Lumber	<0.1%	0.7%	<0.1%	0.2%
Insulation	0.1%	0.5%	<0.1%	0.2%
Gypsum Drywall - Demolition	0.8%	3.1%	<0.1%	1.5%
Gypsum Drywall - Clean	<0.1%	0.2%	<0.1%	<0.1%
Concrete and Bricks	0.2%	1.2%	<0.1%	0.5%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.8%	3.5%	<0.1%	1.6%
Carpet Padding	0.5%	2.2%	<0.1%	1.0%
Asphalt Roofing	<0.1%	<0.1%	<0.1%	<0.1%
Plastic Flooring	<0.1%	0.1%	<0.1%	<0.1%
C&D PVC	0.2%	0.9%	<0.1%	0.4%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	0.2%	<0.1%	<0.1%
Other C&D	0.2%	1.2%	<0.1%	0.5%
Total C&DD	**5.0%**			
Household Hazardous Wastes				
Paint	0.2%	0.8%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.3%	<0.1%	0.1%
Total HHW	**0.3%**			
Total	**100.0%**			

Notes: Composition based on 72 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Franklin County Landfill - Overall Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	1.9%	4.1%	1.0%	2.9%
Mixed Paper Products	6.0%	3.7%	5.2%	6.8%
Uncoated OCC/Kraft Packaging	6.7%	5.9%	5.3%	8.0%
Aseptic Cartons / Polycoated	2.0%	1.3%	1.7%	2.3%
Compostable Paper	7.0%	2.1%	6.5%	7.5%
Hard Cover Books	0.1%	0.4%	<0.1%	0.2%
Shredded Paper	0.2%	0.6%	<0.1%	0.3%
Remainder/Composite Paper	0.2%	0.4%	0.1%	0.3%
Total Paper	**24.1%**			
Plastic				
#1 PET Bottles/Jars	1.3%	0.8%	1.1%	1.5%
#1 PET Containers	0.8%	0.7%	0.6%	1.0%
#1 PET Clamshells	0.3%	0.2%	0.3%	0.4%
#2 HDPE Containers - Natural	0.5%	0.4%	0.4%	0.6%
#2 HDPE Containers - Colored	0.9%	1.1%	0.7%	1.2%
#4 LDPE Film	0.9%	0.6%	0.8%	1.1%
#5 PP Packaging	1.1%	0.7%	0.9%	1.3%
#6 PS General	0.3%	0.2%	0.2%	0.3%
#6 PS High Impact	0.3%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.4%	0.5%	0.3%	0.5%
#6 Expanded Food	1.0%	1.2%	0.8%	1.3%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	0.1%	0.1%	0.2%
Single-Layer Flexible Packaging	4.1%	2.7%	3.5%	4.7%
Other Plastics	3.0%	3.4%	2.2%	3.8%
Garbage Bags	3.5%	1.3%	3.2%	3.8%
Total Plastic	**18.7%**			
Food Wastes				
Uncontained Vegetative Food	8.2%	5.1%	7.1%	9.4%
Uncontained Non-Vegetative	2.8%	2.3%	2.3%	3.4%
Unopened Packaged - Metal	<0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Plastic	0.5%	0.9%	0.3%	0.7%
Unopened Packaged - Paperboard	0.2%	1.2%	<0.1%	0.5%
Unopened Packaged - Film Plastic	2.0%	2.2%	1.5%	2.5%
Unopened Packaged - Glass	<0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Beverages	0.2%	0.4%	<0.1%	0.3%
Opened Packaged - Beverages	1.8%	1.6%	1.4%	2.1%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**15.8%**			

Franklin County Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	4.4%	6.9%	2.8%	6.0%
Other Plant Materials	0.2%	1.5%	<0.1%	0.5%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.8%	2.6%	0.2%	1.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.2%	1.9%	<0.1%	0.7%
Other Organic Material	3.9%	3.9%	3.0%	4.8%
Total Other Organics	**9.5%**			
Glass and Metal				
Glass Containers	2.5%	3.3%	1.7%	3.3%
Other Glass and Ceramics	0.3%	1.1%	<0.1%	0.6%
Aluminum Cans	0.7%	0.5%	0.6%	0.8%
Other Aluminum	0.5%	0.6%	0.4%	0.6%
Ferrous Cans	0.8%	0.9%	0.5%	1.0%
Other Ferrous	1.2%	1.6%	0.8%	1.6%
Other Nonferrous Metal	0.2%	0.7%	<0.1%	0.3%
Mixed Metal / Material	0.6%	1.8%	0.2%	1.0%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.9%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.7%	<0.1%	0.4%
Ink Cartridges	<0.1%	0.3%	<0.1%	0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	2.3%	5.4%	1.0%	3.5%
Vaping Devices	<0.1%	0.3%	<0.1%	0.1%
Total Electronics	**2.7%**			
Consumer Products				
Textiles - Organic	3.4%	4.5%	2.3%	4.4%
Textiles-Synthetic, Mixed Unk	0.6%	1.8%	0.2%	1.0%
Shoes, Purses, Belts	0.3%	0.7%	0.2%	0.5%
Furniture & Mattresses	2.1%	5.7%	0.8%	3.4%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.7%	1.4%	0.4%	1.0%
Total Consumer Products	**7.1%**			

Franklin County Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	6.8%	2.7%	6.1%	7.4%
Mixed Residue	1.3%	3.5%	0.5%	2.1%
Total Other Wastes	**8.1%**			
Construction & Demolition Debris				
Treated Wood	1.4%	4.6%	0.3%	2.5%
Untreated Wood	2.1%	4.1%	1.1%	3.0%
Painted/Stained Wood	1.2%	3.5%	0.4%	2.0%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.2%	0.9%	<0.1%	0.4%
Gypsum Drywall - Demolition	<0.1%	0.4%	<0.1%	0.2%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.5%	2.0%	<0.1%	0.9%
Ceramics/Porcelain	<0.1%	0.2%	<0.1%	<0.1%
Wall-to-wall Carpet	0.7%	3.0%	<0.1%	1.4%
Carpet Padding	<0.1%	0.7%	<0.1%	0.3%
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	0.2%	<0.1%	<0.1%
C&D Glass	0.4%	2.3%	<0.1%	0.9%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.3%	1.3%	<0.1%	0.6%
Total C&DD	**7.0%**			
Household Hazardous Wastes				
Paint	0.1%	1.0%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.1%	<0.1%	<0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 72 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Countywide Landfill - Overall Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	1.6%	2.0%	1.2%	2.1%
Mixed Paper Products	7.4%	3.6%	6.6%	8.3%
Uncoated OCC/Kraft Packaging	6.4%	5.6%	5.1%	7.7%
Aseptic Cartons / Polycoated	1.2%	1.3%	0.9%	1.5%
Compostable Paper	6.0%	2.7%	5.4%	6.7%
Hard Cover Books	0.1%	0.5%	<0.1%	0.2%
Shredded Paper	0.3%	2.0%	<0.1%	0.8%
Remainder/Composite Paper	0.3%	0.4%	0.2%	0.4%
Total Paper	**23.5%**			
Plastic				
#1 PET Bottles/Jars	1.7%	0.8%	1.5%	1.9%
#1 PET Containers	0.8%	0.8%	0.6%	1.0%
#1 PET Clamshells	0.3%	0.2%	0.3%	0.4%
#2 HDPE Containers - Natural	0.4%	0.3%	0.4%	0.5%
#2 HDPE Containers - Colored	0.5%	0.5%	0.4%	0.7%
#4 LDPE Film	1.0%	0.7%	0.8%	1.1%
#5 PP Packaging	1.3%	0.8%	1.1%	1.4%
#6 PS General	0.4%	0.2%	0.3%	0.4%
#6 PS High Impact	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.6%	0.6%	0.5%	0.7%
#6 Expanded Food	0.6%	0.4%	0.5%	0.7%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	<0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	5.1%	3.7%	4.2%	5.9%
Other Plastics	2.6%	2.1%	2.1%	3.1%
Garbage Bags	3.4%	1.2%	3.2%	3.7%
Total Plastic	**19.1%**			
Food Wastes				
Uncontained Vegetative Food	8.6%	5.2%	7.4%	9.8%
Uncontained Non-Vegetative	3.4%	2.6%	2.9%	4.0%
Unopened Packaged - Metal	0.2%	0.6%	<0.1%	0.3%
Unopened Packaged - Plastic	0.5%	0.7%	0.3%	0.6%
Unopened Packaged - Paperboard	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Film Plastic	2.6%	2.6%	2.0%	3.2%
Unopened Packaged - Glass	0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Beverages	0.2%	0.6%	<0.1%	0.3%
Opened Packaged - Beverages	1.4%	1.4%	1.1%	1.7%
Other Packaged	0.2%	1.7%	<0.1%	0.6%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**17.2%**			

Countywide Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	7.3%	8.9%	5.2%	9.4%
Other Plant Materials	<0.1%	<0.1%	N/A	N/A
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.9%	2.7%	0.3%	1.5%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.2%	1.7%	<0.1%	0.6%
Other Organic Material	4.3%	4.0%	3.3%	5.2%
Total Other Organics	**12.7%**			
Glass and Metal				
Glass Containers	2.2%	2.2%	1.7%	2.7%
Other Glass and Ceramics	0.1%	0.3%	<0.1%	0.2%
Aluminum Cans	0.9%	0.6%	0.7%	1.0%
Other Aluminum	0.6%	1.7%	0.2%	1.0%
Ferrous Cans	1.1%	1.1%	0.9%	1.4%
Other Ferrous	0.8%	0.9%	0.6%	1.0%
Other Nonferrous Metal	0.2%	0.4%	<0.1%	0.2%
Mixed Metal / Material	0.5%	1.7%	<0.1%	0.9%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.6%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.4%	0.1%	0.3%
Ink Cartridges	<0.1%	0.3%	<0.1%	0.1%
Mixed Media	<0.1%	0.7%	<0.1%	0.2%
General Electronics	1.0%	1.9%	0.6%	1.5%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.4%**			
Consumer Products				
Textiles - Organic	2.4%	2.5%	1.8%	3.0%
Textiles-Synthetic, Mixed Unk	0.4%	0.9%	0.2%	0.6%
Shoes, Purses, Belts	0.5%	0.7%	0.3%	0.6%
Furniture & Mattresses	2.1%	4.9%	1.0%	3.2%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.7%	2.4%	0.1%	1.2%
Total Consumer Products	**6.0%**			

Countywide Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	0.3%	2.6%	<0.1%	0.9%
Fines/Dirt	6.8%	2.4%	6.2%	7.4%
Mixed Residue	0.7%	1.4%	0.4%	1.0%
Total Other Wastes	**7.8%**			
Construction & Demolition Debris				
Treated Wood	0.2%	0.9%	<0.1%	0.4%
Untreated Wood	1.6%	3.8%	0.7%	2.4%
Painted/Stained Wood	0.9%	2.5%	0.3%	1.4%
Plastic Lumber	<0.1%	0.3%	<0.1%	0.1%
Insulation	0.2%	0.9%	<0.1%	0.4%
Gypsum Drywall - Demolition	0.5%	2.7%	<0.1%	1.2%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.7%	2.8%	<0.1%	1.4%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.5%	2.0%	<0.1%	1.0%
Carpet Padding	0.1%	0.7%	<0.1%	0.3%
Asphalt Roofing	0.2%	0.9%	<0.1%	0.4%
Plastic Flooring	0.2%	0.9%	<0.1%	0.4%
C&D PVC	<0.1%	<0.1%	<0.1%	<0.1%
C&D Glass	<0.1%	0.3%	<0.1%	<0.1%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.4%	1.5%	<0.1%	0.7%
Total C&DD	**5.5%**			
Household Hazardous Wastes				
Paint	<0.1%	<0.1%	<0.1%	<0.1%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	0.4%	<0.1%	0.2%
Other Batteries	<0.1%	0.5%	<0.1%	0.2%
Other HHW	<0.1%	0.2%	<0.1%	<0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 72 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Hancock County Landfill - Overall Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	2.3%	2.2%	1.8%	2.9%
Mixed Paper Products	7.9%	4.8%	6.8%	9.0%
Uncoated OCC/Kraft Packaging	6.5%	4.8%	5.4%	7.7%
Aseptic Cartons / Polycoated	2.5%	2.3%	2.0%	3.1%
Compostable Paper	6.6%	2.0%	6.2%	7.1%
Hard Cover Books	<0.1%	0.3%	<0.1%	0.2%
Shredded Paper	0.1%	0.4%	<0.1%	0.2%
Remainder/Composite Paper	0.3%	0.5%	0.2%	0.4%
Total Paper	**26.5%**			
Plastic				
#1 PET Bottles/Jars	1.9%	1.0%	1.7%	2.2%
#1 PET Containers	0.8%	0.9%	0.6%	1.0%
#1 PET Clamshells	0.3%	0.3%	0.3%	0.4%
#2 HDPE Containers - Natural	0.5%	0.4%	0.4%	0.6%
#2 HDPE Containers - Colored	1.0%	0.8%	0.8%	1.2%
#4 LDPE Film	1.6%	1.9%	1.2%	2.0%
#5 PP Packaging	1.2%	0.6%	1.0%	1.3%
#6 PS General	0.3%	0.3%	0.2%	0.4%
#6 PS High Impact	0.3%	0.3%	0.2%	0.3%
#6 PS Expanded Non-Food	0.6%	1.0%	0.4%	0.8%
#6 Expanded Food	1.0%	0.8%	0.8%	1.2%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.3%	4.2%	3.3%	5.2%
Other Plastics	2.6%	1.7%	2.2%	3.0%
Garbage Bags	3.8%	1.6%	3.4%	4.2%
Total Plastic	**20.2%**			
Food Wastes				
Uncontained Vegetative Food	7.8%	4.3%	6.8%	8.8%
Uncontained Non-Vegetative	4.0%	4.5%	2.9%	5.0%
Unopened Packaged - Metal	<0.1%	0.6%	<0.1%	0.2%
Unopened Packaged - Plastic	0.5%	0.9%	0.3%	0.7%
Unopened Packaged - Paperboard	0.2%	0.4%	<0.1%	0.3%
Unopened Packaged - Film Plastic	1.5%	1.9%	1.1%	2.0%
Unopened Packaged - Glass	<0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Beverages	0.1%	0.3%	<0.1%	0.2%
Opened Packaged - Beverages	1.8%	1.8%	1.4%	2.2%
Other Packaged	<0.1%	0.2%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**16.0%**			

