Pinellas County
Solid Waste

FINAL REPORT

Pinellas County
2020 Municipal Recyclables Composition Study

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PREPARED FOR

Pinellas County
Department of Solid Waste
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Section 1
Introduction

1.1 Study Objectives

As a task assignment for their 2018 Contract for Solid Waste Consulting Services, Pinellas County (County) requested Kessler Consulting, Inc. (KCI) to conduct a recyclables composition study (RCS) to quantify the composition of the single stream recyclables collected from the municipalities within the County, including calculating the overall contamination rate. The study was conducted under the direction of the County's Solid Waste Technical Management Committee (TMC) with guidance from the County's Department of Solid Waste as the first step of a feasibility study for a publicly owned materials recovery facility (MRF) in the County. In addition, these results will allow an average market value (AMV) to be calculated on the Countywide municipal recyclables composition indicating the value of the recycling stream. The RCS will also provide useful information to the municipalities on the types and percentages of acceptable and unacceptable material in their recyclables streams.

1.2 Background

The County has a population of approximately 980,000 and is the sixth most populous county in Florida. The County contains 24 individual municipalities. About 27 percent of residents live within the City of St. Petersburg, 12 percent live within the City of Clearwater, 9 percent live within the City of Largo, 24 percent live within the other 21 municipalities, and the remaining 28 percent live in the unincorporated areas of the County. [1]

Located on Florida's Gulf Coast in the Tampa Bay region, the County has a land area of 274 square miles. The County has the densest population of any county in Florida, with an average density of 3,570 persons per square mile, which is over twice the density of the second densest county in Florida and nine times as high as the average density of Florida counties. The County primarily has urban and suburban development. It also includes numerous beach communities along the Gulf. Because of this, the County has a high seasonal and tourist population.

Collection of solid waste and recyclables for incorporated areas is managed by the individual municipalities. Some municipalities provide collection themselves, while others contract with a franchise hauler to provide collection. Some municipalities also collect recyclables at drop-off collection centers and/or from commercial and multi-family properties. The municipalities or their haulers deliver recyclables to private MRFs or transfer stations in the region. Table 1-1 lists the municipalities in the County, their recycling collection provider, and their recyclables processor. Recyclables are collected as single stream recyclables, except in Gulfport, where it is collected dual stream. In the unincorporated areas, recyclables collection is open market with residents contracting with private haulers directly. However, the County does contract with Waste Management to collect single stream recyclables at collection centers and from beach and park locations and a vendor in a small area of Lealman.

[1] Florida Bureau of Economic and Business Research, University of Florida.

Table 1-1: Municipal Recycling Collection Providers

Municipality	Hauler	Recycler
Belleair	Clearwater	Waste Management
Belleair Beach	Waste Management	Waste Management
Belleair Bluffs	Waste Management	Waste Management
Belleair Shore	Waste Connections	Waste Connections
Clearwater	Self	Waste Management
Dunedin	Waste Pro	Waste Pro
Gulfport	Self	Recycling Services of FL
Indian Rocks Beach	Waste Connections	Waste Connections
Indian Shores	Waste Connections	Waste Connections
Kenneth City	Waste Connections	Waste Connections
Largo	Self	Waste Connections
Madeira Beach	Waste Connections	Waste Connections
N Redington Beach	Waste Pro	Waste Pro
Oldsmar	Republic Services	Republic Services
Pinellas Park	Waste Management	Waste Management
Redington Beach	Waste Connections	Waste Connections
Redington Shores	Waste Connections	Waste Connections
Safety Harbor	Self	Waste Management
Seminole	Waste Management	Waste Management
South Pasadena	Waste Connections	Waste Connections
St. Pete Beach	Waste Connections	Waste Connections
St. Petersburg	Self	Waste Connections
Tarpon Springs	Waste Management	Waste Management
Treasure Island	Republic Services, Connex*	Republic Services

*Treasure Island contracts with Republic for single family residential recycling and with Connex for multi-family residential recycling

1.3 Acknowledgements

KCI would like to acknowledge and thank all County staff members and contractors who assisted with the planning and logistics of this RCS. KCI would also like to thank the municipalities and their franchise haulers for their cooperation in coordinating the delivery of recyclables during the study. The cooperation and positive attitudes of all team members were essential to the success of the RCS.

Section 2
Methodology

2.1 Dates, Location, Equipment, and Labor

The RCS was conducted Monday through Friday for three consecutive weeks from October 12-30, 2020. All sampling and sorting occurred at the Hand Unload area of the County's Solid Waste Facility located at 3095 114th Avenue N., St. Petersburg, FL 33716. The Municipal RCS was conducted concurrently with an RCS conducted on the County's recyclables from their collection centers and beach and park recycling program. The methodology, results, and findings of the County RCS are discussed in a separate report.

KCI provided all sorting equipment; safety gear; a primary and backup scale calibrated to 0.02 pounds; and two experienced staff persons to oversee all sampling, sorting, weighing, and data recording. The County provided a loader and operator to mix loads and pull samples and provided roll-off containers to remove materials upon completion of sorting activities. KCI provided the sorting labor through a local temporary labor company.

KCI prepared and County staff reviewed and approved a site safety plan that was followed throughout the sorting event. KCI worked closely with County staff to coordinate and set up a sort location that would ensure worker safety. Each morning of the event, sorters were given thorough safety instructions by one of KCI's Supervisors to ensure worker safety and proper sorting. No injuries occurred during the sorting event.

2.2 Material Categories

Recyclables were sorted into the 36 material categories defined in Appendix A. KCI worked with County staff to develop and define these material categories and ensure they met the objectives of the RCS.

2.3 Sampling and Sorting Procedures

During the fifteen-day sorting event, representative samples were pulled from 132 loads of municipal recyclables. The baseline number of samples from each municipality was determined based on the total tonnage of single stream recyclables (dual stream for Gulfport) reported by each municipality in Fiscal Year 2019 (FY19). The sampling of individual loads from each municipality was distributed over the three weeks based on the daily collection schedules and recyclables tonnages by day and generator sector. KCI then worked with municipal staff and franchise haulers to coordinate for the delivery of the selected route's loads to the study site at the Hand Unload area. KCI prepared placards that were distributed to the haulers, who then distributed them to their drivers for each selected route and directed them to tip at the study site. Table 2-1 shows the total tonnage reported in FY19 and the number of samples pulled from each municipality. Table 2-2 details the daily sampling schedule followed during the RCS.

Table 2-1: Sampling Schedule

Municipality	Tonnage	% of total tons	Baseline # of samples	Total # of samples	Notes:
St. Petersburg	13,036	31%	29	29	
Clearwater	8,261	20%	19	35*	Includes 4 commercial, 4 multi-family, and 1 drop-off samples
Largo	6,069	15%	14	24*	Includes 6 commercial, and 2 drop-off samples
Dunedin	3,420	8%	8	8	Includes 1 drop-off sample
Safety Harbor	1,776	4%	4	6*	Includes 1 commercial sample
Pinellas Park	1,520	4%	3	3	
Tarpon Springs	1,312	3%	3	3	
Oldsmar	865	2%	2	2	
St. Pete Beach	775	2%	2	2	
Treasure Island	723	2%	2	2	Includes 1 multi-family sample
Indian Rocks Beach	663	2%	1	1	
Seminole	549	1%	1	1	
Gulfport	449	1%	1	1	
Madeira Beach	445	1%	1	1	
Belleair	425	1%	1	6*	
Indian Shores	250	1%	1	1	
South Pasadena	196	0%	1	6*	
Belleair Beach	189	0%	1	**	
N Redington Beach	141	0%	1	**	
Kenneth City	118	0%	1	**	
Redington Shores	111	0%	1	**	
Redington Beach	91	0%	1	**	
Belleair Bluffs	40	0%	1	1	
Belleair Shore	9	0%	1	**	
Total	**41,434**	**100%**	**100**	**132**	

Notes: The baseline number of samples was calculated by allocating 100 samples among all municipalities based on the relative tonnage of single stream recyclables and with a minimum of 1 sample for all municipalities.
All samples are single family residential unless noted.
*These municipalities opted to have additional samples for greater reliability of their composition data.
**These municipalities did not participate in the RCS.

Table 2-2: Daily Sampling Schedule

Municipality	Mon 10/12	Tue 10/13	Wed 10/14	Thu 10/15	Fri 10/16	Mon 10/19	Tue 10/20	Wed 10/21	Thu 10/22	Fri 10/23	Mon 10/26	Tue 10/27	Wed 10/28	Thu 10/29	Fri 10/30	Total
St. Petersburg	3	3		4	4	4	3		4	4						**29**
Clearwater	6	4	1	3	4	5	4	1	3	4						**35**
Largo	3	4		4	4	3	1		1	2		1			1	**24**
Dunedin	1					1	3		1	2						**8**
Safety Harbor						1			2	3						**6**
Pinellas Park			1					1					1			**3**
Tarpon Springs				1					1					1		**3**
Oldsmar				1	1											**2**
St. Pete Beach			1					1								**2**
Treasure Island											1			1		**2**
Indian Rocks Beach								1								**1**
Seminole								1								**1**
Gulfport											1					**1**
Madeira Beach			1													**1**
Belleair				2					2					2		**6**
Indian Shores			1													**1**
South Pasadena			2					2					2			**6**
Belleair Bluffs			1													**1**
Total	**13**	**11**	**8**	**15**	**13**	**14**	**11**	**7**	**14**	**15**	**2**	**1**	**3**	**5**	**1**	**132**

Each vehicle's driver was directed to tip their load at the designated area of the sort site. To obtain a representative sample of the load, a loader mixed the load several times to disrupt any settling and stratification that occurred during collection and transport and ensure a thorough distribution of materials throughout the load, including any heavy materials at the bottom of the load. A representative sample of at least 150 pounds was pulled from a random portion of the mixed pile. The sample was then placed on a tarp, labeled, and stored until sorted.

Individual samples were transferred to KCI's custom sorting table, which included a ½-inch screen to sieve grit. The entire sample was hand-sorted off the ½-inch screen into the previously defined material categories. Any material that passed through the ½-inch screen was swept into the grit category. After the entire sample was sorted, KCI staff weighed and recorded the net weights of each material category using a tablet-based data log. This process was repeated for all 132 samples.

All bagged recyclables from all samples (municipal and County) were saved after weighing the sorted materials from each sample, aggregated, opened, and sorted at the end of the RCS.