Hancock County Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	4.8%	5.9%	3.4%	6.1%
Other Plant Materials	<0.1%	0.4%	<0.1%	0.2%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	0.1%	0.9%	<0.1%	0.3%
Pallets and Crates	1.3%	3.7%	0.5%	2.2%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	4.7%	4.9%	3.6%	5.8%
Total Other Organics	**11.0%**			
Glass and Metal				
Glass Containers	2.1%	1.8%	1.7%	2.5%
Other Glass and Ceramics	0.1%	0.3%	<0.1%	0.2%
Aluminum Cans	0.9%	0.6%	0.7%	1.0%
Other Aluminum	0.3%	0.3%	0.2%	0.4%
Ferrous Cans	1.1%	1.7%	0.7%	1.5%
Other Ferrous	0.7%	0.8%	0.5%	0.9%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.3%	1.0%	<0.1%	0.5%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**5.8%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	0.3%	1.4%	<0.1%	0.6%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.1%	0.5%	<0.1%	0.3%
Ink Cartridges	<0.1%	0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	1.0%	1.5%	0.6%	1.3%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.5%**			
Consumer Products				
Textiles - Organic	3.3%	4.0%	2.4%	4.3%
Textiles-Synthetic, Mixed Unk	0.6%	0.9%	0.4%	0.8%
Shoes, Purses, Belts	0.4%	0.7%	0.2%	0.5%
Furniture & Mattresses	1.4%	4.2%	0.4%	2.4%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.7%	1.8%	0.3%	1.1%
Total Consumer Products	**6.4%**			

Hancock County Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	7.2%	2.6%	6.6%	7.8%
Mixed Residue	1.3%	2.4%	0.7%	1.9%
Total Other Wastes	**8.5%**			
Construction & Demolition Debris				
Treated Wood	0.4%	2.1%	<0.1%	0.9%
Untreated Wood	1.2%	2.1%	0.7%	1.7%
Painted/Stained Wood	0.4%	1.1%	0.2%	0.7%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.4%	2.5%	<0.1%	1.0%
Gypsum Drywall - Demolition	0.2%	0.7%	<0.1%	0.4%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.3%	1.0%	<0.1%	0.5%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.3%	1.6%	<0.1%	0.7%
Carpet Padding	<0.1%	<0.1%	N/A	N/A
Asphalt Roofing	<0.1%	0.2%	<0.1%	<0.1%
Plastic Flooring	<0.1%	0.3%	<0.1%	0.1%
C&D PVC	<0.1%	0.4%	<0.1%	0.2%
C&D Glass	0.1%	1.1%	<0.1%	0.4%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.4%	1.7%	<0.1%	0.8%
Total C&DD	**3.9%**			
Household Hazardous Wastes				
Paint	0.2%	0.8%	<0.1%	0.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.4%	<0.1%	0.2%
Total HHW	**0.3%**			
Total	**100.0%**			

Notes: Composition based on 72 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Beech Hollow Landfill - Overall Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	1.8%	2.0%	1.3%	2.3%
Mixed Paper Products	8.8%	3.6%	8.0%	9.6%
Uncoated OCC/Kraft Packaging	6.2%	5.2%	5.0%	7.4%
Aseptic Cartons / Polycoated	1.3%	1.1%	1.0%	1.6%
Compostable Paper	6.3%	2.6%	5.7%	6.9%
Hard Cover Books	0.2%	0.5%	<0.1%	0.3%
Shredded Paper	0.7%	2.4%	0.1%	1.2%
Remainder/Composite Paper	0.4%	0.9%	0.2%	0.6%
Total Paper	**25.7%**			
Plastic				
#1 PET Bottles/Jars	2.6%	1.0%	2.3%	2.8%
#1 PET Containers	0.6%	0.7%	0.4%	0.8%
#1 PET Clamshells	0.2%	0.2%	0.2%	0.3%
#2 HDPE Containers - Natural	0.8%	0.7%	0.7%	1.0%
#2 HDPE Containers - Colored	0.7%	0.7%	0.6%	0.9%
#4 LDPE Film	0.9%	0.5%	0.8%	1.1%
#5 PP Packaging	1.5%	1.0%	1.2%	1.7%
#6 PS General	0.3%	0.3%	0.2%	0.3%
#6 PS High Impact	0.3%	0.3%	0.2%	0.3%
#6 PS Expanded Non-Food	0.5%	0.4%	0.4%	0.6%
#6 Expanded Food	1.0%	0.9%	0.8%	1.2%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.7%	2.3%	4.1%	5.2%
Other Plastics	3.7%	3.2%	3.0%	4.5%
Garbage Bags	3.4%	1.4%	3.0%	3.7%
Total Plastic	**21.2%**			
Food Wastes				
Uncontained Vegetative Food	7.7%	4.6%	6.6%	8.7%
Uncontained Non-Vegetative	2.1%	1.5%	1.7%	2.4%
Unopened Packaged - Metal	<0.1%	0.6%	<0.1%	0.2%
Unopened Packaged - Plastic	0.6%	0.9%	0.4%	0.8%
Unopened Packaged - Paperboard	<0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Film Plastic	2.2%	2.7%	1.6%	2.8%
Unopened Packaged - Glass	0.1%	0.5%	<0.1%	0.2%
Unopened Packaged - Beverages	0.3%	1.2%	<0.1%	0.6%
Opened Packaged - Beverages	2.7%	1.8%	2.3%	3.2%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	0.4%	<0.1%	0.1%
Total Food Wastes	**15.9%**			

Beech Hollow Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	4.1%	6.0%	2.8%	5.5%
Other Plant Materials	0.2%	1.1%	<0.1%	0.5%
Woody Material >10"	<0.1%	0.6%	<0.1%	0.2%
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.8%	2.5%	0.3%	1.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.2%	1.9%	<0.1%	0.7%
Other Organic Material	4.7%	4.0%	3.8%	5.6%
Total Other Organics	**10.2%**			
Glass and Metal				
Glass Containers	2.2%	1.4%	1.9%	2.5%
Other Glass and Ceramics	0.3%	0.6%	0.2%	0.4%
Aluminum Cans	1.1%	0.7%	1.0%	1.3%
Other Aluminum	0.5%	0.5%	0.4%	0.6%
Ferrous Cans	1.4%	1.5%	1.1%	1.8%
Other Ferrous	0.7%	1.3%	0.5%	1.0%
Other Nonferrous Metal	0.1%	0.3%	<0.1%	0.2%
Mixed Metal / Material	0.6%	2.1%	<0.1%	1.1%
Aerosol Containers Non-hazardous	0.3%	0.3%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**7.2%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	0.5%	<0.1%	0.2%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.3%	0.8%	0.2%	0.5%
Ink Cartridges	<0.1%	0.2%	<0.1%	<0.1%
Mixed Media	<0.1%	0.2%	<0.1%	<0.1%
General Electronics	1.0%	1.5%	0.6%	1.3%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.5%**			
Consumer Products				
Textiles - Organic	4.6%	5.3%	3.3%	5.8%
Textiles-Synthetic, Mixed Unk	0.4%	0.6%	0.3%	0.6%
Shoes, Purses, Belts	0.6%	0.9%	0.4%	0.8%
Furniture & Mattresses	1.0%	2.7%	0.4%	1.7%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	1.1%	2.0%	0.6%	1.5%
Total Consumer Products	**7.7%**			

Beech Hollow Landfill - Overall Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	5.4%	1.3%	5.1%	5.7%
Mixed Residue	0.9%	3.9%	<0.1%	1.8%
Total Other Wastes	**6.2%**			
Construction & Demolition Debris				
Treated Wood	0.3%	1.2%	<0.1%	0.6%
Untreated Wood	1.1%	2.3%	0.5%	1.6%
Painted/Stained Wood	0.6%	1.5%	0.3%	0.9%
Plastic Lumber	<0.1%	0.1%	<0.1%	<0.1%
Insulation	0.2%	0.9%	<0.1%	0.4%
Gypsum Drywall - Demolition	0.2%	1.0%	<0.1%	0.5%
Gypsum Drywall - Clean	0.3%	2.4%	<0.1%	0.8%
Concrete and Bricks	0.2%	1.0%	<0.1%	0.4%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.2%	1.0%	<0.1%	0.4%
Carpet Padding	0.2%	1.1%	<0.1%	0.5%
Asphalt Roofing	0.1%	1.0%	<0.1%	0.4%
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	0.4%	<0.1%	0.2%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	0.7%	<0.1%	0.2%
Other C&D	0.3%	1.4%	<0.1%	0.7%
Total C&DD	**3.9%**			
Household Hazardous Wastes				
Paint	0.3%	1.6%	<0.1%	0.7%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.2%	<0.1%	<0.1%
Other HHW	<0.1%	0.2%	<0.1%	0.1%
Total HHW	**0.4%**			
Total	**100.0%**			

Notes: Composition based on 72 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Appendix B

Residential Waste Composition by Site

Rumpke Sanitary Landfill - Residential Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.0%	2.1%	1.3%	2.7%
Mixed Paper Products	8.0%	2.5%	7.2%	8.9%
Uncoated OCC/Kraft Packaging	3.0%	2.4%	2.2%	3.8%
Aseptic Cartons / Polycoated	1.7%	1.3%	1.2%	2.1%
Compostable Paper	6.1%	2.2%	5.4%	6.8%
Hard Cover Books	<0.1%	0.3%	<0.1%	0.2%
Shredded Paper	<0.1%	0.4%	<0.1%	0.2%
Remainder/Composite Paper	0.3%	0.3%	0.2%	0.4%
Total Paper	**21.3%**			
Plastic				
#1 PET Bottles/Jars	1.9%	1.0%	1.5%	2.2%
#1 PET Containers	0.8%	0.4%	0.6%	0.9%
#1 PET Clamshells	0.4%	0.4%	0.3%	0.5%
#2 HDPE Containers - Natural	0.4%	0.5%	0.3%	0.6%
#2 HDPE Containers - Colored	0.9%	0.7%	0.6%	1.1%
#4 LDPE Film	1.3%	1.0%	1.0%	1.6%
#5 PP Packaging	1.5%	0.8%	1.2%	1.8%
#6 PS General	0.2%	0.2%	0.1%	0.2%
#6 PS High Impact	0.3%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.4%	0.3%	0.3%	0.5%
#6 Expanded Food	1.0%	0.6%	0.8%	1.1%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	<0.1%	<0.1%	<0.1%
Single-Layer Flexible Packaging	3.4%	1.8%	2.8%	4.0%
Other Plastics	3.7%	3.7%	2.5%	4.9%
Garbage Bags	2.9%	1.0%	2.6%	3.2%
Total Plastic	**18.9%**			
Food Wastes				
Uncontained Vegetative Food	8.1%	3.9%	6.8%	9.3%
Uncontained Non-Vegetative	2.9%	1.6%	2.4%	3.4%
Unopened Packaged - Metal	0.2%	0.8%	<0.1%	0.4%
Unopened Packaged - Plastic	0.8%	1.2%	0.4%	1.2%
Unopened Packaged - Paperboard	<0.1%	<0.1%	N/A	N/A
Unopened Packaged - Film Plastic	2.7%	3.3%	1.6%	3.7%
Unopened Packaged - Glass	0.3%	0.6%	<0.1%	0.4%
Unopened Packaged - Beverages	0.2%	0.7%	<0.1%	0.4%
Opened Packaged - Beverages	1.5%	1.4%	1.0%	1.9%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**16.5%**			

Rumpke Sanitary Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	10.3%	10.9%	6.7%	13.8%
Other Plant Materials	0.1%	0.4%	<0.1%	0.3%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.4%	1.8%	<0.1%	1.0%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	<0.1%	<0.1%
Other Organic Material	5.5%	4.5%	4.0%	7.0%
Total Other Organics	**16.3%**			
Glass and Metal				
Glass Containers	2.3%	1.6%	1.8%	2.9%
Other Glass and Ceramics	0.4%	0.9%	0.2%	0.7%
Aluminum Cans	0.8%	0.4%	0.6%	0.9%
Other Aluminum	0.6%	0.6%	0.4%	0.8%
Ferrous Cans	0.9%	0.7%	0.6%	1.1%
Other Ferrous	0.9%	1.0%	0.5%	1.2%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.4%	1.3%	<0.1%	0.8%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.1%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.3%	0.9%	<0.1%	0.6%
Ink Cartridges	<0.1%	0.2%	<0.1%	<0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	1.4%	1.9%	0.8%	2.0%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.8%**			
Consumer Products				
Textiles - Organic	5.2%	4.4%	3.8%	6.7%
Textiles-Synthetic, Mixed Unk	0.5%	1.0%	0.2%	0.8%
Shoes, Purses, Belts	0.8%	1.3%	0.4%	1.2%
Furniture & Mattresses	0.9%	2.5%	<0.1%	1.7%
Large Appliances	0.3%	1.6%	<0.1%	0.8%
Rubber Products	0.4%	0.8%	<0.1%	0.6%
Total Consumer Products	**8.0%**			

Rumpke Sanitary Landfill - Residential Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges and Other Special Industrial Wast	<0.1%	0.1%	<0.1%	<0.1%
Fines/Dirt	5.2%	1.7%	4.7%	5.8%
Mixed Residue	0.6%	1.1%	0.2%	1.0%
Total Other Wastes	**5.9%**			
Construction & Demolition Debris				
Treated Wood	0.2%	0.7%	<0.1%	0.4%
Untreated Wood	0.9%	1.5%	0.4%	1.4%
Painted/Stained Wood	0.7%	1.3%	0.2%	1.1%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.1%	0.5%	<0.1%	0.3%
Gypsum Drywall - Demolition	0.7%	3.4%	<0.1%	1.8%
Gypsum Drywall - Clean	<0.1%	0.3%	<0.1%	0.2%
Concrete and Bricks	0.4%	1.8%	<0.1%	0.9%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.3%	1.5%	<0.1%	0.8%
Carpet Padding	0.9%	3.0%	<0.1%	1.9%
Asphalt Roofing	<0.1%	0.1%	<0.1%	<0.1%
Plastic Flooring	<0.1%	0.2%	<0.1%	<0.1%
C&D PVC	0.2%	0.9%	<0.1%	0.4%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	0.3%	<0.1%	0.2%
Other C&D	0.1%	0.5%	<0.1%	0.3%
Total C&DD	**4.5%**			
Household Hazardous Wastes				
Paint	<0.1%	0.5%	<0.1%	0.2%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other Batteries	<0.1%	0.1%	<0.1%	0.1%
Other HHW	<0.1%	0.1%	<0.1%	<0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Franklin County Landfill - Residential Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	1.5%	1.8%	0.9%	2.0%
Mixed Paper Products	5.7%	2.7%	4.8%	6.6%
Uncoated OCC/Kraft Packaging	4.6%	3.5%	3.5%	5.8%
Aseptic Cartons / Polycoated	2.1%	0.9%	1.8%	2.3%
Compostable Paper	7.0%	1.8%	6.5%	7.6%
Hard Cover Books	<0.1%	0.3%	<0.1%	0.2%
Shredded Paper	0.1%	0.5%	<0.1%	0.3%
Remainder/Composite Paper	0.1%	0.2%	<0.1%	0.2%
Total Paper	**21.2%**			
Plastic				
#1 PET Bottles/Jars	1.6%	1.0%	1.2%	1.9%
#1 PET Containers	0.9%	0.7%	0.6%	1.1%
#1 PET Clamshells	0.4%	0.2%	0.3%	0.5%
#2 HDPE Containers - Natural	0.5%	0.4%	0.3%	0.6%
#2 HDPE Containers - Colored	0.9%	0.6%	0.7%	1.1%
#4 LDPE Film	1.1%	0.8%	0.8%	1.3%
#5 PP Packaging	1.0%	0.5%	0.8%	1.2%
#6 PS General	0.3%	0.2%	0.2%	0.3%
#6 PS High Impact	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.3%	0.4%	0.2%	0.5%
#6 Expanded Food	0.8%	0.4%	0.6%	0.9%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	0.1%	0.1%	0.2%
Single-Layer Flexible Packaging	3.4%	1.8%	2.8%	4.0%
Other Plastics	2.7%	1.7%	2.2%	3.3%
Garbage Bags	3.5%	1.3%	3.0%	3.9%
Total Plastic	**17.6%**			
Food Wastes				
Uncontained Vegetative Food	8.1%	3.6%	6.9%	9.3%
Uncontained Non-Vegetative	2.9%	2.4%	2.1%	3.7%
Unopened Packaged - Metal	0.1%	0.6%	<0.1%	0.3%
Unopened Packaged - Plastic	0.7%	1.2%	0.3%	1.0%
Unopened Packaged - Paperboard	<0.1%	<0.1%	<0.1%	<0.1%
Unopened Packaged - Film Plastic	2.1%	1.9%	1.5%	2.8%
Unopened Packaged - Glass	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Beverages	0.1%	0.3%	<0.1%	0.2%
Opened Packaged - Beverages	1.6%	1.4%	1.1%	2.0%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**15.7%**			

Franklin County Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	6.7%	8.2%	4.0%	9.4%
Other Plant Materials	<0.1%	<0.1%	N/A	N/A
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	1.0%	2.9%	<0.1%	1.9%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	6.2%	4.2%	4.8%	7.5%
Total Other Organics	**13.8%**			
Glass and Metal				
Glass Containers	2.8%	3.4%	1.7%	3.9%
Other Glass and Ceramics	0.2%	0.4%	<0.1%	0.3%
Aluminum Cans	0.8%	0.6%	0.6%	1.0%
Other Aluminum	0.4%	0.4%	0.3%	0.6%
Ferrous Cans	0.7%	0.5%	0.5%	0.9%
Other Ferrous	1.1%	1.5%	0.6%	1.6%
Other Nonferrous Metal	0.2%	0.7%	<0.1%	0.4%
Mixed Metal / Material	1.0%	2.4%	0.2%	1.8%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.2%	0.3%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**7.5%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.3%	0.7%	<0.1%	0.5%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	0.1%	<0.1%	<0.1%
General Electronics	2.6%	3.7%	1.3%	3.8%
Vaping Devices	0.1%	0.5%	<0.1%	0.3%
Total Electronics	**3.0%**			
Consumer Products				
Textiles - Organic	3.5%	2.8%	2.6%	4.4%
Textiles-Synthetic, Mixed Unk	0.4%	0.8%	0.2%	0.7%
Shoes, Purses, Belts	0.4%	0.6%	0.2%	0.6%
Furniture & Mattresses	2.2%	5.5%	0.4%	4.0%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.8%	1.6%	0.3%	1.3%
Total Consumer Products	**7.3%**			

Franklin County Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	7.1%	2.6%	6.3%	8.0%
Mixed Residue	1.5%	4.2%	0.2%	2.9%
Total Other Wastes	**8.7%**			
Construction & Demolition Debris				
Treated Wood	0.9%	2.3%	0.1%	1.7%
Untreated Wood	1.8%	2.6%	0.9%	2.6%
Painted/Stained Wood	0.6%	1.5%	<0.1%	1.0%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	<0.1%	0.2%	<0.1%	0.1%
Gypsum Drywall - Demolition	<0.1%	<0.1%	N/A	N/A
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.3%	1.4%	<0.1%	0.8%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.8%	3.2%	<0.1%	1.8%
Carpet Padding	0.2%	1.0%	<0.1%	0.5%
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	<0.1%	N/A	N/A
C&D Glass	0.2%	1.2%	<0.1%	0.6%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.4%	1.7%	<0.1%	0.9%
Total C&DD	**5.1%**			
Household Hazardous Wastes				
Paint	<0.1%	<0.1%	N/A	N/A
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.1%	<0.1%	<0.1%
Total HHW	**<0.1%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Countywide Landfill - Residential Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	1.5%	1.4%	1.0%	1.9%
Mixed Paper Products	7.6%	3.4%	6.5%	8.7%
Uncoated OCC/Kraft Packaging	5.1%	4.8%	3.5%	6.7%
Aseptic Cartons / Polycoated	1.1%	1.0%	0.8%	1.4%
Compostable Paper	5.3%	1.8%	4.7%	5.9%
Hard Cover Books	0.3%	0.7%	<0.1%	0.5%
Shredded Paper	<0.1%	0.3%	<0.1%	0.2%
Remainder/Composite Paper	0.3%	0.3%	0.2%	0.4%
Total Paper	**21.2%**			
Plastic				
#1 PET Bottles/Jars	2.0%	1.0%	1.6%	2.3%
#1 PET Containers	0.8%	0.8%	0.6%	1.1%
#1 PET Clamshells	0.3%	0.2%	0.3%	0.4%
#2 HDPE Containers - Natural	0.4%	0.3%	0.4%	0.5%
#2 HDPE Containers - Colored	0.5%	0.3%	0.4%	0.6%
#4 LDPE Film	1.1%	0.7%	0.9%	1.4%
#5 PP Packaging	1.3%	0.6%	1.1%	1.5%
#6 PS General	0.3%	0.1%	0.2%	0.3%
#6 PS High Impact	0.2%	0.1%	0.2%	0.2%
#6 PS Expanded Non-Food	0.6%	0.5%	0.4%	0.7%
#6 Expanded Food	0.6%	0.2%	0.5%	0.6%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	<0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	3.9%	2.3%	3.2%	4.7%
Other Plastics	2.1%	1.2%	1.7%	2.5%
Garbage Bags	3.5%	1.2%	3.1%	3.9%
Total Plastic	**17.7%**			
Food Wastes				
Uncontained Vegetative Food	8.1%	3.2%	7.1%	9.2%
Uncontained Non-Vegetative	3.3%	1.9%	2.6%	3.9%
Unopened Packaged - Metal	0.2%	0.7%	<0.1%	0.5%
Unopened Packaged - Plastic	0.5%	0.8%	0.2%	0.8%
Unopened Packaged - Paperboard	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Film Plastic	3.4%	3.2%	2.3%	4.4%
Unopened Packaged - Glass	0.1%	0.4%	<0.1%	0.3%
Unopened Packaged - Beverages	0.1%	0.5%	<0.1%	0.3%
Opened Packaged - Beverages	1.3%	1.0%	1.0%	1.6%
Other Packaged	<0.1%	<0.1%	N/A	N/A
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**17.1%**			

Countywide Landfill - Residential Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	10.5%	10.0%	7.2%	13.7%
Other Plant Materials	<0.1%	<0.1%	N/A	N/A
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.2%	1.4%	<0.1%	0.7%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.4%	2.4%	<0.1%	1.2%
Other Organic Material	5.5%	4.3%	4.1%	6.9%
Total Other Organics	**16.6%**			
Glass and Metal				
Glass Containers	2.1%	1.4%	1.7%	2.6%
Other Glass and Ceramics	0.2%	0.3%	<0.1%	0.3%
Aluminum Cans	0.9%	0.6%	0.7%	1.1%
Other Aluminum	0.8%	2.3%	<0.1%	1.6%
Ferrous Cans	1.2%	0.8%	0.9%	1.5%
Other Ferrous	0.7%	0.6%	0.5%	0.9%
Other Nonferrous Metal	0.2%	0.4%	<0.1%	0.3%
Mixed Metal / Material	0.3%	1.0%	<0.1%	0.7%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.1%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.7%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.4%	<0.1%	0.3%
Ink Cartridges	<0.1%	0.4%	<0.1%	0.2%
Mixed Media	<0.1%	0.2%	<0.1%	<0.1%
General Electronics	1.2%	2.1%	0.5%	1.9%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.5%**			
Consumer Products				
Textiles - Organic	3.1%	3.1%	2.1%	4.1%
Textiles-Synthetic, Mixed Unk	0.4%	0.7%	0.1%	0.6%
Shoes, Purses, Belts	0.6%	0.9%	0.3%	0.9%
Furniture & Mattresses	0.9%	2.4%	0.1%	1.6%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.4%	0.8%	0.1%	0.6%
Total Consumer Products	**5.3%**			