2.4 Analytical Procedures

After fieldwork was completed, KCI calculated the weighted average of each material category to determine composition of recyclables from each municipality as well as the Countywide municipal recyclables composition. The individual municipalities' compositions (Appendix B) were weighted by the total net weight of the load from which each sample was pulled. The Countywide municipal average composition was weighted by the total weight of recyclables from each municipality in FY19 and the total net load weight. Weighting the average ensures that the composition from heavier or lighter loads is accounted for in the average composition, and weighting by the total tonnage from each municipality ensures the composition from each municipality is equitably accounted for in the Countywide average. Data analysis followed industry-accepted standards for statistical sampling, as outlined in the *ASTM Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste (D5231-92; reapproved 2016)*. In addition, a 95 or 90 percent confidence interval was calculated, using a standard statistical t-distribution table, for each material category of the Countywide composition. Per the draft ASTM standard for determining single stream recyclables composition, the threshold for statistically valid results for 95 and 90 percent confidence intervals is 35 and 24 samples, respectively. Therefore:

- For municipalities with 35 or more samples, a 95 percent confidence is calculated.
- For municipalities with 24 or more and fewer than 35 samples, a 90 percent confidence is calculated.
- For municipalities with fewer than 24 samples and 6 or more samples, a 90 percent is calculated for information purposes only, and should not necessarily be considered statistically valid.
- If fewer than 6 than samples were pulled from a municipality a confidence interval was not calculated.

Section 3
Results

3.1 Introduction to Results

The goal of this RCS was to provide the County and TMC with statistically valid Countywide municipal single stream recyclables composition. In addition, the RCS provided the municipalities with informational, at a minimum, or statistically valid, where possible, results for their recyclables. The Countywide municipal results are presented and discussed in this section. The results and composition for individual municipalities are provided in Appendix B.

Unless otherwise stated, all results presented in this section are expressed in percentage by weight. The percentages included in the tables and figures are the weighted average values for each material category. Where possible, the results also provide the 95 or 90 percent confidence intervals for each material category. The confidence interval indicates that with a 95 or 90 percent level of confidence the actual arithmetic mean is within the upper and lower limits shown. (Note: Because this is a statistical analysis, the lower end of the confidence interval may be a negative number.) This interval provides an understanding of how much variation occurred in the quantity of that material category found in the samples sorted. Generally, the more homogeneous the stream and the greater the number of samples sorted, the higher the level of accuracy achieved and the narrower the margin between the upper and lower bounds of the confidence interval. Additionally, a 95 percent confidence interval will inherently have a wider margin than a 90 percent confidence interval on the same data set.

For the purposes of discussion and analysis, materials were grouped by material types and acceptability, which is based on generally accepted materials or categories used for RCSs and do not necessarily reflect the actual current program recyclables of the County or the municipalities.

- Recyclable Paper: Paper materials that could be acceptable in a Countywide recycling program.
  - Newspaper
  - Corrugated Cardboard
  - Mixed Recyclable Paper
  - Magazines & Catalogs
  - Aseptic Containers/Cartons
- Recyclable Containers: Plastic, metal, and glass containers that could be acceptable in a Countywide recycling program.
  - PET Bottles (#1)
  - Natural HDPE Bottles (#2)
  - Colored HDPE Bottles (#2)
  - Non-Bottle PET Containers (#1)
  - Non-Bottle HDPE Containers (#2)
  - PP Containers (#5)
  - Other Plastic Containers (#3,4,6,7)
  - Tin/Steel Cans
  - Aluminum Cans
  - Glass Containers
- Other Recyclables: Non-container materials that could be acceptable in a Countywide recycling program.
  - Bulky Rigid Plastics
  - Ferrous Scrap Metal
  - Aluminum Foil and Trays
  - Non-Ferrous Scrap Metal

- Potential Recyclables: Materials that are or include acceptable recyclable materials but are not acceptable in their current form.
  - Wet Corrugated Cardboard
  - Wet Paper
  - Shredded Paper
  - Film-Wrapped Paper
  - Bagged Recyclables
  - Full Containers
- Contaminants: Materials that should not be accepted in a Countywide recycling pr.
  - Expanded Polystyrene (EPS) Foam
  - Non-Rigid Plastic Film
  - Small Appliances
  - Bagged Waste
  - Yard Waste
  - Tanglers
  - Hazardous/ Special Waste
  - Non-Alkaline Batteries
  - Other Contaminants
  - Grit

3.2 Municipal Recyclables Composition Results

Figure 3-1 depicts the combined weighted average composition of single stream recyclables from all municipalities. Table 3-1 provides the weighted average with a 95 percent confidence interval for each material category measured in the RCS. Results for individual municipalities are included in Appendix B.

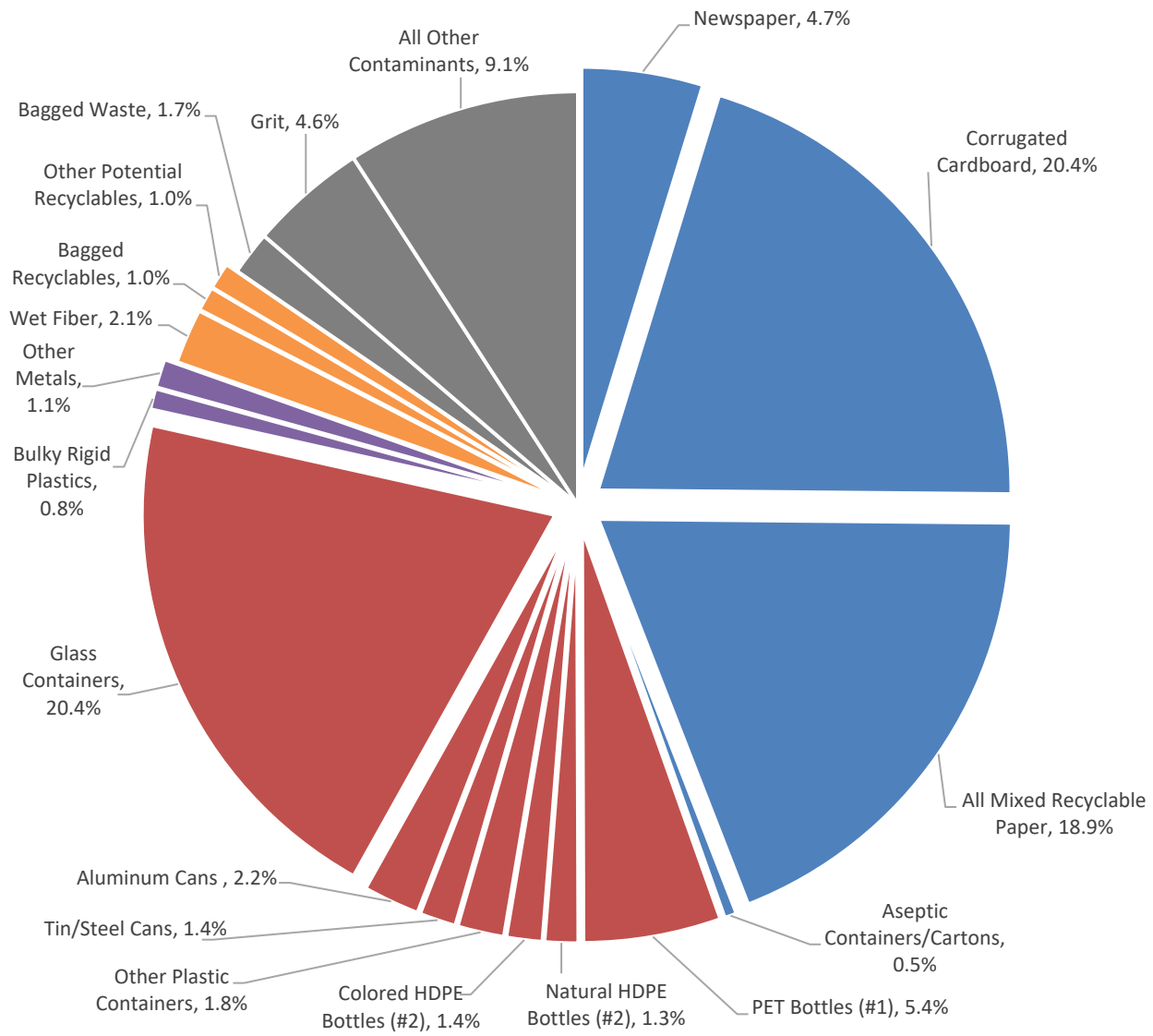
Key findings from the RCS results include:

- Total acceptable material (recyclable paper, recyclable containers, and other recyclables) and total unacceptable material (potential recyclables and contaminants) comprised 80.4 and 19.6 percent of the stream, respectively.
- Approximately 45 percent of the recyclables stream was recyclable paper.
  - The highest individual paper category was corrugated cardboard. (It should be noted that the RCS was conducted during the COVID-19 pandemic, during which time online shopping and the resulting generation of corrugated cardboard in the residential stream was higher than normal).
  - Mixed paper comprised about 15 percent of the recyclables and newspaper comprised about 5 percent.
- Recyclable containers comprised approximately 34 percent of the stream.
  - These were predominantly glass containers (20.4 percent).
  - PET bottles had the second highest percentage of the containers (5.4 percent).
  - Aluminum cans were just over 2 percent of the stream.
  - All other container categories each comprised less than 2 percent of the stream.
- Other recyclables, which includes bulky rigid plastics and non-container metals, comprised about 2 percent of the stream.
- About 4 percent of the stream was potentially recyclable materials.
  - This was approximately half wet fiber. This is generally a result of rainfall. During the RCS, the County experienced minor scattered rain showers. While the samples were protected from the rain. The material may have been exposed to rain during collection, resulting in wet paper and cardboard.

  - About 1 percent of the recyclables was bagged recyclables. A total of 142 bags of recyclables were found in all 132 samples. Approximately half of the samples included at least one bag of recyclables.

- Approximately 15 percent of the recyclables stream was contaminants.
  - Almost half of the total contaminants were in the other contaminants category. These included smaller, more commonly found items like low-grade paper (paper towels, cups, napkins, etc.), non-recyclable rigid plastics (utensils, straws, lids, small toys, hangers, etc.), and food waste, as well as heavier, more infrequent items such as textiles, construction and demolition debris, or large household items.
  - Nearly 5 percent of the stream was grit (i.e., material that passed through a ½-inch screen). Grit was primarily composed on small pieces of broken glass, but also included sand, soil, cat litter, small yard waste, and other small pieces of material.
  - Bagged waste comprised 1.6 percent of the recyclables.
  - All other categories of contaminants each comprised less than 1 percent of the stream.
  - A total of 69 tanglers were found in all 132 samples. Approximately a third of the samples included at least one tangler. Tanglers found in the RCS included wires, cables, hoses, wire hangers, plastic and metal straps, and Christmas lights.