Countywide Landfill - Residential Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	6.9%	1.7%	6.3%	7.4%
Mixed Residue	0.7%	1.1%	0.3%	1.1%
Total Other Wastes	**7.5%**			
Construction & Demolition Debris				
Treated Wood	<0.1%	0.3%	<0.1%	0.2%
Untreated Wood	1.6%	4.7%	<0.1%	3.1%
Painted/Stained Wood	0.7%	1.9%	<0.1%	1.4%
Plastic Lumber	<0.1%	0.3%	<0.1%	0.1%
Insulation	0.3%	1.3%	<0.1%	0.7%
Gypsum Drywall - Demolition	1.1%	3.8%	<0.1%	2.3%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.5%	2.1%	<0.1%	1.2%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.8%	2.6%	<0.1%	1.6%
Carpet Padding	<0.1%	<0.1%	N/A	N/A
Asphalt Roofing	0.1%	0.9%	<0.1%	0.4%
Plastic Flooring	0.2%	0.7%	<0.1%	0.4%
C&D PVC	<0.1%	<0.1%	N/A	N/A
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.7%	2.0%	<0.1%	1.4%
Total C&DD	**6.1%**			
Household Hazardous Wastes				
Paint	<0.1%	<0.1%	N/A	N/A
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	0.2%	0.7%	<0.1%	0.4%
Other HHW	<0.1%	0.1%	<0.1%	<0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Hancock County Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	2.0%	1.9%	1.4%	2.6%
Mixed Paper Products	7.9%	3.0%	7.0%	8.9%
Uncoated OCC/Kraft Packaging	5.5%	4.0%	4.2%	6.8%
Aseptic Cartons / Polycoated	2.7%	2.4%	1.9%	3.5%
Compostable Paper	6.5%	1.4%	6.1%	7.0%
Hard Cover Books	0.1%	0.4%	<0.1%	0.3%
Shredded Paper	<0.1%	0.3%	<0.1%	0.2%
Remainder/Composite Paper	0.2%	0.4%	0.1%	0.4%
Total Paper	**25.1%**			
Plastic				
#1 PET Bottles/Jars	2.2%	0.8%	2.0%	2.5%
#1 PET Containers	0.8%	0.6%	0.6%	1.0%
#1 PET Clamshells	0.3%	0.3%	0.3%	0.4%
#2 HDPE Containers - Natural	0.5%	0.4%	0.4%	0.6%
#2 HDPE Containers - Colored	1.4%	0.9%	1.2%	1.7%
#4 LDPE Film	1.5%	1.0%	1.1%	1.8%
#5 PP Packaging	1.0%	0.5%	0.8%	1.1%
#6 PS General	0.3%	0.3%	0.2%	0.4%
#6 PS High Impact	0.2%	0.2%	0.1%	0.3%
#6 PS Expanded Non-Food	0.4%	0.4%	0.3%	0.6%
#6 Expanded Food	1.0%	0.7%	0.8%	1.2%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	3.7%	2.9%	2.7%	4.6%
Other Plastics	2.6%	1.8%	2.0%	3.2%
Garbage Bags	3.7%	1.5%	3.2%	4.2%
Total Plastic	**19.7%**			
Food Wastes				
Uncontained Vegetative Food	7.5%	2.7%	6.7%	8.4%
Uncontained Non-Vegetative	3.4%	1.8%	2.8%	4.0%
Unopened Packaged - Metal	<0.1%	0.1%	<0.1%	<0.1%
Unopened Packaged - Plastic	0.4%	0.5%	0.2%	0.6%
Unopened Packaged - Paperboard	0.2%	0.5%	<0.1%	0.3%
Unopened Packaged - Film Plastic	1.7%	2.1%	1.1%	2.4%
Unopened Packaged - Glass	<0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Beverages	0.2%	0.4%	<0.1%	0.3%
Opened Packaged - Beverages	1.5%	1.5%	1.0%	2.0%
Other Packaged	<0.1%	<0.1%	N/A	N/A
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**15.0%**			

Hancock County Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	5.9%	5.6%	4.1%	7.8%
Other Plant Materials	0.1%	0.4%	<0.1%	0.2%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	0.2%	1.3%	<0.1%	0.7%
Pallets and Crates	0.7%	2.4%	<0.1%	1.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	6.4%	5.6%	4.6%	8.2%
Total Other Organics	**13.4%**			
Glass and Metal				
Glass Containers	2.6%	1.6%	2.1%	3.1%
Other Glass and Ceramics	0.1%	0.3%	<0.1%	0.2%
Aluminum Cans	1.0%	0.6%	0.8%	1.2%
Other Aluminum	0.4%	0.3%	0.3%	0.4%
Ferrous Cans	1.2%	0.7%	1.0%	1.4%
Other Ferrous	0.8%	0.8%	0.6%	1.1%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.4%	1.1%	<0.1%	0.7%
Aerosol Containers Non-hazardous	0.3%	0.3%	0.2%	0.4%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.9%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	0.4%	2.0%	<0.1%	1.1%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.7%	<0.1%	0.4%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	0.9%	1.2%	0.5%	1.3%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.6%**			
Consumer Products				
Textiles - Organic	4.1%	4.7%	2.5%	5.6%
Textiles-Synthetic, Mixed Unk	0.8%	1.0%	0.4%	1.1%
Shoes, Purses, Belts	0.5%	0.8%	0.2%	0.7%
Furniture & Mattresses	0.4%	1.8%	<0.1%	1.0%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.4%	0.8%	0.1%	0.7%
Total Consumer Products	**6.1%**			

Hancock County Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	7.3%	2.0%	6.7%	7.9%
Mixed Residue	1.5%	3.1%	0.5%	2.5%
Total Other Wastes	**8.8%**			
Construction & Demolition Debris				
Treated Wood	<0.1%	0.4%	<0.1%	0.2%
Untreated Wood	1.2%	1.9%	0.6%	1.8%
Painted/Stained Wood	0.4%	0.8%	0.1%	0.7%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.2%	1.1%	<0.1%	0.5%
Gypsum Drywall - Demolition	<0.1%	0.4%	<0.1%	0.2%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.4%	1.4%	<0.1%	0.9%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.6%	2.2%	<0.1%	1.3%
Carpet Padding	<0.1%	<0.1%	N/A	N/A
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	<0.1%	N/A	N/A
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.2%	0.9%	<0.1%	0.5%
Total C&DD	**3.2%**			
Household Hazardous Wastes				
Paint	<0.1%	0.2%	<0.1%	<0.1%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.6%	<0.1%	0.4%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Beech Hollow Landfill - Residential Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	1.6%	1.8%	1.1%	2.2%
Mixed Paper Products	9.3%	3.4%	8.1%	10.4%
Uncoated OCC/Kraft Packaging	5.6%	4.5%	4.2%	7.1%
Aseptic Cartons / Polycoated	1.2%	0.9%	0.9%	1.5%
Compostable Paper	5.8%	2.3%	5.0%	6.5%
Hard Cover Books	0.2%	0.6%	<0.1%	0.4%
Shredded Paper	<0.1%	0.3%	<0.1%	0.2%
Remainder/Composite Paper	0.3%	0.5%	0.1%	0.5%
Total Paper	**24.1%**			
Plastic				
#1 PET Bottles/Jars	2.8%	1.1%	2.4%	3.1%
#1 PET Containers	0.6%	0.6%	0.4%	0.8%
#1 PET Clamshells	0.2%	0.2%	0.2%	0.3%
#2 HDPE Containers - Natural	0.8%	0.7%	0.5%	1.0%
#2 HDPE Containers - Colored	0.6%	0.5%	0.5%	0.8%
#4 LDPE Film	1.1%	0.5%	0.9%	1.3%
#5 PP Packaging	1.4%	0.6%	1.1%	1.6%
#6 PS General	0.3%	0.3%	0.2%	0.4%
#6 PS High Impact	0.3%	0.4%	0.2%	0.4%
#6 PS Expanded Non-Food	0.4%	0.4%	0.3%	0.5%
#6 Expanded Food	0.8%	0.4%	0.7%	1.0%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.2%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.5%	2.4%	3.7%	5.3%
Other Plastics	3.8%	3.1%	2.8%	4.8%
Garbage Bags	3.2%	1.5%	2.7%	3.7%
Total Plastic	**20.9%**			
Food Wastes				
Uncontained Vegetative Food	7.2%	3.5%	6.0%	8.3%
Uncontained Non-Vegetative	2.1%	1.5%	1.6%	2.6%
Unopened Packaged - Metal	<0.1%	0.2%	<0.1%	0.1%
Unopened Packaged - Plastic	0.7%	0.9%	0.4%	1.0%
Unopened Packaged - Paperboard	0.1%	0.5%	<0.1%	0.3%
Unopened Packaged - Film Plastic	2.6%	3.5%	1.5%	3.8%
Unopened Packaged - Glass	<0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Beverages	<0.1%	0.2%	<0.1%	0.1%
Opened Packaged - Beverages	2.5%	1.6%	2.0%	3.0%
Other Packaged	<0.1%	<0.1%	N/A	N/A
Food Processing Wastes	<0.1%	0.5%	<0.1%	0.3%
Total Food Wastes	**15.5%**			

Beech Hollow Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Organics				
Yard Waste	5.2%	6.2%	3.1%	7.2%
Other Plant Materials	0.5%	1.5%	<0.1%	1.0%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.3%	1.4%	<0.1%	0.8%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	5.2%	3.6%	4.0%	6.4%
Total Other Organics	**11.2%**			
Glass and Metal				
Glass Containers	2.6%	1.4%	2.1%	3.0%
Other Glass and Ceramics	0.3%	0.5%	0.1%	0.4%
Aluminum Cans	1.1%	0.8%	0.9%	1.4%
Other Aluminum	0.6%	0.6%	0.4%	0.8%
Ferrous Cans	1.8%	1.8%	1.2%	2.4%
Other Ferrous	0.9%	1.5%	0.4%	1.4%
Other Nonferrous Metal	0.1%	0.2%	<0.1%	0.2%
Mixed Metal / Material	0.2%	0.7%	<0.1%	0.5%
Aerosol Containers Non-hazardous	0.3%	0.4%	0.2%	0.5%
Aerosol Containers Hazardous	<0.1%	0.2%	<0.1%	0.1%
Total Glass and Metal	**8.1%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	0.1%	0.7%	<0.1%	0.4%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.4%	0.1%	0.4%
Ink Cartridges	<0.1%	0.2%	<0.1%	0.1%
Mixed Media	<0.1%	0.2%	<0.1%	0.1%
General Electronics	1.2%	1.6%	0.7%	1.8%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.8%**			
Consumer Products				
Textiles - Organic	5.9%	6.3%	3.8%	7.9%
Textiles-Synthetic, Mixed Unk	0.5%	0.7%	0.3%	0.8%
Shoes, Purses, Belts	0.7%	1.0%	0.4%	1.0%
Furniture & Mattresses	1.0%	2.5%	0.2%	1.8%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	1.0%	1.7%	0.4%	1.5%
Total Consumer Products	**9.1%**			

Beech Hollow Landfill - Residential Waste Stream (continued)				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	5.4%	1.3%	5.0%	5.8%
Mixed Residue	0.2%	0.4%	<0.1%	0.3%
Total Other Wastes	**5.6%**			
Construction & Demolition Debris				
Treated Wood	0.2%	1.1%	<0.1%	0.6%
Untreated Wood	0.9%	1.3%	0.4%	1.3%
Painted/Stained Wood	0.7%	1.5%	0.2%	1.2%
Plastic Lumber	<0.1%	0.2%	<0.1%	<0.1%
Insulation	0.2%	0.8%	<0.1%	0.5%
Gypsum Drywall - Demolition	<0.1%	<0.1%	<0.1%	<0.1%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.2%	1.0%	<0.1%	0.5%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	<0.1%	0.5%	<0.1%	0.3%
Carpet Padding	0.2%	0.7%	<0.1%	0.4%
Asphalt Roofing	0.2%	1.5%	<0.1%	0.7%
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	0.4%	<0.1%	0.2%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	0.2%	1.0%	<0.1%	0.5%
Other C&D	0.2%	0.7%	<0.1%	0.5%
Total C&DD	**3.2%**			
Household Hazardous Wastes				
Paint	0.6%	2.1%	<0.1%	1.3%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.2%	<0.1%	0.1%
Other HHW	<0.1%	0.3%	<0.1%	0.2%
Total HHW	**0.7%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Appendix C

ICI Waste Composition by Site

Rumpke Sanitary Landfill - ICI Waste Stream				
Material Components	Mean Composition	Standard Deviation	Confidence Limits Lower	Confidence Limits Upper
Paper				
High Grade Office Paper	2.4%	2.4%	1.6%	3.2%
Mixed Paper Products	7.4%	6.4%	5.3%	9.5%
Uncoated OCC/Kraft Packaging	8.4%	6.3%	6.4%	10.5%
Aseptic Cartons / Polycoated	2.0%	1.9%	1.3%	2.6%
Compostable Paper	7.1%	4.3%	5.7%	8.5%
Hard Cover Books	0.2%	0.9%	<0.1%	0.5%
Shredded Paper	0.4%	1.5%	<0.1%	0.8%
Remainder/Composite Paper	0.5%	0.9%	0.2%	0.8%
Total Paper	**28.4%**			
Plastic				
#1 PET Bottles/Jars	1.9%	0.9%	1.6%	2.2%
#1 PET Containers	0.8%	0.9%	0.5%	1.1%
#1 PET Clamshells	0.3%	0.2%	0.2%	0.4%
#2 HDPE Containers - Natural	0.5%	0.4%	0.4%	0.6%
#2 HDPE Containers - Colored	1.4%	1.5%	0.9%	1.9%
#4 LDPE Film	0.8%	0.5%	0.7%	1.0%
#5 PP Packaging	1.7%	1.1%	1.3%	2.0%
#6 PS General	0.3%	0.5%	0.2%	0.5%
#6 PS High Impact	0.2%	0.2%	0.2%	0.3%
#6 PS Expanded Non-Food	0.5%	0.5%	0.3%	0.7%
#6 Expanded Food	1.2%	1.5%	0.7%	1.6%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.2%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.3%	2.8%	3.3%	5.2%
Other Plastics	4.0%	4.0%	2.7%	5.3%
Garbage Bags	3.5%	1.2%	3.1%	3.9%
Total Plastic	**21.5%**			
Food Wastes				
Uncontained Vegetative Food	7.0%	3.7%	5.9%	8.2%
Uncontained Non-Vegetative	3.3%	3.2%	2.3%	4.3%
Unopened Packaged - Metal	<0.1%	0.2%	<0.1%	<0.1%
Unopened Packaged - Plastic	0.9%	1.9%	0.3%	1.6%
Unopened Packaged - Paperboard	0.1%	0.7%	<0.1%	0.3%
Unopened Packaged - Film Plastic	1.8%	1.6%	1.3%	2.4%
Unopened Packaged - Glass	<0.1%	0.4%	<0.1%	0.2%
Unopened Packaged - Beverages	0.3%	0.8%	<0.1%	0.5%
Opened Packaged - Beverages	1.9%	2.0%	1.3%	2.5%
Other Packaged	<0.1%	0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**15.6%**			