Figure 3-1: Composition of Municipal Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table 3-1: Composition of Municipal Single Stream Recyclables (% by Weight)

Material Category	Weighted Average	95% Confidence Interval	
		Lower Bounds	Upper Bounds
Newspaper	**4.7%**	4.0%	5.4%
Corrugated Cardboard	**20.4%**	18.7%	22.1%
Magazines and Catalogs	**3.8%**	3.4%	4.3%
Mixed Recyclable Paper	**15.1%**	14.2%	16.1%
Aseptic Containers/Cartons	**0.5%**	0.4%	0.5%
Recyclable Paper	**44.6%**	**42.5%**	**46.6%**
PET Bottles (#1)	**5.4%**	5.0%	5.7%
Natural HDPE Bottles (#2)	**1.3%**	1.2%	1.5%
Colored HDPE Bottles (#2)	**1.4%**	1.3%	1.5%
Non-Bottle PET Containers (#1)	**0.8%**	0.7%	0.9%
Non-Bottle HDPE Containers (#2)	**0.2%**	0.1%	0.2%
PP Containers (#5)	**0.7%**	0.6%	0.7%
Other Plastic Containers (#3,4,6,7)	**0.2%**	0.1%	0.2%
Tin/Steel Cans	**1.4%**	1.3%	1.5%
Aluminum Cans	**2.2%**	2.1%	2.4%
Glass Containers	**20.4%**	18.5%	22.2%
Recyclable Containers	**33.9%**	**32.1%**	**35.7%**
Bulky Rigid Plastics	**0.8%**	0.6%	1.1%
Ferrous Scrap Metal	**0.9%**	0.7%	1.2%
Aluminum Foil and Trays	**0.1%**	0.1%	0.2%
Non-Ferrous Scrap Metal	**0.1%**	0.0%	0.1%
Other Recyclables	**1.9%**	**1.6%**	**2.3%**
Wet Corrugated Cardboard	**0.6%**	0.4%	0.9%
Wet Paper	**1.5%**	1.2%	1.8%
Shredded Paper	**0.1%**	0.0%	0.2%
Film-Wrapped Paper	**0.5%**	0.4%	0.6%
Bagged Recyclables	**1.0%**	0.7%	1.3%
Full Containers	**0.4%**	0.3%	0.5%
Potential Recyclables	**4.1%**	**3.6%**	**4.7%**
EPS Foam	**0.2%**	0.1%	0.2%
Non-Rigid Plastic Film	**0.9%**	0.8%	0.9%
Bagged Waste	**1.7%**	1.0%	2.4%
Tanglers	**0.2%**	0.1%	0.3%
Small Appliances	**0.4%**	0.1%	0.6%
Hazardous/Special Waste	**0.1%**	0.0%	0.1%
Non-Alkaline Batteries	**0.1%**	0.0%	0.2%
Yard Waste	**0.3%**	-0.2%	0.8%
Other Contaminants	**7.1%**	6.3%	7.9%
Grit	**4.6%**	4.0%	5.2%
Contaminants	**15.4%**	**14.0%**	**16.9%**
Total Acceptable Material	**80.4%**		
Total Unacceptable Material	**19.6%**		
Total	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

3.3 Bagged Recyclables Composition Results

KCI compiled all bagged recyclables collected from all samples throughout the study (this included bagged recyclables from the County RCS, which is discussed in a separate report). After all samples were sorted, these bags were opened, and the contents sorted using the same methodology as the other samples. Table 3-2 provides the composition of the bagged recyclables, as well as the Countywide municipal composition with the individual categories of materials in the bags added to their respective categories.

- Bagged recyclables were predominantly recyclable containers (53.9 percent), especially glass containers, PET bottles, and aluminum cans. These were higher than the average composition of unbagged recyclables.
- Mixed recyclable paper comprised about 20 percent of the bagged recyclables, a higher percentage than unbagged recyclables, but had much a lower percentage of corrugated cardboard.
- Bagged recyclables also had a slightly higher percentage of contaminants than the rest of the unbagged recyclables, a significant amount of which was film from the bags themselves.
- Because bagged recyclables were only 1 percent of the overall stream, applying their contents to the Countywide composition does not have a significant impact, other than a slight reduction in the contaminants percentage. However, this does provide useful information for targeted education and outreach efforts to reduce bagged recyclables.

Table 3-2: Composition of Bagged Recyclables and Countywide Composition with Bag Contents (% by Weight)

Material Category	Bagged Recyclables	Countywide Composition with Bag Contents
Newspaper	3.7%	4.8%
Corrugated Cardboard	2.6%	20.4%
Magazines and Catalogs	0.8%	3.8%
Mixed Recyclable Paper	19.7%	15.3%
Aseptic Containers/Cartons	1.0%	0.5%
Recyclable Paper	**27.7%**	**44.8%**
PET Bottles (#1)	11.9%	5.5%
Natural HDPE Bottles (#2)	1.4%	1.3%
Colored HDPE Bottles (#2)	2.9%	1.4%
Non-Bottle PET Containers (#1)	2.0%	0.8%
Non-Bottle HDPE Containers (#2)	0.5%	0.2%
PP Containers (#5)	1.4%	0.7%
Other Plastic Containers (#3,4,6,7)	0.4%	0.2%
Tin/Steel Cans	1.9%	1.4%
Aluminum Cans	9.1%	2.3%
Glass Containers	22.6%	20.6%
Recyclable Containers	**53.9%**	**34.4%**
Bulky Rigid Plastics	0.0%	0.8%
Ferrous Scrap Metals	0.6%	0.9%
Aluminum Foil and Trays	0.1%	0.1%
Non-Ferrous Scrap Metal	0.0%	0.1%
Other Recyclables	**0.6%**	**1.9%**
Wet Corrugated Cardboard	0.0%	0.6%
Wet Paper	0.3%	1.5%
Shredded Paper	0.0%	0.1%
Film-Wrapped Paper	0.3%	0.5%
Bagged Recyclables	n/a	n/a
Full Containers	0.9%	0.4%
Potential Recyclables	**1.5%**	**3.2%**
EPS Foam	0.2%	0.2%
Non-Rigid Plastic Film	6.4%	0.9%
Bagged Waste	n/a	1.7%
Tanglers	0.0%	0.2%
Small Appliances	0.0%	0.4%
Hazardous/Special Waste	0.0%	0.1%
Non-Alkaline Batteries	0.0%	0.1%
Yard Waste	0.0%	0.3%
Other Contaminants	8.6%	7.1%
Grit	1.1%	4.6%
Contaminants	**16.2%**	**15.6%**
Total Acceptable Material	**82.3%**	**81.2%**
Total Unacceptable Material	**17.7%**	**18.8%**
Total	**100.0%**	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Section 4
Findings

This RCS provides the County with a current estimate of the composition of single stream recyclables collected from municipalities in the County. This information is an essential step in the upcoming feasibility study that the County will be conducting to evaluate the development of a County-owned MRF. Additionally, in the immediate future, these results can also assist the larger municipalities in their current processing agreements, as well provide insight into identifying and addressing contaminants in its recyclables.

The Countywide municipal single stream recycling stream was just over 80 percent acceptable material. Corrugated cardboard, mixed recyclable paper, and glass containers had the highest percentages. In fact, these three materials comprised more than half of the recyclables stream.

Overall, unacceptable material (potential recyclables + contaminants) was nearly 20 percent of the Countywide municipal recyclables stream.

- Materials in the other contaminants category were the largest source of unacceptable material, this comprised many different types of contaminants, including large items such as textiles, household items, construction and demolition debris, as well as smaller, more commonly found contaminants like food waste and non-recyclable paper and plastic. Some of these items could be considered "wishcycling" or the hope that by placing an item in a recycling bin, it will be recycled. An example found in the RCS was a large bag of clothing, presumably placed in the bin to be recycled or recovered.
- Grit, the second highest percentage of unacceptable material, was largely a result of glass broken into small pieces during collection. One possible cause of this could be over compaction during collection. Working with haulers to prevent over compaction of loads could reduce this.
- Wet fiber contributed to approximately 2 percent of the stream. While wet fiber is not a contaminant, exactly, it would not be recoverable during processing and would be considered contaminants. Wet fiber is generally a result of rainfall during collection. This could be reduced by educating residents to fully close the lids to their recycling carts or working with haulers to close the collection hopper during rain.
- Bagged waste was another significant unacceptable material, at 1.7 percent. These were bags of predominantly non-recyclables that were placed by residents in the incorrect cart. They were not what would be considered bagged recyclables.
- Bagged recyclables comprised approximately 1 percent of the stream, and while adding this material into the overall composition would not change the composition significantly, this 1 percent represents significant tonnage Countywide that would be discarded if the bags are not opened at the processing facility. Ideally, bagged recyclables should be eliminated at the source. In addition, the MRF could include equipment to open these bags, in order to capture the recyclable material within them.
- Figure 4-1 shows examples of contaminants found during the RCS.