Rumpke Sanitary Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	3.0%	4.3%	1.6%	4.5%
Other Plant Materials	0.3%	0.9%	<0.1%	0.6%
Woody Material >10"	0.1%	0.7%	<0.1%	0.4%
Agricultural Plant Materials	0.4%	2.3%	<0.1%	1.2%
Pallets and Crates	1.2%	2.9%	0.3%	2.1%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	4.4%	4.6%	2.9%	5.9%
Total Other Organics	**9.4%**			
Glass and Metal				
Glass Containers	2.5%	2.2%	1.8%	3.3%
Other Glass and Ceramics	0.2%	0.7%	<0.1%	0.4%
Aluminum Cans	0.8%	0.4%	0.7%	0.9%
Other Aluminum	0.4%	0.5%	0.2%	0.5%
Ferrous Cans	0.7%	0.6%	0.5%	0.9%
Other Ferrous	1.2%	2.6%	0.3%	2.1%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.3%	1.0%	<0.1%	0.6%
Aerosol Containers Non-hazardous	0.2%	0.3%	0.1%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.5%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.1%	0.2%	<0.1%	0.2%
Ink Cartridges	<0.1%	0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	1.2%	4.2%	<0.1%	2.6%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.4%**			
Consumer Products				
Textiles - Organic	2.9%	4.4%	1.5%	4.4%
Textiles-Synthetic, Mixed Unk	0.3%	0.3%	0.1%	0.4%
Shoes, Purses, Belts	0.7%	1.8%	0.1%	1.3%
Furniture & Mattresses	1.6%	4.1%	0.3%	2.9%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.3%	0.6%	0.1%	0.5%
Total Consumer Products	**5.8%**			

Rumpke Sanitary Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	0.3%	1.2%	<0.1%	0.7%
Fines/Dirt	4.7%	2.0%	4.0%	5.3%
Mixed Residue	0.6%	2.0%	<0.1%	1.3%
Total Other Wastes	**5.6%**			
Construction & Demolition Debris				
Treated Wood	0.6%	2.0%	<0.1%	1.2%
Untreated Wood	1.6%	3.3%	0.5%	2.7%
Painted/Stained Wood	0.3%	1.1%	<0.1%	0.7%
Plastic Lumber	0.2%	1.0%	<0.1%	0.5%
Insulation	0.1%	0.6%	<0.1%	0.3%
Gypsum Drywall - Demolition	0.9%	2.9%	<0.1%	1.8%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	<0.1%	<0.1%	N/A	N/A
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	1.3%	4.7%	<0.1%	2.8%
Carpet Padding	0.1%	0.7%	<0.1%	0.4%
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	0.1%	0.9%	<0.1%	0.4%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.4%	1.6%	<0.1%	0.9%
Total C&DD	**5.5%**			
Household Hazardous Wastes				
Paint	0.2%	1.0%	<0.1%	0.6%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.3%	<0.1%	0.2%
Total HHW	**0.4%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Franklin County Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.4%	5.6%	0.6%	4.2%
Mixed Paper Products	6.3%	4.4%	4.9%	7.8%
Uncoated OCC/Kraft Packaging	8.7%	7.0%	6.4%	11.0%
Aseptic Cartons / Polycoated	1.9%	1.6%	1.4%	2.4%
Compostable Paper	7.0%	2.5%	6.2%	7.8%
Hard Cover Books	0.1%	0.6%	<0.1%	0.3%
Shredded Paper	0.2%	0.7%	<0.1%	0.4%
Remainder/Composite Paper	0.3%	0.5%	0.1%	0.5%
Total Paper	**26.9%**			
Plastic				
#1 PET Bottles/Jars	1.1%	0.6%	0.9%	1.3%
#1 PET Containers	0.7%	0.6%	0.5%	0.9%
#1 PET Clamshells	0.3%	0.2%	0.2%	0.4%
#2 HDPE Containers - Natural	0.5%	0.5%	0.3%	0.7%
#2 HDPE Containers - Colored	1.0%	1.4%	0.5%	1.5%
#4 LDPE Film	0.8%	0.4%	0.6%	0.9%
#5 PP Packaging	1.2%	0.9%	0.9%	1.5%
#6 PS General	0.3%	0.2%	0.2%	0.4%
#6 PS High Impact	0.3%	0.3%	0.2%	0.4%
#6 PS Expanded Non-Food	0.5%	0.5%	0.4%	0.7%
#6 Expanded Food	1.3%	1.5%	0.8%	1.8%
#7 Compostable	<0.1%	<0.1%	N/A	N/A
Multi-Layer Flexible Packaging	0.1%	0.1%	0.1%	0.2%
Single-Layer Flexible Packaging	4.8%	3.2%	3.8%	5.9%
Other Plastics	3.4%	4.5%	1.9%	4.8%
Garbage Bags	3.5%	1.3%	3.1%	3.9%
Total Plastic	**19.8%**			
Food Wastes				
Uncontained Vegetative Food	8.4%	6.3%	6.3%	10.4%
Uncontained Non-Vegetative	2.7%	2.3%	2.0%	3.5%
Unopened Packaged - Metal	<0.1%	0.2%	<0.1%	0.1%
Unopened Packaged - Plastic	0.4%	0.5%	0.2%	0.5%
Unopened Packaged - Paperboard	0.3%	1.7%	<0.1%	0.9%
Unopened Packaged - Film Plastic	1.8%	2.5%	1.0%	2.7%
Unopened Packaged - Glass	<0.1%	<0.1%	N/A	N/A
Unopened Packaged - Beverages	0.3%	0.5%	0.1%	0.5%
Opened Packaged - Beverages	2.0%	1.8%	1.4%	2.6%
Other Packaged	<0.1%	<0.1%	N/A	N/A
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**15.9%**			

Franklin County Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	2.1%	4.4%	0.7%	3.5%
Other Plant Materials	0.4%	2.1%	<0.1%	1.1%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	0.7%	2.2%	<0.1%	1.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.5%	2.7%	<0.1%	1.3%
Other Organic Material	1.6%	1.6%	1.1%	2.1%
Total Other Organics	**5.2%**			
Glass and Metal				
Glass Containers	2.2%	3.2%	1.2%	3.2%
Other Glass and Ceramics	0.5%	1.5%	<0.1%	1.0%
Aluminum Cans	0.5%	0.4%	0.4%	0.7%
Other Aluminum	0.5%	0.7%	0.3%	0.7%
Ferrous Cans	0.8%	1.1%	0.4%	1.2%
Other Ferrous	1.3%	1.8%	0.7%	1.8%
Other Nonferrous Metal	0.2%	0.8%	<0.1%	0.4%
Mixed Metal / Material	0.2%	0.5%	<0.1%	0.3%
Aerosol Containers Non-hazardous	0.1%	0.2%	<0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.3%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	0.2%	0.6%	<0.1%	0.4%
Ink Cartridges	0.1%	0.4%	<0.1%	0.2%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	2.0%	6.7%	<0.1%	4.2%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**2.3%**			
Consumer Products				
Textiles - Organic	3.2%	5.7%	1.3%	5.1%
Textiles-Synthetic, Mixed Unk	0.7%	2.4%	<0.1%	1.5%
Shoes, Purses, Belts	0.3%	0.8%	<0.1%	0.6%
Furniture & Mattresses	2.0%	6.1%	<0.1%	3.9%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	0.7%	1.1%	0.3%	1.0%
Total Consumer Products	**6.9%**			

Franklin County Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges & Other Special Industrial Wastes	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	6.4%	2.8%	5.5%	7.3%
Mixed Residue	1.1%	2.6%	0.3%	2.0%
Total Other Wastes	**7.5%**			
Construction & Demolition Debris				
Treated Wood	1.9%	6.1%	<0.1%	3.9%
Untreated Wood	2.4%	5.2%	0.7%	4.1%
Painted/Stained Wood	1.9%	4.7%	0.3%	3.4%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.3%	1.3%	<0.1%	0.8%
Gypsum Drywall - Demolition	0.1%	0.6%	<0.1%	0.3%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.7%	2.4%	<0.1%	1.5%
Ceramics/Porcelain	<0.1%	0.3%	<0.1%	0.2%
Wall-to-wall Carpet	0.7%	2.8%	<0.1%	1.6%
Carpet Padding	<0.1%	<0.1%	N/A	N/A
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	0.3%	<0.1%	0.1%
C&D Glass	0.5%	3.0%	<0.1%	1.5%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.2%	0.9%	<0.1%	0.5%
Total C&DD	**8.8%**			
Household Hazardous Wastes				
Paint	0.2%	1.4%	<0.1%	0.7%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	<0.1%	<0.1%	<0.1%	<0.1%
Total HHW	**0.3%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Countywide Landfill - ICI Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	1.8%	2.5%	1.0%	2.6%
Mixed Paper Products	7.3%	3.9%	6.0%	8.6%
Uncoated OCC/Kraft Packaging	7.6%	6.1%	5.6%	9.6%
Aseptic Cartons / Polycoated	1.3%	1.5%	0.9%	1.8%
Compostable Paper	6.8%	3.3%	5.7%	7.8%
Hard Cover Books	<0.1%	<0.1%	N/A	N/A
Shredded Paper	0.6%	2.8%	<0.1%	1.5%
Remainder/Composite Paper	0.3%	0.4%	0.2%	0.5%
Total Paper	**25.8%**			
Plastic				
#1 PET Bottles/Jars	1.5%	0.6%	1.3%	1.7%
#1 PET Containers	0.8%	0.7%	0.5%	1.0%
#1 PET Clamshells	0.3%	0.3%	0.2%	0.4%
#2 HDPE Containers - Natural	0.4%	0.3%	0.3%	0.5%
#2 HDPE Containers - Colored	0.6%	0.6%	0.4%	0.8%
#4 LDPE Film	0.9%	0.6%	0.7%	1.1%
#5 PP Packaging	1.2%	0.9%	1.0%	1.5%
#6 PS General	0.4%	0.3%	0.3%	0.5%
#6 PS High Impact	0.3%	0.3%	0.2%	0.4%
#6 PS Expanded Non-Food	0.6%	0.6%	0.4%	0.8%
#6 Expanded Food	0.6%	0.6%	0.4%	0.8%
#7 Compostable	<0.1%	<0.1%	N/A	N/A
Multi-Layer Flexible Packaging	0.1%	<0.1%	<0.1%	0.2%
Single-Layer Flexible Packaging	6.2%	4.4%	4.8%	7.7%
Other Plastics	3.1%	2.6%	2.2%	3.9%
Garbage Bags	3.4%	1.1%	3.1%	3.8%
Total Plastic	**20.5%**			
Food Wastes				
Uncontained Vegetative Food	9.1%	6.6%	7.0%	11.3%
Uncontained Non-Vegetative	3.6%	3.1%	2.6%	4.6%
Unopened Packaged - Metal	<0.1%	0.3%	<0.1%	0.2%
Unopened Packaged - Plastic	0.4%	0.6%	0.2%	0.6%
Unopened Packaged - Paperboard	<0.1%	0.3%	<0.1%	0.1%
Unopened Packaged - Film Plastic	1.8%	1.5%	1.3%	2.2%
Unopened Packaged - Glass	0.1%	0.3%	<0.1%	0.2%
Unopened Packaged - Beverages	0.2%	0.8%	<0.1%	0.5%
Opened Packaged - Beverages	1.5%	1.7%	1.0%	2.1%
Other Packaged	0.4%	2.4%	<0.1%	1.2%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**17.3%**			

Countywide Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	4.1%	6.4%	2.0%	6.2%
Other Plant Materials	<0.1%	<0.1%	N/A	N/A
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	1.5%	3.4%	0.4%	2.7%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	0.4%	<0.1%	0.2%
Other Organic Material	3.1%	3.5%	1.9%	4.2%
Total Other Organics	**8.8%**			
Glass and Metal				
Glass Containers	2.3%	2.7%	1.4%	3.2%
Other Glass and Ceramics	<0.1%	0.2%	<0.1%	0.1%
Aluminum Cans	0.8%	0.5%	0.6%	1.0%
Other Aluminum	0.5%	0.6%	0.3%	0.7%
Ferrous Cans	1.1%	1.3%	0.6%	1.5%
Other Ferrous	0.8%	1.1%	0.4%	1.2%
Other Nonferrous Metal	0.2%	0.4%	<0.1%	0.3%
Mixed Metal / Material	0.6%	2.3%	<0.1%	1.4%
Aerosol Containers Non-hazardous	0.1%	0.2%	<0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.4%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	N/A	N/A
Electronic Equipment Cables and Wires	0.2%	0.4%	<0.1%	0.4%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	0.2%	0.9%	<0.1%	0.4%
General Electronics	0.9%	1.6%	0.4%	1.4%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.3%**			
Consumer Products				
Textiles - Organic	1.7%	1.5%	1.2%	2.2%
Textiles-Synthetic, Mixed Unk	0.4%	1.0%	<0.1%	0.7%
Shoes, Purses, Belts	0.3%	0.5%	0.1%	0.4%
Furniture & Mattresses	3.3%	6.3%	1.2%	5.3%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	1.0%	3.4%	<0.1%	2.1%
Total Consumer Products	**6.6%**			