Figure 4-1: Photos of Contaminants found in the RCS

Small Contaminants (Non-Recyclable Plastic and Paper, Textiles)

Vacuum Hoses

Plastic Hangers

Various Large Contaminants, Tanglers, and Ferrous Scrap Metal

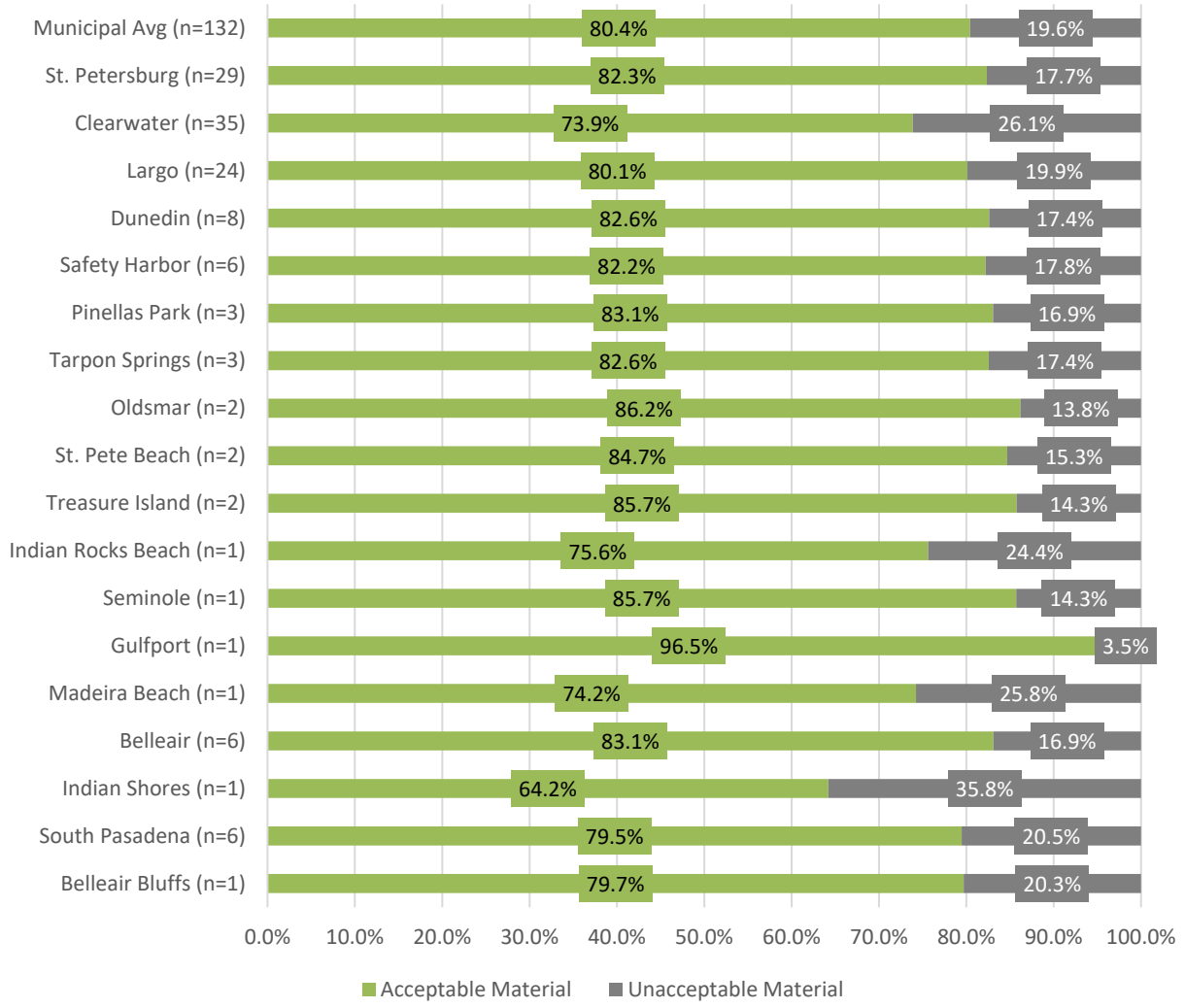
Chainsaw and Christmas Lights

Yard Waste

4.1 Comparison of Municipalities

Figure 4-2 compares the average percentage of total acceptable and unacceptable material between each of the municipalities. The results of the individual municipalities are presented and discussed in more detail in Appendix B. The RCS found some variation between the municipalities, but nearly all municipalities' recyclables were 75-86 percent acceptable material. Gulfport, which is a dual stream program, had much higher percent of acceptable material, while the sample for Indian Shores had an unusually high amount of yard waste. It is important to note that caution should be taken in comparing the municipalities with few samples, as the sample pulled could randomly include outlier material, for example the yard waste in the Indian Shores sample. Of municipalities from which six or more samples were pulled, Belleair had the highest percent of acceptable material, while Clearwater had the lower percent of acceptable material.

Figure 4-2: Comparison of Acceptable and Unacceptable Material Between Municipalities



n is the number of samples pulled and sorted for each municipality.

4.2 Average Market Value

One potential purpose of conducting an RCS is to calculate the AMV of the recycling stream using industry commodity indices. This is sometimes used in processing agreements as a revenue sharing tool between a privately owned/operated MRF and a jurisdiction. For the purposes of this RCS, the AMV gives the County an estimate of the value of its municipally generated recyclables, which is useful in the upcoming feasibility study. Table 4-1 shows two different AMVs, the first is a high value AMV, which has the following conditions:

- Newspaper, magazines, and catalogs are combined for the Sorted Residential Paper and News (SRPN) commodity.[2]
- PP (#5) plastic containers are a separate commodity.
- Bulky rigid plastics and scrap metal are sorted and recovered, a proxy value of 50 percent of the steel can index price is used for scrap metal.
- The composition of the contents of bagged recyclables are allocated to the respective individual categories, assuming these bags would be opened at the MRF.

The second is a low value AMV, which has the following conditions:

- Only newspaper is included in SRPN, magazines and catalogs are included in the mixed paper commodity.
- PP (#5) plastic containers are included in the plastics #3-7 commodity.
- Bulky rigid plastics and scrap metal are not recovered and included in contamination.
- Bagged recyclables are not opened and are included in contamination.

In all cases, the index price listed is the average first published price of January 2021 for the Southeast region as listed on recyclingmarkets.net, an industry accepted commodity pricing index.

KCI appreciates the opportunity to once again work with the County in their ongoing efforts to increase waste diversion and recycling.

[2] Magazines and catalogs have traditionally been sorted into the mixed recyclable paper commodity stream during processing; however, the relatively new sorted residential paper and news (SRPN) paper commodity includes these materials, along with newspaper and is currently a higher value recyclable commodity.

Table 4-1: Average Market Value of Countywide Municipal Recyclables

				High Value		Low Value	
Material	**Index Description**	**Index Value (Jan 2021)**	**Market Value ($/ton)**	**Material %**	**AMV ($/ton)**	**Material %**	**AMV ($/ton)**
Newspaper[1]	PS 56 Sorted Residential Papers (SRPN) ($/ton)	$52.5/ton	$52.50	8.6%	$4.52	4.7%	$2.47
Corrugated Containers	PS 11 Corrugated Containers ($/ton)	$82.5/ton	$82.50	20.4%	$16.83	20.4%	$16.83
Mixed Paper	PS 54 Mixed Paper (MP) ($/ton)	$32.5/ton	$32.50	15.3%	$4.97	18.9%	$6.14
Aseptic Packaging	PS 52 Aseptic Cartons ($/ton)	$0/ton	$0.00	0.5%	$0.00	0.5%	$0.00
PET	SMP Plastics PET (Baled, ¢/lb., picked up)	8.38 ¢/lb.	$167.60	5.5%	$9.22	5.4%	$9.05
Natural HDPE	SMP Plastics Natural HDPE (Baled, ¢/lb., picked up)	70.5 ¢/lb.	$1,410.00	1.3%	$18.33	1.3%	$18.33
Colored HDPE	SMP Plastics Colored HDPE (Baled, ¢/lb., picked up)	20.5 ¢/lb.	$410.00	1.4%	$5.74	1.4%	$5.74
PP[2]	SMP Plastics PP Post Consumer (Baled, ¢/lb., picked up)	14.5 ¢/lb.	$290.00	0.7%	$2.03	-	-
Plastics #3-7	SMP Plastics Commingled (#3-7) (Baled, ¢/lb., picked up)	-1.5 ¢/lb.	-$30.00	1.2%	-$0.36	1.8%	-$0.54
Mixed Rigid Plastics[3]	Mixed Bulky Rigid (Baled, ¢/lb, picked up)	2 ¢/lb.	$40.00	0.8%	$0.32	-	-
Aluminum Cans	SMP Metals Aluminum Cans (Sorted, Baled, ¢/lb., picked up)	52.5 ¢/lb.	$1,050.00	2.3%	$24.15	2.2%	$23.10
Steel Cans	SMP Metals Steel Cans (Sorted, Baled, $/Gross ton, picked up)	$35/ton	$35.00	1.4%	$0.49	1.4%	$0.49
Scrap Metal[3]	50% of Steel Cans (Sorted, Baled, $/ton, picked up)	$17.5/ton	$17.50	1.1%	$0.19	-	-
Glass (3 Mix) (Mixed Cullet)	SMP Glass 3 Mix ($/ton del. as recyclable or disposable)	-$35/ton	-$35.00	20.6%	-$7.21	20.4%	-$7.14
Contamination[4]	N/A	N/A	$0.00	18.8%	$0.00	21.5%	$0.00
				Total	**$79.22**		**$74.47**

The index prices are the first published average prices in January for the Southeast region from recyclingmarkets.net.

[1] In the high value AMV, magazines and catalogs are included with newspaper in the SRPN commodity. In the low value AMV, they are included in mixed paper.

[2] PP (#5) containers are included in the #3-7 Plastics commodity in the low value AMV.

[3] Bulky rigid plastics and scrap metals are included in contamination in the low value AMV.

[4] The high value AMV assumed bagged recyclables are opened and sorted. The low value AMV assumes they are placed in contamination. Also includes other potential recyclables.

Appendix A:
Pinellas County
Municipal Recyclables Composition Study
Material Categories Descriptions

#	Material Categories	Description of Categories
1	**Newspaper**	Newspaper (loose or tied) including other paper normally distributed inside newspaper such as ads, flyers, etc. and other items made from newsprint such as advertising guides. *Does not include bagged newspaper.*
2	**Corrugated Cardboard**	Uncoated brown cardboard boxes with a wavy core (no plastic liners or waxy coatings). Includes clean pizza boxes. *Does not include waxy or contaminated cardboard or cardboard within shrink wrap plastic, such as that from a case of bottled water.*
3	**Wet Corrugated Cardboard**	Corrugated cardboard that is waterlogged or has lost structural integrity due to moisture. *Does not include damp cardboard.*
4	**Magazines and Catalogs**	All magazines and catalogs, including glossy magazines.
5	**Mixed Recyclable Paper**	Printed or unprinted recyclable paper including white, colored, coated and uncoated papers, envelopes, index cards, file folders, telephone books, paperboard, chipboard, Kraft paper, brown paper bags, mail, paperback books, blueprints, and other printed material on glossy and non-glossy paper. *Does not include shredded, contaminated, waxy, or metallic paper.*
6	**Wet Paper**	Newspaper and mixed recyclable paper that is waterlogged or has lost structural integrity due to moisture. *Does not include damp paper.*
7	**Shredded Paper**	All significant amounts of shredded paper that can be manually separated. Includes bagged shredded paper. Any negligible amounts of shredded paper will be included in Grit or Other Contaminants.
8	**Film-Wrapped Paper**	Newspaper or magazines inside plastics sleeves. Corrugated cardboard within shrink wrap plastic, such as that from a case of bottled water.
9	**Aseptic Containers/ Cartons**	Gable-top cartons, aseptic juice boxes, and other similar containers made of coated paperboard.
10	**PET Bottles (#1)**	Clear and colored bottles and jars coded polyethylene terephthalate (PET #1). Examples include soda bottles, water bottles, food jars, etc. *Does not include loose caps and lids.*
11	**Natural HDPE Bottles (#2)**	Clear/natural plastic bottles coded high-density polyethylene (HDPE #2). Examples include milk jugs, vinegar bottles, and gallon water bottles. *Does not include loose caps and lids. Containers >3 gallons are considered Bulky Rigid Plastics.*
12	**Colored HDPE Bottles (#2)**	Opaque, pigmented plastic bottles coded high-density polyethylene (HDPE #2). Examples include detergent and shampoo bottles. *Does not include loose caps and lids. Containers >3 gallons are considered Bulky Rigid Plastics.*
13	**Non-Bottle PET Containers (#1)**	Clear and colored plastic non-bottle, non-jar containers coded PET #1. Examples include clamshell containers, fruit or vegetable platters, and some plastic drink cups.

#	Material Categories	Description of Categories
14	**Non-Bottle HDPE Containers (#2)**	Wide-mouthed tubs and containers coded HDPE #2. Examples include large plastic coffee containers and plastic chip tubes, including lids. *Containers >3 gallons are considered Bulky Rigid Plastics.*
15	**PP Containers (#5)**	Clear and colored plastic containers coded PP #5. Examples include some dairy product cups and tubs, pill bottles, frozen food trays, and plastic drink cups. *Does not include loose caps and lids. Containers >3 gallons are considered Bulky Rigid Plastics.*
16	**Other Plastic Containers (#3,4,6,7)**	All plastic containers coded #3, #4, #6, or #7. Examples include some bottles, some drink cups, some clamshells, and Arizona Iced Tea™ gallon jugs.
17	**Bulky Rigid Plastics**	Non-container rigid plastic items such as crates, baskets, toys, refuse totes, lawn furniture, laundry baskets, and other large plastic items. Includes containers (e.g. flower pots, buckets, drums) greater than 3 gallons. *Does not include electronic or electric toys, or bulky items consisting of mixed materials.*
18	**Expanded Polystyrene Foam (EPS)**	Container and non-container materials made of expanded polystyrene, which are typically white but may be pigmented. Examples include coolers, packaging materials, egg cartons, clamshell containers, and disposable cups and plates.
19	**Non-Rigid Plastic Film**	Loose and bagged plastic bags, clean garbage bags, shrink wrap, food wrap, re-sealable bags, plastic sheeting, etc.
20	**Tin/Steel Cans**	Tin-plated steel cans, usually food containers and empty aerosol cans, including labels. Includes steel caps/lids.
21	**Ferrous Scrap Metal**	Non-container ferrous materials. Examples include metal clothes hangers, sheet metal products, pipes, miscellaneous metal scraps, pots and pans, and other magnetic metal items.
22	**Aluminum Cans**	Aluminum soft drink, beer, food cans, and empty aerosol cans.
23	**Aluminum Foil and Trays**	Aluminum foil and food trays, such as disposable pie plates and catering trays. *Does not include excessively dirty foil and trays.*
24	**Non-Ferrous Scrap Metal**	Non-container, non-foil, non-ferrous metals, such as aluminum cooking pans, copper wiring and tubing, and brass fixtures.
25	**Glass Containers**	All clear, green, blue, and amber glass bottles and jars as well as broken container glass pieces.
26	**Bagged Waste**	Any bagged material with more than 20% of non-recyclables or heavily contaminated recyclables.
27	**Bagged Recyclables**	Any bagged material with less than 20% of non-recyclables.
28	**Tanglers**	Any materials that could potentially be tanglers during processing (i.e. could wrap around an arm), such as hoses, extension cords, Christmas lights, wire hangers.
29	**Small Appliances**	Electronics and household appliances primarily composed of mixed materials (plastic, metal, and glass), such as coffee makers, microwaves, fans, irons, hair dryers, electrical kitchenware, and salvageable items such as machinery. *Does not include non-alkaline batteries.*

#	Material Categories	Description of Categories
30	**Hazardous/Special Waste**	All hazardous or other waste that would require special disposal, including motor oil and oil filters, fluorescent lights, paints, solvents, pesticides, and medical wastes.
31	**Non-Alkaline Batteries**	Rechargeable, lead-acid, lithium-ion, Ni-Cd, nickel metal hydride, lithium, mercury, silver oxide, or zinc air batteries.
32	**Yard Waste**	Shrub and brush prunings, household bedding plants, weeds, leaves, grass clippings, and other landscaping and gardening wastes. Includes planting media (soil, compost, peat moss, etc.).
33	**Full Containers**	Any containers filled by 25% or more of food or liquid.
34	**Liquids**	Any liquid or food from containers filled by less than 25% of food or liquid. Note: This category was not included in the composition because these liquids are assumed to be lost during processing and baling.
35	**Other Contaminants**	Materials not included in the other categories, such as waxy corrugated cardboard/paper, paper tissue, paper towels, paper plates, contaminated paper (>50% by surface area), ice cream containers, paper cups, diapers, food waste, yard waste, interlocked/multi-material products, non-container glass, loose plastic caps and lids, straws, plastic cutlery and plates.
36	**Grit**	All material that falls through a ½-inch-square screen.

Appendix B:
Pinellas County
Municipal Recyclables Composition Study
Individual Municipality Results

St. Petersburg

Background

Population	265,098
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Mon, Tue, Thu, Fri
Single stream recycling tonnage (2019 reported)	Single family – 13,039 Drop-off – n/a Multi-family – n/a Commercial – n/a Total - 13,039

Sampling Schedule

Sector	Mon 10/12	Tue 10/13	Thu 10/15	Fri 10/16	Mon 10/19	Tue 10/20	Thu 10/22	Fri 10/23	Total
Single family	3	3	4	4	4	3	4	4	**29**

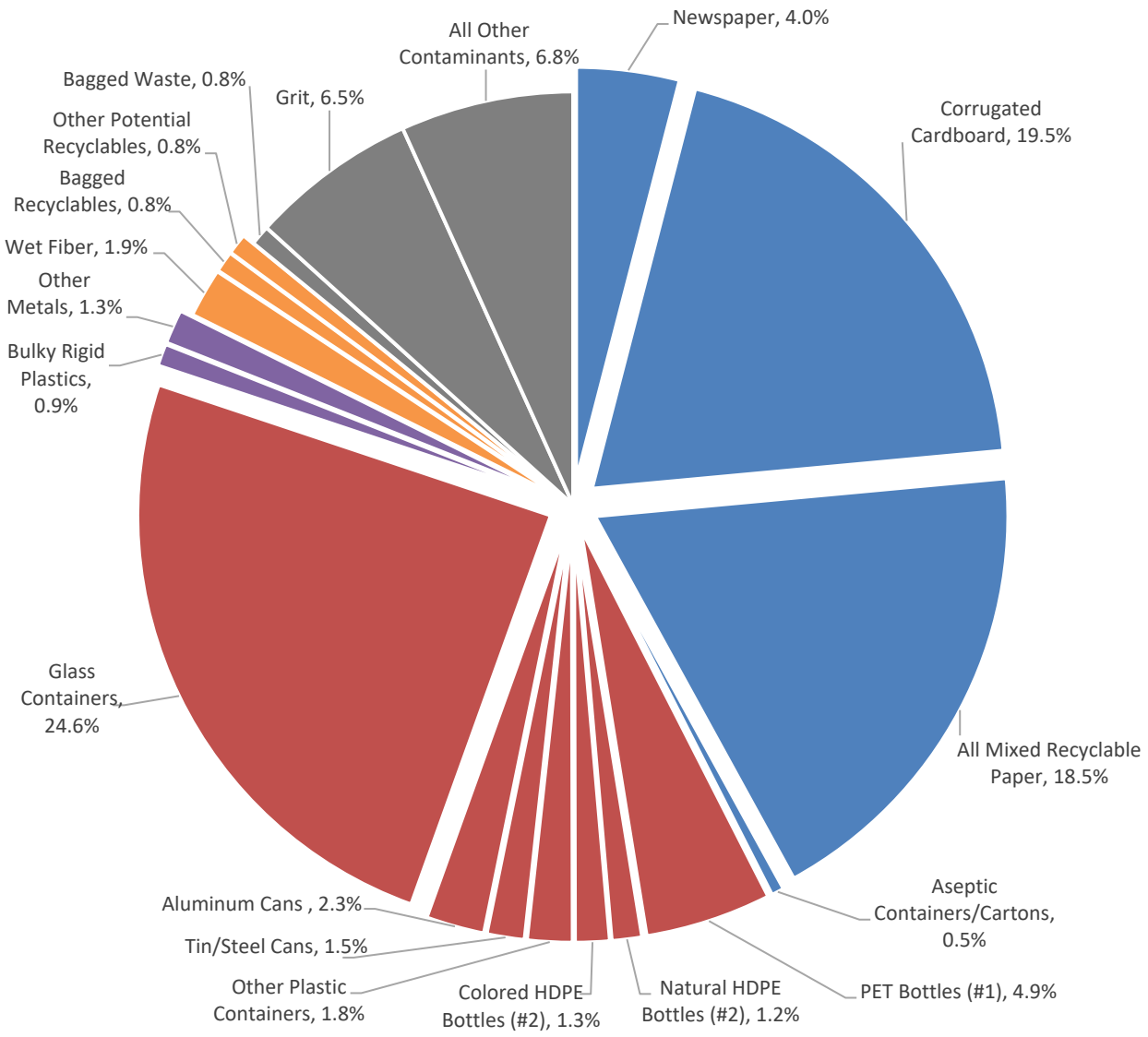
Results

Figure B-1 depicts the weighted average composition of single stream recyclables from St. Petersburg. Table B-1 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS. Table B-2 lists the weighted average composition for each route in St. Petersburg. Results for individual samples from St. Peterburg are included in Table B-3.