Countywide Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges and Other Special Industrial Wast	0.6%	3.6%	<0.1%	1.8%
Fines/Dirt	6.7%	3.0%	5.8%	7.7%
Mixed Residue	0.7%	1.7%	0.2%	1.3%
Total Other Wastes	**8.1%**			
Construction & Demolition Debris				
Treated Wood	0.4%	1.2%	<0.1%	0.8%
Untreated Wood	1.6%	2.8%	0.6%	2.5%
Painted/Stained Wood	1.0%	2.9%	<0.1%	1.9%
Plastic Lumber	<0.1%	0.3%	<0.1%	0.2%
Insulation	<0.1%	0.1%	<0.1%	<0.1%
Gypsum Drywall - Demolition	<0.1%	0.2%	<0.1%	<0.1%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.9%	3.4%	<0.1%	2.0%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.3%	1.2%	<0.1%	0.7%
Carpet Padding	0.2%	0.9%	<0.1%	0.5%
Asphalt Roofing	0.2%	0.9%	<0.1%	0.5%
Plastic Flooring	0.3%	1.1%	<0.1%	0.6%
C&D PVC	<0.1%	<0.1%	<0.1%	<0.1%
C&D Glass	<0.1%	0.4%	<0.1%	0.2%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.1%	0.4%	<0.1%	0.2%
Total C&DD	**5.0%**			
Household Hazardous Wastes				
Paint	<0.1%	0.1%	<0.1%	<0.1%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	0.1%	0.6%	<0.1%	0.3%
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.2%	<0.1%	0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Hancock County Landfill - ICI Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.7%	2.5%	1.8%	3.5%
Mixed Paper Products	7.9%	6.2%	5.8%	9.9%
Uncoated OCC/Kraft Packaging	7.6%	5.4%	5.8%	9.3%
Aseptic Cartons / Polycoated	2.4%	2.2%	1.7%	3.1%
Compostable Paper	6.7%	2.5%	5.9%	7.6%
Hard Cover Books	<0.1%	0.2%	<0.1%	0.1%
Shredded Paper	0.2%	0.5%	<0.1%	0.3%
Remainder/Composite Paper	0.3%	0.7%	0.1%	0.5%
Total Paper	**27.8%**			
Plastic				
#1 PET Bottles/Jars	1.6%	1.1%	1.2%	2.0%
#1 PET Containers	0.8%	1.1%	0.5%	1.2%
#1 PET Clamshells	0.3%	0.3%	0.2%	0.4%
#2 HDPE Containers - Natural	0.5%	0.5%	0.3%	0.6%
#2 HDPE Containers - Colored	0.6%	0.5%	0.4%	0.8%
#4 LDPE Film	1.7%	2.4%	0.9%	2.5%
#5 PP Packaging	1.4%	0.7%	1.2%	1.6%
#6 PS General	0.3%	0.3%	0.2%	0.4%
#6 PS High Impact	0.3%	0.3%	0.2%	0.4%
#6 PS Expanded Non-Food	0.7%	1.3%	0.3%	1.2%
#6 Expanded Food	0.9%	0.9%	0.6%	1.2%
#7 Compostable	<0.1%	<0.1%	N/A	N/A
Multi-Layer Flexible Packaging	0.1%	<0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.9%	5.1%	3.2%	6.5%
Other Plastics	2.6%	1.6%	2.0%	3.1%
Garbage Bags	3.9%	1.7%	3.4%	4.5%
Total Plastic	**20.7%**			
Food Wastes				
Uncontained Vegetative Food	8.0%	5.5%	6.2%	9.8%
Uncontained Non-Vegetative	4.6%	6.1%	2.6%	6.6%
Unopened Packaged - Metal	0.2%	0.8%	<0.1%	0.4%
Unopened Packaged - Plastic	0.6%	1.1%	0.2%	1.0%
Unopened Packaged - Paperboard	0.1%	0.3%	<0.1%	0.2%
Unopened Packaged - Film Plastic	1.4%	1.6%	0.8%	1.9%
Unopened Packaged - Glass	<0.1%	0.2%	<0.1%	0.2%
Unopened Packaged - Beverages	<0.1%	0.2%	<0.1%	0.1%
Opened Packaged - Beverages	2.0%	2.0%	1.3%	2.6%
Other Packaged	<0.1%	0.3%	<0.1%	0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**17.0%**			

Hancock County Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	3.6%	6.1%	1.6%	5.6%
Other Plant Materials	<0.1%	0.4%	<0.1%	0.2%
Woody Material >10"	<0.1%	<0.1%	N/A	N/A
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	2.0%	4.6%	0.5%	3.5%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	<0.1%	<0.1%	N/A	N/A
Other Organic Material	3.0%	3.3%	1.9%	4.1%
Total Other Organics	**8.6%**			
Glass and Metal				
Glass Containers	1.6%	1.8%	1.0%	2.2%
Other Glass and Ceramics	<0.1%	0.2%	<0.1%	0.1%
Aluminum Cans	0.7%	0.6%	0.5%	0.9%
Other Aluminum	0.3%	0.3%	0.2%	0.3%
Ferrous Cans	1.0%	2.4%	0.3%	1.8%
Other Ferrous	0.5%	0.7%	0.3%	0.8%
Other Nonferrous Metal	<0.1%	0.2%	<0.1%	0.1%
Mixed Metal / Material	0.2%	0.9%	<0.1%	0.5%
Aerosol Containers Non-hazardous	0.2%	0.2%	0.1%	0.3%
Aerosol Containers Hazardous	<0.1%	0.1%	<0.1%	<0.1%
Total Glass and Metal	**4.7%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	0.6%	<0.1%	0.3%
Data Bearing Electronics	<0.1%	<0.1%	<0.1%	<0.1%
Electronic Equipment Cables and Wires	<0.1%	0.2%	<0.1%	0.1%
Ink Cartridges	<0.1%	0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	0.2%	<0.1%	<0.1%
General Electronics	1.1%	1.7%	0.5%	1.7%
Vaping Devices	<0.1%	0.1%	<0.1%	<0.1%
Total Electronics	**1.4%**			
Consumer Products				
Textiles - Organic	2.6%	3.0%	1.6%	3.6%
Textiles-Synthetic, Mixed Unk	0.5%	0.7%	0.2%	0.7%
Shoes, Purses, Belts	0.3%	0.6%	0.1%	0.5%
Furniture & Mattresses	2.4%	5.5%	0.6%	4.2%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	1.0%	2.4%	0.2%	1.8%
Total Consumer Products	**6.8%**			

Hancock County Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	7.0%	3.1%	6.0%	8.0%
Mixed Residue	1.1%	1.5%	0.6%	1.6%
Total Other Wastes	**8.1%**			
Construction & Demolition Debris				
Treated Wood	0.7%	3.0%	<0.1%	1.7%
Untreated Wood	1.3%	2.3%	0.5%	2.0%
Painted/Stained Wood	0.4%	1.3%	<0.1%	0.9%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.7%	3.3%	<0.1%	1.7%
Gypsum Drywall - Demolition	0.3%	0.9%	<0.1%	0.6%
Gypsum Drywall - Clean	<0.1%	<0.1%	N/A	N/A
Concrete and Bricks	0.1%	0.4%	<0.1%	0.2%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	<0.1%	0.5%	<0.1%	0.3%
Carpet Padding	<0.1%	<0.1%	N/A	N/A
Asphalt Roofing	<0.1%	0.3%	<0.1%	0.1%
Plastic Flooring	<0.1%	0.4%	<0.1%	0.2%
C&D PVC	0.1%	0.6%	<0.1%	0.3%
C&D Glass	0.3%	1.5%	<0.1%	0.8%
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.5%	2.2%	<0.1%	1.3%
Total C&DD	**4.5%**			
Household Hazardous Wastes				
Paint	0.3%	1.1%	<0.1%	0.6%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	0.2%	<0.1%	0.1%
Other HHW	<0.1%	<0.1%	<0.1%	<0.1%
Total HHW	**0.4%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Beech Hollow Landfill - ICI Waste Stream				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Paper				
High Grade Office Paper	2.0%	2.3%	1.2%	2.7%
Mixed Paper Products	8.4%	3.7%	7.2%	9.6%
Uncoated OCC/Kraft Packaging	6.7%	5.9%	4.8%	8.7%
Aseptic Cartons / Polycoated	1.4%	1.2%	1.0%	1.8%
Compostable Paper	6.8%	2.7%	6.0%	7.7%
Hard Cover Books	<0.1%	0.4%	<0.1%	0.2%
Shredded Paper	1.3%	3.3%	0.2%	2.4%
Remainder/Composite Paper	0.6%	1.1%	0.2%	0.9%
Total Paper	**27.3%**			
Plastic				
#1 PET Bottles/Jars	2.4%	0.9%	2.0%	2.7%
#1 PET Containers	0.6%	0.7%	0.4%	0.8%
#1 PET Clamshells	0.3%	0.2%	0.2%	0.3%
#2 HDPE Containers - Natural	0.9%	0.7%	0.7%	1.1%
#2 HDPE Containers - Colored	0.8%	0.9%	0.5%	1.1%
#4 LDPE Film	0.8%	0.4%	0.6%	0.9%
#5 PP Packaging	1.6%	1.3%	1.2%	2.0%
#6 PS General	0.2%	0.2%	0.2%	0.3%
#6 PS High Impact	0.2%	0.3%	0.2%	0.3%
#6 PS Expanded Non-Food	0.5%	0.5%	0.4%	0.7%
#6 Expanded Food	1.1%	1.2%	0.7%	1.5%
#7 Compostable	<0.1%	<0.1%	<0.1%	<0.1%
Multi-Layer Flexible Packaging	<0.1%	0.1%	<0.1%	0.1%
Single-Layer Flexible Packaging	4.8%	2.2%	4.1%	5.5%
Other Plastics	3.7%	3.4%	2.5%	4.8%
Garbage Bags	3.6%	1.4%	3.1%	4.0%
Total Plastic	**21.6%**			
Food Wastes				
Uncontained Vegetative Food	8.1%	5.6%	6.3%	10.0%
Uncontained Non-Vegetative	2.1%	1.6%	1.5%	2.6%
Unopened Packaged - Metal	0.2%	0.8%	<0.1%	0.4%
Unopened Packaged - Plastic	0.5%	0.8%	0.2%	0.8%
Unopened Packaged - Paperboard	<0.1%	0.2%	<0.1%	0.1%
Unopened Packaged - Film Plastic	1.8%	1.4%	1.3%	2.2%
Unopened Packaged - Glass	0.1%	0.5%	<0.1%	0.3%
Unopened Packaged - Beverages	0.6%	1.6%	<0.1%	1.1%
Opened Packaged - Beverages	3.0%	2.1%	2.3%	3.6%
Other Packaged	<0.1%	<0.1%	<0.1%	<0.1%
Food Processing Wastes	<0.1%	<0.1%	N/A	N/A
Total Food Wastes	**16.4%**			

Beech Hollow Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Organics				
Yard Waste	3.1%	5.6%	1.3%	4.9%
Other Plant Materials	<0.1%	<0.1%	N/A	N/A
Woody Material >10"	0.1%	0.8%	<0.1%	0.4%
Agricultural Plant Materials	<0.1%	<0.1%	N/A	N/A
Pallets and Crates	1.4%	3.2%	0.3%	2.4%
Manure	<0.1%	<0.1%	N/A	N/A
Dead Animals	0.4%	2.6%	<0.1%	1.3%
Other Organic Material	4.1%	4.3%	2.7%	5.5%
Total Other Organics	**9.2%**			
Glass and Metal				
Glass Containers	1.8%	1.2%	1.3%	2.2%
Other Glass and Ceramics	0.3%	0.6%	<0.1%	0.5%
Aluminum Cans	1.1%	0.6%	0.9%	1.3%
Other Aluminum	0.3%	0.2%	0.3%	0.4%
Ferrous Cans	1.1%	0.9%	0.8%	1.4%
Other Ferrous	0.6%	1.0%	0.3%	0.9%
Other Nonferrous Metal	0.1%	0.3%	<0.1%	0.2%
Mixed Metal / Material	0.9%	2.9%	<0.1%	1.9%
Aerosol Containers Non-hazardous	0.2%	0.2%	<0.1%	0.2%
Aerosol Containers Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass and Metal	**6.4%**			
Electronics				
TVs and Monitors - CRT	<0.1%	<0.1%	N/A	N/A
TVs and Monitors - LCD/LED/Plasma	<0.1%	<0.1%	N/A	N/A
Data Bearing Electronics	<0.1%	<0.1%	N/A	N/A
Electronic Equipment Cables and Wires	0.4%	1.1%	<0.1%	0.8%
Ink Cartridges	<0.1%	<0.1%	<0.1%	<0.1%
Mixed Media	<0.1%	<0.1%	<0.1%	<0.1%
General Electronics	0.7%	1.3%	0.3%	1.1%
Vaping Devices	<0.1%	<0.1%	<0.1%	<0.1%
Total Electronics	**1.2%**			
Consumer Products				
Textiles - Organic	3.3%	3.6%	2.1%	4.5%
Textiles-Synthetic, Mixed Unk	0.3%	0.5%	0.2%	0.5%
Shoes, Purses, Belts	0.5%	0.7%	0.3%	0.7%
Furniture & Mattresses	1.1%	3.0%	0.1%	2.1%
Large Appliances	<0.1%	<0.1%	N/A	N/A
Rubber Products	1.2%	2.3%	0.4%	1.9%
Total Consumer Products	**6.3%**			