Key findings from St. Petersburg results include:

- Overall, the composition of the recyclables was fairly similar to the average.
- Approximately 82 percent of the recyclables were acceptable material. Recyclable paper was slightly higher than recyclable containers. Glass containers average percentage was slightly higher than the countywide average.
- Approximately 18 percent of the stream was unacceptable material (potential recyclables and contaminants). While grit was higher than average, possibly due to a higher percentage of glass, all other categories of contaminants were at or below the Countywide average.
- Route A-3 had the highest average percentage of unacceptable material, at 24 percent, partially because one of the three samples had a heavy bag of clothing resulting in nearly 20 percent other contaminants for that sample. Route A-1 had a very high percentage of wet fiber and bagged recyclables, again because of high percentages in one of the samples.
- A total of 18 bags of recyclables and 12 tanglers were found in all 29 samples from St. Petersburg.

Figure B-1: Composition of St. Petersburg Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-1: Composition of St. Petersburg Single Stream Recyclables (% by Weight)

Material Category	Weighted Average	90% Confidence Interval	
		Lower Bounds	Upper Bounds
Newspaper	4.0%	3.3%	4.7%
Corrugated Cardboard	19.5%	16.4%	22.6%
Magazines and Catalogs	3.4%	2.7%	4.0%
Mixed Recyclable Paper	15.1%	13.2%	17.0%
Aseptic Containers/Cartons	0.5%	0.4%	0.6%
Recyclable Paper	**42.5%**	**38.6%**	**46.5%**
PET Bottles (#1)	4.9%	4.3%	5.6%
Natural HDPE Bottles (#2)	1.2%	1.0%	1.4%
Colored HDPE Bottles (#2)	1.3%	1.1%	1.6%
Non-Bottle PET Containers (#1)	0.8%	0.7%	1.0%
Non-Bottle HDPE Containers (#2)	0.1%	0.1%	0.2%
PP Containers (#5)	0.7%	0.6%	0.8%
Other Plastic Containers (#3,4,6,7)	0.1%	0.1%	0.2%
Tin/Steel Cans	1.5%	1.2%	1.7%
Aluminum Cans	2.3%	2.0%	2.6%
Glass Containers	24.6%	20.7%	28.6%
Recyclable Containers	**37.6%**	**34.1%**	**41.2%**
Bulky Rigid Plastics	0.9%	0.3%	1.4%
Ferrous Scrap Metal	1.1%	0.3%	2.0%
Aluminum Foil and Trays	0.1%	0.0%	0.3%
Non-Ferrous Scrap Metal	0.1%	0.0%	0.2%
Other Recyclables	**2.2%**	**1.2%**	**3.2%**
Wet Corrugated Cardboard	0.8%	0.4%	1.3%
Wet Paper	1.1%	0.7%	1.5%
Shredded Paper	0.0%	0.0%	0.1%
Film-Wrapped Paper	0.3%	0.2%	0.4%
Bagged Recyclables	0.8%	0.4%	1.2%
Full Containers	0.5%	0.2%	0.7%
Potential Recyclables	**3.6%**	**2.4%**	**4.8%**
EPS Foam	0.1%	0.1%	0.2%
Non-Rigid Plastic Film	0.8%	0.6%	1.0%
Bagged Waste	0.8%	0.2%	1.3%
Tanglers	0.2%	0.0%	0.4%
Small Appliances	0.1%	-0.1%	0.4%
Hazardous/Special Waste	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.1%	-0.1%	0.3%
Yard Waste	0.0%	0.0%	0.0%
Other Contaminants	5.4%	4.2%	6.6%
Grit	6.5%	4.9%	8.1%
Contaminants	**14.1%**	**12.4%**	**15.8%**
Total Acceptable Material	**78.0%**		
Total Unacceptable Material	**22.0%**		
Total	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-2: Composition of St. Petersburg Single Stream Recyclables by Route (% by Weight)

Material Category	A-1	A-3	A-5	A-7	B-2	B-4	B-6	B-8
Newspaper	3.6%	2.7%	4.1%	4.1%	3.4%	3.1%	5.1%	5.3%
Corrugated Cardboard	26.0%	19.6%	21.0%	11.7%	19.8%	22.8%	19.9%	16.0%
Magazines and Catalogs	1.8%	1.9%	2.4%	2.2%	2.8%	2.3%	6.8%	5.3%
Mixed Recyclable Paper	9.1%	17.6%	20.4%	17.3%	14.3%	13.1%	16.3%	12.0%
Aseptic Containers/Cartons	0.8%	0.5%	0.6%	0.4%	0.3%	0.5%	0.7%	0.2%
Recyclable Paper	**41.4%**	**42.4%**	**48.5%**	**35.8%**	**40.6%**	**41.7%**	**48.8%**	**38.6%**
PET Bottles (#1)	5.6%	7.5%	6.1%	4.5%	3.7%	6.1%	3.8%	3.8%
Natural HDPE Bottles (#2)	0.7%	2.2%	1.5%	0.9%	1.3%	1.6%	0.8%	0.8%
Colored HDPE Bottles (#2)	1.0%	2.6%	1.8%	0.7%	1.1%	1.8%	1.4%	1.0%
Non-Bottle PET Containers (#1)	1.0%	1.0%	0.5%	0.3%	0.9%	0.6%	1.0%	1.0%
Non-Bottle HDPE Containers (#2)	0.1%	0.3%	0.1%	0.3%	0.0%	0.0%	0.2%	0.0%
PP Containers (#5)	0.5%	0.9%	0.8%	0.8%	0.5%	1.0%	0.5%	0.6%
Other Plastic Containers (#3,4,6,7)	0.2%	0.2%	0.1%	0.1%	0.0%	0.2%	0.2%	0.1%
Tin/Steel Cans	2.2%	2.5%	1.3%	1.2%	0.7%	1.7%	1.7%	1.1%
Aluminum Cans	2.2%	2.4%	2.3%	2.1%	1.7%	3.3%	2.6%	2.0%
Glass Containers	22.1%	12.8%	16.7%	31.9%	28.4%	21.1%	25.9%	33.0%
Recyclable Containers	**35.6%**	**32.4%**	**31.2%**	**43.0%**	**38.5%**	**37.5%**	**38.1%**	**43.4%**
Bulky Rigid Plastics	0.7%	0.6%	3.1%	1.1%	0.2%	0.4%	0.0%	0.7%
Ferrous Scrap Metal	0.3%	0.2%	0.7%	4.0%	2.3%	0.9%	0.0%	0.3%
Aluminum Foil and Trays	0.1%	0.2%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Recyclables	**1.1%**	**1.2%**	**4.8%**	**5.1%**	**2.6%**	**1.4%**	**0.0%**	**1.0%**
Wet Corrugated Cardboard	3.9%	0.0%	0.9%	1.0%	0.3%	0.3%	0.2%	0.0%
Wet Paper	3.2%	0.0%	0.8%	1.6%	0.7%	1.1%	0.5%	0.8%
Shredded Paper	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.3%	0.4%	0.5%	0.0%	0.2%	0.6%	0.4%
Bagged Recyclables	2.5%	0.7%	0.5%	1.6%	0.3%	0.9%	0.0%	0.5%
Full Containers	1.5%	0.3%	0.3%	0.7%	0.1%	0.7%	0.1%	0.3%
Potential Recyclables	**11.1%**	**1.5%**	**3.0%**	**5.7%**	**1.4%**	**3.2%**	**1.4%**	**1.9%**
EPS Foam	0.1%	0.6%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%
Non-Rigid Plastic Film	1.1%	1.3%	1.1%	0.7%	0.7%	1.0%	0.5%	0.4%
Bagged Waste	0.4%	0.8%	1.6%	0.1%	2.2%	0.2%	0.0%	0.5%
Tanglers	0.0%	0.0%	0.2%	0.1%	0.9%	0.0%	0.0%	0.0%
Small Appliances	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.8%	0.0%	0.1%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Contaminants	4.3%	12.7%	5.0%	2.6%	4.2%	7.6%	5.1%	5.2%
Grit	5.0%	5.6%	4.3%	5.9%	9.0%	7.2%	6.0%	8.9%
Contaminants	**10.9%**	**22.5%**	**12.6%**	**10.4%**	**17.0%**	**16.2%**	**11.6%**	**15.0%**
Total Acceptable Material	**78.0%**	**76.0%**	**84.5%**	**83.9%**	**81.6%**	**80.6%**	**86.9%**	**83.1%**
Total Unacceptable Material	**22.0%**	**24.0%**	**15.5%**	**16.1%**	**18.4%**	**19.4%**	**13.1%**	**16.9%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-3: Individual St. Petersburg Sample Results (% by Weight)

Load Description	St. Petersburg: SF Resi - Mon 10/12, Route #A-1, Truck #6475	St. Petersburg: SF Resi - Mon 10/12, Route #A-1, Truck #4176	St. Petersburg: SF Resi - Mon 10/12, Route #A-1, Truck #672	St. Petersburg: SF Resi - Tue 10/13, Route #A-3, Truck #6505	St. Petersburg: SF Resi - Tue 10/13, Route #A-3, Truck 6353	St. Petersburg: SF Resi - Tue 10/13, Route #A-3, Truck #R4166	St. Petersburg: SF Resi - Thu 10/15, Route #A-5, Truck #6485
Material Categories sample #	**6**	**10**	**11**	**17**	**19**	**21**	**34**
Newspaper	9.8%	0.9%	2.0%	1.8%	2.4%	7.1%	1.3%
Corrugated Cardboard	38.2%	18.9%	23.8%	33.4%	11.4%	12.4%	17.4%
Wet Corrugated Cardboard	1.6%	0.4%	7.1%	0.1%	0.0%	0.0%	0.3%
Magazines and Catalogs	1.7%	3.6%	0.7%	1.9%	1.5%	3.6%	1.6%
Mixed Recyclable Paper	1.8%	12.7%	10.8%	17.5%	19.0%	12.4%	31.1%
Wet Paper	0.8%	0.9%	5.8%	0.0%	0.0%	0.3%	0.7%
Shredded Paper	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.1%	0.0%	0.0%	0.2%	0.3%	0.6%	1.1%
Aseptic Containers/ Cartons	0.8%	0.5%	1.1%	0.2%	0.7%	0.3%	0.6%
PET Bottles (#1)	8.7%	8.2%	2.3%	7.7%	7.6%	6.8%	7.2%
Natural HDPE Bottles (#2)	1.4%	1.2%	0.0%	1.6%	2.9%	1.0%	1.3%
Colored HDPE Bottles (#2)	1.4%	1.0%	0.7%	2.2%	3.1%	1.3%	1.9%
Non-Bottle PET Containers (#1)	0.4%	0.4%	1.7%	1.1%	1.0%	0.9%	0.6%
Non-Bottle HDPE Containers (#2)	0.2%	0.0%	0.1%	0.3%	0.3%	0.5%	0.2%
PP Containers (#5)	0.1%	1.0%	0.5%	0.7%	1.1%	0.7%	0.6%
Other Plastic Containers (#3,4,6,7)	0.4%	0.2%	0.1%	0.3%	0.2%	0.2%	0.1%
Bulky Rigid Plastics	0.0%	0.0%	1.4%	1.6%	0.1%	0.0%	8.3%
EPS Foam	0.2%	0.0%	0.2%	0.5%	0.7%	0.0%	0.1%
Non-Rigid Plastic Film	2.0%	0.3%	1.1%	1.6%	1.4%	0.3%	1.9%
Tin/Steel Cans	2.5%	3.4%	1.3%	1.7%	3.3%	1.3%	1.3%
Ferrous Scrap Metal	0.7%	0.3%	0.1%	0.2%	0.0%	0.6%	0.0%
Aluminum Cans	2.2%	3.3%	1.6%	2.6%	2.2%	2.8%	1.7%
Aluminum Foil and Trays	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%	0.0%
Glass Containers	12.3%	33.9%	20.3%	7.5%	12.5%	30.3%	10.1%
Bagged Waste	0.0%	0.0%	0.9%	1.0%	0.8%	0.0%	3.2%
Bagged Recyclables	0.0%	0.0%	5.2%	1.9%	0.0%	0.0%	1.9%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Small Appliances	0.0%	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
Full Containers	2.9%	0.0%	1.7%	0.0%	0.5%	0.4%	0.0%
Other Contaminants	6.1%	4.4%	3.2%	5.2%	19.9%	4.6%	2.5%
Grit	3.7%	4.4%	6.1%	2.5%	6.6%	11.3%	2.2%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.38	4.97	8.40	4.43	6.18	1.46	5.52

Note: Columns may appear to not sum correctly due to rounding.

Table B-3: Individual St. Petersburg Sample Results (% by Weight) (continued)

Load Description	St. Petersburg: SF Resi - Thu 10/15, Route #A-5, Truck #6515	St. Petersburg: SF Resi - Thu 10/15, Route #A-5, Truck #6505	St. Petersburg: SF Resi - Thu 10/15, Route #A-5, Truck #4166	St. Petersburg: SF Resi - Fri 10/16, Route #A-7, Truck #6475	St. Petersburg: SF Resi - Fri 10/16, Route #A-7, Truck #6444	St. Petersburg: SF Resi - Fri 10/16, Route #A-7, Truck #4176	St. Petersburg: SF Resi - Fri 10/16, Route #A-7, Truck #6515
Material Categories sample #	**36**	**37**	**45**	**51**	**52**	**53**	**54**
Newspaper	5.0%	7.4%	3.2%	4.0%	5.0%	5.1%	2.6%
Corrugated Cardboard	35.1%	16.4%	15.3%	14.4%	15.8%	9.8%	6.8%
Wet Corrugated Cardboard	0.0%	1.0%	2.2%	3.0%	0.0%	0.6%	0.8%
Magazines and Catalogs	2.7%	4.8%	0.7%	0.7%	4.7%	1.2%	1.6%
Mixed Recyclable Paper	16.9%	15.5%	17.4%	16.4%	25.2%	15.2%	11.5%
Wet Paper	0.0%	1.4%	1.3%	0.9%	0.3%	1.9%	3.4%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Film-Wrapped Paper	0.0%	0.1%	0.5%	0.2%	1.1%	0.0%	0.6%
Aseptic Containers/ Cartons	0.5%	0.4%	0.7%	0.3%	0.2%	0.5%	0.7%
PET Bottles (#1)	4.8%	5.7%	6.5%	5.6%	2.9%	4.3%	5.4%
Natural HDPE Bottles (#2)	1.8%	1.6%	1.2%	1.7%	0.8%	0.5%	0.8%
Colored HDPE Bottles (#2)	2.8%	1.0%	1.4%	0.9%	0.4%	0.5%	0.9%
Non-Bottle PET Containers (#1)	0.7%	0.1%	0.7%	0.1%	0.3%	0.6%	0.4%
Non-Bottle HDPE Containers (#2)	0.3%	0.1%	0.0%	0.0%	0.1%	0.3%	0.7%
PP Containers (#5)	0.6%	1.0%	1.2%	0.6%	0.8%	0.6%	1.2%
Other Plastic Containers (#3,4,6,7)	0.2%	0.1%	0.1%	0.0%	0.2%	0.2%	0.1%
Bulky Rigid Plastics	3.4%	0.5%	0.0%	3.9%	0.0%	1.2%	0.0%
EPS Foam	0.2%	0.4%	0.0%	0.1%	0.1%	0.1%	0.2%
Non-Rigid Plastic Film	0.8%	0.9%	0.6%	0.7%	0.6%	0.4%	0.9%
Tin/Steel Cans	1.0%	0.9%	1.9%	0.9%	0.7%	1.8%	1.6%
Ferrous Scrap Metal	1.0%	0.7%	1.1%	0.3%	12.2%	1.6%	0.1%
Aluminum Cans	1.4%	2.5%	3.4%	2.2%	1.3%	3.0%	2.3%
Aluminum Foil and Trays	2.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%
Glass Containers	8.9%	23.9%	24.7%	31.0%	15.9%	34.2%	47.5%
Bagged Waste	2.7%	0.0%	0.5%	0.0%	0.0%	0.7%	0.0%
Bagged Recyclables	0.0%	0.0%	0.0%	3.2%	2.2%	1.2%	0.0%
Tanglers	0.0%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.2%	0.1%	0.9%	2.5%	0.0%	0.6%	0.0%
Other Contaminants	5.7%	6.8%	5.2%	3.3%	4.4%	3.0%	0.0%
Grit	1.1%	4.9%	9.1%	2.9%	4.8%	6.6%	9.0%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	5.29	4.88	5.46	4.21	5.40	3.73	5.23

Note: Columns may appear to not sum correctly due to rounding.

Table B-3: Individual St. Petersburg Sample Results (% by Weight) (continued)

Load Description	St. Petersburg: SF Resi - Mon 10/19, Route #B-2, Truck #6485	St. Petersburg: SF Resi - Mon 10/19, Route #B-2, Truck #6505	St. Petersburg: SF Resi - Mon 10/19, Route #B-2, Truck #6475	St. Petersburg: SF Resi - Mon 10/19, Route #B-2, Truck #4176	St. Petersburg: SF Resi - Tue 10/20, Route #B-4, Truck #6495	St. Petersburg: SF Resi - Tue 10/20, Route #B-4, Truck #6515	St. Petersburg: SF Resi - Tue 10/20, Route #B-4, Truck #4166
Material Categories sample #	**64**	**66**	**68**	**70**	**77**	**78**	**82**
Newspaper	2.5%	1.2%	7.0%	2.6%	3.0%	1.9%	4.3%
Corrugated Cardboard	42.2%	5.9%	20.1%	11.4%	19.0%	25.5%	24.5%
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	1.1%	0.6%	0.0%	0.2%
Magazines and Catalogs	4.2%	2.0%	3.3%	1.6%	3.2%	0.9%	2.5%
Mixed Recyclable Paper	20.6%	3.9%	22.4%	9.8%	12.2%	15.1%	12.1%
Wet Paper	0.2%	0.3%	0.0%	2.2%	2.0%	0.4%	0.8%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.1%	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%
Aseptic Containers/ Cartons	0.4%	0.2%	0.4%	0.3%	0.2%	0.9%	0.6%
PET Bottles (#1)	3.6%	1.2%	5.1%	4.9%	4.9%	9.2%	4.6%
Natural HDPE Bottles (#2)	1.6%	0.2%	2.0%	1.5%	1.2%	2.5%	1.0%
Colored HDPE Bottles (#2)	1.6%	0.2%	1.2%	1.7%	0.8%	2.9%	1.7%
Non-Bottle PET Containers (#1)	1.4%	0.4%	1.1%	0.9%	0.4%	0.7%	0.8%
Non-Bottle HDPE Containers (#2)	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
PP Containers (#5)	0.5%	0.2%	0.8%	0.4%	0.8%	0.9%	1.2%
Other Plastic Containers (#3,4,6,7)	0.2%	0.0%	0.0%	0.0%	0.1%	0.5%	0.2%
Bulky Rigid Plastics	0.0%	0.0%	0.6%	0.0%	0.0%	1.3%	0.0%
EPS Foam	0.1%	0.0%	0.1%	0.1%	0.2%	0.2%	0.0%
Non-Rigid Plastic Film	1.2%	0.0%	0.7%	0.8%	0.9%	1.2%	0.8%
Tin/Steel Cans	0.0%	0.3%	1.0%	1.7%	2.4%	1.1%	1.7%
Ferrous Scrap Metal	0.0%	0.0%	0.5%	9.3%	0.8%	2.1%	0.0%
Aluminum Cans	1.3%	0.8%	1.6%	3.1%	3.0%	4.4%	2.5%
Aluminum Foil and Trays	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	5.6%	55.6%	23.5%	28.2%	25.7%	14.6%	22.2%
Bagged Waste	9.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%
Bagged Recyclables	0.0%	0.0%	1.3%	0.0%	0.0%	2.9%	0.0%
Tanglers	0.0%	0.0%	2.7%	0.7%	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.0%	0.0%	0.3%	1.4%	0.0%	0.6%
Other Contaminants	1.5%	2.1%	2.1%	11.6%	6.5%	6.7%	9.8%
Grit	2.2%	25.4%	2.6%	5.6%	10.0%	3.8%	7.4%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	5.53	5.79	6.10	5.48	5.07	4.27	4.25

Note: Columns may appear to not sum correctly due to rounding.