Beech Hollow Landfill - ICI Waste Stream (continued)				
	Mean	Standard	Confidence Limits	
Material Components	Composition	Deviation	Lower	Upper
Other Wastes				
Sludges and Other Special Industrial Waste	<0.1%	<0.1%	N/A	N/A
Fines/Dirt	5.3%	1.4%	4.9%	5.8%
Mixed Residue	1.6%	5.4%	<0.1%	3.4%
Total Other Wastes	**6.9%**			
Construction & Demolition Debris				
Treated Wood	0.4%	1.3%	<0.1%	0.8%
Untreated Wood	1.2%	3.0%	0.3%	2.2%
Painted/Stained Wood	0.5%	1.4%	<0.1%	0.9%
Plastic Lumber	<0.1%	<0.1%	N/A	N/A
Insulation	0.2%	1.0%	<0.1%	0.5%
Gypsum Drywall - Demolition	0.5%	1.4%	<0.1%	0.9%
Gypsum Drywall - Clean	0.6%	3.4%	<0.1%	1.7%
Concrete and Bricks	0.2%	1.0%	<0.1%	0.5%
Ceramics/Porcelain	<0.1%	<0.1%	N/A	N/A
Wall-to-wall Carpet	0.2%	1.3%	<0.1%	0.6%
Carpet Padding	0.3%	1.4%	<0.1%	0.8%
Asphalt Roofing	<0.1%	<0.1%	N/A	N/A
Plastic Flooring	<0.1%	<0.1%	N/A	N/A
C&D PVC	<0.1%	0.4%	<0.1%	0.2%
C&D Glass	<0.1%	<0.1%	N/A	N/A
C&D Metal	<0.1%	<0.1%	N/A	N/A
Other C&D	0.4%	1.9%	<0.1%	1.1%
Total C&DD	**4.5%**			
Household Hazardous Wastes				
Paint	<0.1%	0.5%	<0.1%	0.2%
Flourescent Lighting	<0.1%	<0.1%	<0.1%	<0.1%
Li-Ion Batteries	<0.1%	<0.1%	N/A	N/A
Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	<0.1%	0.2%	<0.1%	<0.1%
Total HHW	**0.2%**			
Total	**100.0%**			

Notes: Composition based on 36 samples.
Confidence Limits are calculated at the 95% confidence level.
N/A indicates the material was not found while sampling and confidence intervals cannot be calculated.

Appendix D

Material Category Definitions

Material Categories and Subcategories		
	Material Categories and Subcategories	**Definition/Description**
	PAPER	
1	High Grade Office Paper Products (Recyclable Paper)	High-grade white or light-colored bond and copy machine papers and envelopes, and continuous-feed computer printouts and forms of all types, except multiple copy carbonless paper.
2	Mixed Paper Products (Recyclable Paper)	Includes printed groundwood newsprint, colored papers, notebook or other lined paper, magazines, catalogs and similar products with glossy paper, envelopes with plastic windows, non-corrugated paperboard, carbonless copy paper, junk mail and telephone books. Includes non-corrugated paperboard packaging, and other packaging made from groundwood paper. Includes containers such as egg cartons, and empty cereal and cracker boxes.
3	Uncoated OCC and Kraft Packaging and Paper Products (Recyclable Paper)	Unwaxed Kraft paper corrugated containers, boxes, and other products, unless poly- or foil-laminated. Includes cardboard boxes and brown Kraft paper bags and packaging paper. Could include cat scratching pads.
4	Aseptic Cartons, Gable Top Containers & Other Polycoated Packaging (Recyclable Paper)	Multi-layer paper packaging designed to keep food and other putrescible contents fresh. Includes items like paper soup cartons and paper juice cartons. Includes polycoated paper packaging often used for liquid products such as milk, plant-based beverages, and juice that are mostly are opened by pushing open with a screw top closure or the gables at the top back and pulling the top (spout) out. Also includes other polycoated paper packaging such as ice cream cartons and frozen food boxes, polylined paper cups for hot and cold beverages, coffee sleeves, and takeout cartons, both clean and food-soiled.
5	Compostable Paper Packaging and Products (Compostable Organics)	Non-polylined/polycoated packaging paper that does not fit the mixed/low grade paper packaging category and that may be composted such as food-soiled pizza boxes, waxed cardboard boxes, and uncoated cups, French fry cartons, boats, clamshells and similar containers from fast food establishments that may or may not be soiled with food. Non-packaging paper that do not fit other paper categories and that can be composted such as paper towels/napkins, paper cups, and plates (if purchased empty), and tissues. Includes products lined with compostable plastics that meet ASTM D6400 or D6868.
6	Hard Cover Books (Recyclable Paper)	Books bound with rigid protective covers.
7	Shredded Paper (Recyclable Paper)	Includes shredded newsprint and documents from residential and other sources.
8	Remainder Composite Paper Products (Trash)	All paper that doesn't fit into the categories specified above and items that are primarily paper but include other materials such as plastic or metal. Key points: • If the sorter is 99% sure that the generator intended to reuse the paper in such a way that it became contaminated for recycling, put that paper into this category (e.g., paper used to dispose of chewing gum, paper sprayed with paint). • If it would take an effort to make the paper recyclable, put it into this category. Examples: Paper or boxboard coated with plastic or metal, photographs, laminated paper.
	PLASTIC	
9	#1 PET Bottles/Jars (Commingled Recyclables)	Clear or colored polyethylene terephthalate (PET) beverage and non-beverage containers (bottles and jugs) bearing the number "1" in the triangular recycling symbol and/or the letters "PET." Examples include soda, water, and other beverage bottles; mouthwash bottles; peanut butter containers; salad dressing, ketchup and vegetable oil containers; shampoo and cleaning product bottles; and waterproof packaging.
10	#1 PET Non-Bottle Rigid Containers & Packaging (Commingled Recyclables)	Clear or colored polyethylene terephthalate (PET) containers, such as frozen food trays, retail packaging and other rigid items bearing the number "1" in the triangular recycling symbol and/or the letters "PET." Examples include pre-washed salad greens containers. Excludes bottles and jugs and clamshells.
11	#1 PET Clamshells (Commingled Recyclables)	Clear clamshell containers bearing the number "1" in the triangular recycling symbol and/or the letters "PET", such as those used for fruits and berries, deli and salad containers, food take out, baked goods, egg cartons (label okay), herbs container (label okay) and cookie trays (clear plastic tray inside cookie packages).

12	#2 HDPE Containers - Natural (Commingled Recyclables)	Unpigmented high-density polyethylene that may be cloudy white in color, allowing light to pass through it. When marked for identification, it bears the number "2" in the triangular recycling symbol and/or the letters "HDPE." Examples include milk jugs, water jugs and vinegar bottles/jugs. Non-food items include uncolored bottles for windshield fluid, antifreeze, eye drops, rubbing alcohol, and soap. Lids and caps are left attached to containers when feasible.
13	#2 HDPE Containers - Colored (Commingled Recyclables)	Pigmented HDPE that are a solid color, preventing light from passing through it. When marked for identification, it bears the number "2" in the triangular recycling symbol and/or the letters "HDPE." Examples include detergent, fabric softener and bleach bottles; shampoo and other hair-care bottles; empty motor oil, empty antifreeze, and other empty vehicle fluid containers. Lids and caps are left attached to containers when feasible. Includes 5-gallon plastic pails (with or without handles) and lids.
14	#4 LDPE Film (Trash)	Include all grocery, shopping, and merchandise bags, cling film, and wrapping film. Also includes agricultural films used for storage of farm materials, such as feed, and plastic film used as mulch.
15	#5 PP Packaging (Commingled Recyclables)	Polypropylene plastic packaging that bears the number "5" in the triangular recycling symbol and/or the letters "PP". Examples include butter, yogurt and sour cream tubs, and take-out containers.
16	#6 PS Rigid - General Purpose (Trash)	Items made of clear non-expanded polystyrene bearing the number "6" in the triangular recycling symbol and may also bear the letters "PS". Examples may include CD/DVD cases, and disposable clear eating utensils and clear beverage cups.
17	#6 PS Rigid - High Impact (Trash)	Items made of colored non-expanded polystyrene bearing the number "6" in the triangular recycling symbol and/or the letters "PS". Examples include colored disposable eating utensils and beverage cups ("Solo" cups), and disposable beverage lids.
18	#6 PS Expanded Non-Food (Trash)	Includes items made of Expanded PS (EPS) used in packaging, construction, and other applications in which the items are not intended to be in contact with food. Examples includes packaging peanuts, insulation blocks, and molded blocks in packaging.
19	#6 PS Expanded Food (Trash)	Includes items made of Expanded PS (EPS) used in food consumption such as beverage cups, food take-out containers, serving trays, and egg cartons.
20	#7 Compostable Plastics (Compostable Organics)	Includes products consisting only of compostable plastics that meet ASTM D6400 or D6868 standards for compostable plastics.
21	Multi-Layer Flexible Plastic Packaging (Trash)	Flexible containers that are multilayered (PE or multi-resin) means plastic pouches made of thicker, multi-layer flexible material. May have a flat bottom so that package would stand up on its own, but not always. Material is thicker than potato chip bags and frozen vegetable bags. Includes plastic coffee bags; juice pouches; baby food pouches – may have plastic screw top; soup pouches; salad dressing pouches; wine pouches; backpacking meals in pouches; soap refill pouches; laundry detergent pouches; and other similar items.
22	Single Layer Flexible Plastic Packaging (Trash)	Includes all other single layer flexible plastic packaging not already included in the #4 LDPE Film category. Examples: Potato chip bags and similar, candy wrappers, frozen food bags (vegetables, berries); nut/snack bags, shrink plastic wrappers (snack meat and cheese wrappers); small (2 inch) pouches for condiments (ketchup, etc.), yogurt tubes, mailing pouches (colored or white, but not clear), 100% plastic mailing pouches with bubble wrap, woven grain bags, and other similar items.
23	Other Plastics (Trash)	Includes all #3 PVC (Polyvinyl chloride), #4 LPDE Rigid, other #5 PP (Polypropylene) and all #7 non-compostable. Includes items not captured in other categories including other foam and multi-material items. Examples include twine, strapping, toothbrushes, razors, dustpan brushes, mouse pads, and unattached caps. Includes all non-numbered plastic packaging, containers, and product items. Includes plastics that cannot be identified by resin.
24	Garbage Bags (Trash)	Plastic bags used to contain trash.

	ORGANICS	
	FOOD	
25	Uncontained Vegetative Food (Compostable Organics)	Plant based foods that are loose or spilling from an open or partially open container. Includes coffee filters and tea bags, breads, and candies. Foods that consist of a mix of plant and animal derived ingredients are to be included in the Uncontained Non-Vegetative category.
26	Uncontained Non-Vegetative Food (Compostable Organics)	Animal derived foods and oils that are loose or spilling from an open or partially open container. Includes foods that consist of a mix of plant and animal derived ingredients.
27	Unopened Packaged - Metal (Compostable Organics)	Plant and animal derived foods in unopened metal containers such as cans and foil molded containers.
28	Unopened Packaged - Rigid Plastic (Compostable Organics)	Plant and animal derived foods in unopened rigid plastic containers not easily identifiable as compostable plastic.
29	Unopened Packaged - Paperboard (Compostable Organics)	Plant and animal derived foods in unopened paperboard/cardboard boxes including those that contain multiple packaging components inside, such as unopened boxes of cereal, cracker, and frozen meals. Also includes food wrapped in butcher paper.
30	Unopened Packaged - Film Plastic (Compostable Organics)	Plant and animal derived foods wrapped in plastic film not easily identifiable as compostable plastic.
31	Unopened Packaged - Glass (Compostable Organics)	Plant and animal derived foods in unopened glass containers with metal, plastic, or film lids.
32	Unopened Packaged - Beverages (Compostable Organics)	Unopened containers of juice, soda, tea, etc.
33	Opened Packaged - Beverages (Compostable Organics)	Containers with partially consumed beverages. Examples: Plastic bottles half full of soda or water.
34	Other Packaged Food (Compostable Organics)	Plant and animal derived foods in other containers, such as single serving clay containers.
35	Food Processing Wastes (Compostable Organics)	Processing wastes that are left over from processing fruit, vegetables, meat, seafood, or other foods, and that are treated as a waste by a food processing facility. Examples include meat rendering or packing waste, fish processing waste, and fruit or vegetable pulp. Does not include food residuals from restaurants or grocery stores or food purchased as groceries. Does not include food from home gardens, recreational fishing and hunting, or other home food processing.
	VEGETATIVE/WOODY MATERIAL	
36	Yard Waste (Yard Waste)	Includes leaves, grass clippings, brush, tree trunks and stumps, prunings from trees or shrubs, and holiday trees
37	Other Plant Materials (Yard Waste)	Includes sod, any plant materials (fruits and vegetables) from residential trees and edible gardens, and ornamental plants materials that do not contain plastic, metal, polystyrene, or other non-compostable material including but not limited to pumpkins or gourds, hay, or straw bales, discarded or potted flowers, wreaths, and grave blankets.
38	Woody Material > 10" (Yard Waste)	Tree stumps, trunks, roots or shrubs with intact root balls and branches larger than 10 inches in diameter.
39	Agricultural Plant Materials (Yard Waste)	Plant material including but not limited to stems, leaves, vines, or roots that can be identified as coming from an agricultural operation such as plant material from commercial greenhouses.
40	Pallets and Crates (Wood)	Partial or whole pallets, crates, and similar shipping containers made of clean untreated wood. "Clean untreated wood" means wood that has not been treated chemically or with adhesives and coatings including but not limited to paint, glue, or any other visible contaminant. Includes other clean wood that may not be part of a pallet or crate.
	OTHER ORGANICS	
41	Manure - Agricultural (Compostable Organics)	Manure identifiable as originating from livestock farms and equine boarding operations. May be mixed with bedding and feed.
42	Dead Animals (Compostable Organics)	Includes roadkilled animals and deceased pets.
43	Other Organic Material (Trash)	All organic material that doesn't fit into the categories specified above, and items that are primarily organic but include other materials such as plastic or metal. Examples: pet waste, cotton balls, hair, wax, and rubber bands.

	GLASS	
44	Glass Containers (Commingled Recyclables)	Bottles and jars made from clear glass and any other colors. Includes whole containers and fragments of 2'' or greater.
45	Other Glass and Ceramics (Trash)	Includes flat glass products such as mirrors, shelfs, display cabinet panes, automobile windshields, and other flat products. Includes other types of glass products and scrap (broken glass) such as light bulbs, glassware, oven-safe baking dishes ("Pyrex"), crystal, and non-insulation fiberglass. Includes ceramics not composed of true glass and not typically used as building materials such as service ware, crockware and decorative items.
	METALS	
46	Aluminum Beverage Cans (Commingled Recyclables)	Aluminum beverage cans (UBC) and other non- pressurized bi-metal cans made mostly of aluminum.
47	Other Aluminum (Commingled Recyclables)	Includes aluminum foil, aluminum pie plates, roasting/baking pans, storage and serving trays, etc. Includes aluminum pet (cat) food cans lined with plastic. Includes siding, aluminum lawn chairs, and aluminum scraps.
48	Ferrous Food Cans (Commingled Recyclables)	Includes zinc or tin-coated steel food containers, and all other coated cans except coated aluminum cans. Also includes bi-metal beverage cans.
49	Other Ferrous Metal (Commingled Recyclables)	Ferrous and alloyed ferrous metal scrap to which a magnet is attracted (includes household, commercial and industrial materials). Metal clothes hangers, metal paint cans, sheet metal products, pipes, steel drums, stainless steel cookware, flashing, and metal scraps.
50	Other Nonferrous Metal (Commingled Recyclables)	Includes all other non-magnetic metal, such as brass and copper, that are not recognized as aluminum.
51	Mixed Metal / Material (Trash)	Items made of a mixture of ferrous and non-ferrous or a mixture of metal and non-metallic materials (if these are primarily metal). Examples include lawnmowers, motors, and insulated wire.
52	Aerosol Containers Non- Hazardous (Commingled Recyclables)	Empty, mixed material/metal aerosol cans that contained personal deodorants, home fragrance, cooking oils, home cleaning products and similar content. Includes compressed air containers.
53	Aerosol Containers Hazardous (Commingled Recyclables)	Empty, mixed material/metal aerosol cans that contained lubricant oils, solvents, paints, and other materials that could explode or burn at the materials recovery facility. Aerosols that still contain product are sorted according to that material—for instance, solvent-based paint.
	ELECTRONICS	
54	TVs and Monitors - CRT (Electronics)	Television sets and computer monitors containing a cathode ray tube (CRT). Includes DLP (Digital Light Processing) TVs.
55	TVs and Monitors - LCD/LED/Plasma (Electronics)	Television sets and computer monitors with LCD, LED, or plasma screens.
56	Data Bearing Electronics (Electronics)	Consists of equipment containing a data storage hard drive or flash drive that requires special handling and destruction for the purpose of protecting sensitive information stored in the equipment. Includes computer towers, servers, laptops, tablets, e-readers (Kindle), data storage drives, cell phones, gaming consoles (PlayStation, X-Box, Nintendo), portable gaming devices, Fire Sticks, Chrome Stick and AppleTV devices, USB jump drives, SD cards, internet routers, WiFi network systems, commercial rack mount networking products, and anything with a hard drive or flash drive that stores sensitive data.
57	Electronic Equipment Cables and Wires (Electronics)	All cable and wiring not permanently attached to a device. Examples: phone charging cables, AV, HDMI and USP cables, etc. Includes AC Adapters/Chargers or AC/DC adapters used as external power supply for small or portable battery- powered devices and for charging/recharging batteries. Includes USB wall chargers, power bricks, wall warts and other power adapters.
58	Ink cartridges (Electronics)	Includes all brands of ink cartridges used with inkjet printers. Includes all brands of toner cartridges used with laser printers.
59	Mixed Media Electronics	Includes disk media (CDs, DVDs, Blu-ray, LaserDisc, 3.5" and 5.25" floppy disks, Zip and Jaz disks); tapes (VHS-all types, audio cassette tapes, 8mm, mini DV and similar), and other similar media.

60	General Electronics (Electronics)	Includes office equipment such computer printers, scanners, copier, and fax machines including multifunction combinations, standalone (floor) printers, copiers, fax machines including multifunction combinations, desk telephones and telephone boards, and other similar devices. Includes audiovisual equipment such as DVRs, VCRs, DVD players, stereo equipment, receivers, radios, tape players, CD players, turntables, boomboxes, karaoke machines, speakers (standalone speakers, desktop computer speakers, soundbars, Bluetooth speakers, headphones, earbuds), game controllers, and other similar devices. Includes small electric appliances such as toasters, mixers, microwave ovens, power tools, curling irons, glucose meters, blood pressure monitors, fans, video cameras, film cameras, digital cameras, doorbell cameras, security cameras, keyboards, mice, and anything else that runs with a plug or battery.
61	Vaping Devices (Electronics)	Battery-operated devices that people use to inhale an aerosol, which typically contains nicotine (though not always), flavorings, and other chemicals; includes tanks & mods and e-cigarettes (rechargeable and disposable)
	CONSUMER PRODUCTS	
62	Textiles-Organic (Textiles)	Includes cloth, clothing, and rope made of 100 percent cotton, leather, wool, or other naturally occurring fibers and composites of several different naturally occurring fibers (such as a wool jacket with a cotton liner). Organic textiles with buttons and zippers can be included in this category.
63	Textiles-Synthetic, Mixed or Unknown (Textiles)	Includes cloth, clothing, and rope made of synthetic fibers, unknown fibers, or made from a mixture of synthetic and natural materials. This includes dryer sheets and cleaning wipes.
64	Shoes, Purses, and Belts (Textiles)	All shoes and boots, purses, and belts whether made of leather, rubber, other materials, or a combination thereof.
65	Furniture & Mattresses (Bulky Materials & C&D Debris)	Mixed-material furniture such as upholstered chairs or a metal desk with a wood writing surface. Does not include furniture that can be categorized as #4 LPDE Rigid or #5 PP Other. Includes mattresses of all sizes and types of materials and box springs. Includes innerspring, foam, and other types of mattresses.
66	Large Appliances (Electronics)	Large household appliances or parts thereof. Examples include washing machines, clothes dryers, dishwashers, refrigerators, dehumidifiers, air conditioners, etc. Special note should be taken if any of these are found still containing refrigerant.
67	Rubber Products (Trash)	Rubber products and scrap materials such as bathmats, inner tubes, rubber hoses, and foam rubber pieces, not including mattresses. Includes tires from bicycles, lawnmowers, trailers, etc. Does not include scrap tires from automobiles, trucks, tractors, motorcycles.
	RESIDUALS	
68	Sludges and Other Special Industrial Wastes (Trash)	Sludges and other wastes from industrial sources that cannot easily be fit into any of the above materials. Includes paper processing sludges. Can include liquids and semi-solids but only if these materials are treated as a solid waste.
69	Fines/Dirt (Trash)	Consists of material passing through a 2-inch screen which is not otherwise categorized. Also includes materials too small to feasibly characterize. Proportions of material types will be visually characterized for this category
70	Mixed Residue (Trash)	Any other type of waste material not included in any of the previous categories.
	CONSTRUCTION & DEMOLITION DEBRIS	
71	Treated Wood Lumber and Products (Wood)	Treated lumber and wood products, including all engineered wood such as plywood, flooring, and particle board. Includes cabinets, shelving and doors made entirely with wood, and weathered railroad ties and utility poles.
72	Untreated Wood Lumber and Products (Wood)	Unpainted construction cut-offs or demolition scrap dimensional lumber and sheet goods such as plywood, particle board, wafer board, oriented strand board and other residual materials used for sheathing and related construction uses that has not been treated chemically or with
73	Painted/Stained Wood (Wood)	Wood that has had an external coating applied, such as paint or varnish in more than small amounts. Examples: painted siding, baseboards and moldings, cabinets, varnished handrails, finished wood doors.
74	Plastic Lumber (Bulky Materials & C&D Debris)	Dimensional or sheet lumber made from wood and plastic/resin composites, including but not limited to decking, pallets, and furniture.
75	Insulation (Bulky Materials & C&D Debris)	Include all pad, roll, or blown-in types of insulation.
76	Gypsum Drywall - Demolition (Bulky Materials & C&D Debris)	Used gypsum drywall typically covered with paint, wallpaper, or other finish coating.

77	Gypsum Drywall - Clean Scraps (Bulky Materials & C&D Debris)	Unpainted/uncovered gypsum drywall construction cutoffs and scrap.
78	Concrete and Bricks (Bulky Materials & C&D Debris)	Hard material made from sand, aggregate, gravel, cement mix, and water. Includes unmixed cement concrete blocks, concrete pieces with a steel internal structure, and similar wastes. Includes clay bricks of various types and sizes.
79	Ceramics/Porcelain (Bulky Materials & C&D Debris)	Finished ceramic and porcelain plumbing fixtures such as toilets, sinks and tubs. Includes floor and wall tiles.
80	Wall-to-wall Carpet (Bulky Materials & C&D Debris)	Flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material firmly attached to the floor. Does not include area rugs or doormats.
81	Carpet Padding (Bulky Materials & C&D Debris)	Foam material used under carpet to provide insulation and cushioning.
82	Asphalt Roofing (Bulky Materials & C&D Debris)	Asphalt shingles and tarpaper; asphalt from built-up roofing and tarpaper from built-up roofing.
83	Plastic Flooring (Bulky Materials & C&D Debris)	Includes plastic tile, vinyl flooring, and linoleum.
84	C&DD PVC (Bulky Materials & C&D Debris)	Building materials made of polyvinyl chloride such as pipes, fencing, decking, and paneling.
85	C&DD Glass (Bulky Materials & C&D Debris)	Includes patio doors, shower doors, windows and glass blocks
86	C&DD Metal (Bulky Materials & C&D Debris)	Includes metal doors, shelving, and siding, except aluminum siding which is included in the "Other Aluminum" category.
87	Other C&DD (Bulky Materials & C&D Debris)	Any other material used in construction or resulting from demolition. Examples: nails, adhesives, plastic/acrylic tubs and shower units, non-asbestos-containing composite ceiling tiles, electrical wiring, and plaster.
	HAZARDOUS WASTES (All classified as HHW)	
88	Paint	Containers with liquid content. Includes paints and primers (water, oil, alkyd and enamel-based), stains, sealers, and clear coatings (e.g. urethane, shellac and varnish), multipurpose products (primer/rust inhibitor combinations), tubes of pigment and fine art paints. This category does not include dried paint, empty paint cans, or empty aerosol containers.
89	Fluorescent Lighting	Includes fluorescent light tubes and compact fluorescent light bulbs. Does not include lighting fixtures.
90	Lithium-Ion Batteries	Lithium-ion batteries of various sizes, forms and types as commonly used in small appliances and portable electronic equipment. Includes single use and rechargeable batteries. Only loose batteries in the waste samples are counted in this category.
91	Other Batteries	Any type of battery other than Lithium-ion batteries. Only loose batteries in the waste samples are counted in this category. May include unlabeled Lithium-ion batteries.
92	Other Household Hazardous Waste	Containers full or partially full. Includes cleaners, motor oil, used oil filters, antifreeze, and other automotive fluids, chlorinated and flammable solvents, paint strippers, solvents contaminated with other products, acids, bases, pesticides, and fertilizers. Also includes mercury containing devices such as thermostats and thermometers (even if containment is broken and mercury is no longer present), and smoke detectors.