Table B-3: Individual St. Petersburg Sample Results (% by Weight) (continued)

Load Description	St. Petersburg: SF Resi - Thu 10/22, Route #B-6, Truck #6485	St. Petersburg: SF Resi - Thu 10/22, Route #B-6, Truck #6725	St. Petersburg: SF Resi - Thu 10/22, Route #B-6, Truck #4176	St. Petersburg: SF Resi - Thu 10/22, Route #B-6, Truck #4166	St. Petersburg: SF Resi - Fri 10/23, Route #B-8, Truck #4166	St. Petersburg: SF Resi - Fri 10/23, Route #B-8, Truck #6515	St. Petersburg: SF Resi - Fri 10/23, Route #B-8, Truck #6465	St. Petersburg: SF Resi - Fri 10/23, Route #B-8, Truck #6725
Material Categories sample #	**96**	**102**	**104**	**110**	**112**	**113**	**117**	**123**
Newspaper	6.1%	3.4%	4.8%	6.7%	5.2%	5.0%	4.9%	5.9%
Corrugated Cardboard	17.9%	29.0%	18.9%	10.2%	36.3%	25.2%	10.2%	10.0%
Wet Corrugated Cardboard	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Magazines and Catalogs	5.6%	8.6%	6.6%	5.8%	4.3%	5.7%	4.1%	6.6%
Mixed Recyclable Paper	21.0%	9.9%	19.3%	18.2%	15.6%	14.4%	10.9%	10.3%
Wet Paper	0.3%	0.0%	2.0%	0.1%	2.2%	0.0%	1.1%	0.8%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.7%	1.0%	0.5%	0.0%	0.3%	1.2%	0.1%	0.0%
Aseptic Containers/ Cartons	0.8%	0.7%	1.2%	0.1%	0.8%	0.0%	0.0%	0.3%
PET Bottles (#1)	5.3%	2.4%	5.7%	2.8%	6.3%	4.2%	2.5%	4.4%
Natural HDPE Bottles (#2)	1.1%	0.5%	1.3%	0.5%	0.8%	1.7%	0.5%	0.5%
Colored HDPE Bottles (#2)	2.8%	1.5%	0.6%	0.7%	1.1%	1.1%	1.0%	0.8%
Non-Bottle PET Containers (#1)	1.6%	0.5%	1.8%	0.4%	0.8%	1.4%	0.4%	1.3%
Non-Bottle HDPE Containers (#2)	0.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
PP Containers (#5)	0.0%	0.5%	1.3%	0.3%	0.6%	0.6%	0.6%	0.8%
Other Plastic Containers (#3,4,6,7)	0.2%	0.0%	0.4%	0.2%	0.2%	0.0%	0.1%	0.1%
Bulky Rigid Plastics	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	1.0%	0.0%
EPS Foam	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%
Non-Rigid Plastic Film	0.7%	0.4%	0.6%	0.5%	1.0%	0.8%	0.1%	0.1%
Tin/Steel Cans	1.5%	1.2%	2.7%	1.5%	2.1%	1.0%	0.9%	1.3%
Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	3.0%	0.0%	0.2%	0.0%
Aluminum Cans	3.9%	1.1%	2.5%	3.6%	2.5%	1.9%	2.3%	1.8%
Aluminum Foil and Trays	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	23.0%	25.2%	21.3%	33.5%	8.5%	16.8%	40.0%	44.1%
Bagged Waste	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%
Bagged Recyclables	0.0%	0.0%	0.0%	0.0%	0.8%	1.6%	0.0%	0.0%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.3%	0.0%	0.1%	0.0%	0.0%	0.7%	0.3%	0.0%
Other Contaminants	5.2%	7.2%	3.8%	3.2%	5.3%	9.8%	2.4%	4.5%
Grit	1.7%	6.6%	3.2%	11.4%	2.4%	3.8%	16.3%	6.3%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.93	7.63	4.94	5.61	1.40	4.63	6.44	5.77

Note: Columns may appear to not sum correctly due to rounding.

Clearwater

Background

Population	115,589
Hauler	Self
Recycler	Waste Management
Collection days	Single family – Mon, Tue, Thu, Fri MF – Mon-Fri Commercial – Tue, Thu
Single stream recycling tonnage (2019 reported)	Single family – 6,210 Drop-off – 131 Multi-family – 858 Commercial – 1,062 **Total – 8,261**

Sampling Schedule

Sector	Mon 10/12	Tue 10/13	Wed 10/14	Thu 10/15	Fri 10/16	Mon 10/19	Tue 10/20	Wed 10/21	Thu 10/22	Fri 10/23	Total
Single Family	4	3		3	3	4	3		3	3	26
Drop-Off	1										1
Multi-Family	1		1			1		1			4
Commercial		1			1		1			1	**4**
Total	**6**	**4**	**1**	**3**	**4**	**5**	**4**	**1**	**3**	**4**	**35**

Results

Figure B-2 depicts the weighted average composition of single stream recyclables from Clearwater. Table B-4 provides the weighted average composition with a 95 percent confidence interval for each material category measured in the RCS along with the composition for each generator sector. Table B-5 lists the weighted average composition for each collection day. Results for individual samples from Clearwater are included in Table B-6.

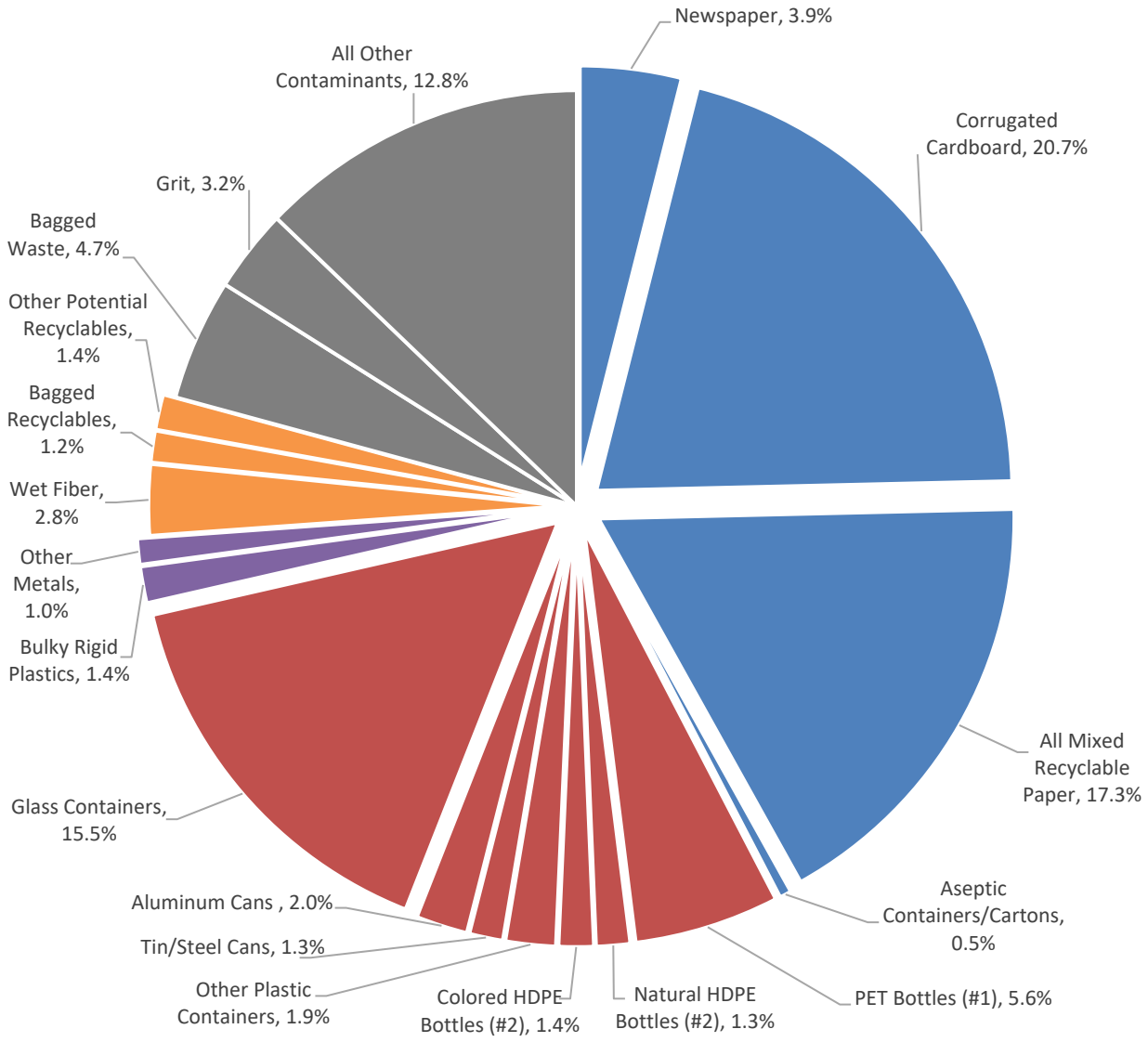
Key findings from Clearwater results include:

- Acceptable material comprised approximately 74 percent of the recyclables stream, which was lower than the municipal average. Corrugated cardboard, mixed recyclable paper, and glass containers were the three most significant categories. However, glass containers had a lower average percentage for Clearwater than the municipal average.
- Unacceptable material was over 26 percent (5.4 percent potential recyclables and 20.8 percent contaminants). This was higher than the municipal average and was one of the highest of any municipality. Almost every category of unacceptable material was higher than average, especially bagged waste which was almost 5 percent of the recyclables. Other contaminants percentage was higher than any other municipality, some large

other contaminants included household items, pavers, and other C&D debris, which caused some samples to be 15-20 percent other contaminants.

- The drop-off sample had a very low percentage of unacceptable material (7.5 percent), while the single family residential material had the highest percentage (27.5 percent). The multi-family sector had a high percentage of bagged recyclables, while all sectors except for drop-off had a higher percentage of bagged waste than the municipal average.
- All four collection days of single family residential material had a higher-than-municipal-average percentage of unacceptable material. Tuesday and Friday were particularly high, partly due to very high percentages of bagged waste. Tuesday's recyclables also had a high percentage of bagged recyclables.
- A total of 46 bags of recyclables and 15 tanglers were found in all 35 samples.

Figure B-2: Composition of Clearwater Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-4: Composition of Clearwater Single Stream Recyclables (% by Weight)

Material Category	Single Family	Multi-Family	Drop-off	Commercial	Weighted Average	95% Confidence Interval	
						Lower Bounds	Upper Bounds
Newspaper	4.0%	15.6%	7.7%	1.9%	3.9%	3.0%	4.9%
Corrugated Cardboard	19.6%	8.2%	11.5%	32.1%	20.7%	17.7%	23.7%
Magazines and Catalogs	2.8%	0.0%	3.9%	2.6%	2.8%	2.2%	3.4%
Mixed Recyclable Paper	14.8%	17.4%	17.2%	10.8%	14.5%	12.6%	16.3%
Aseptic Containers/Cartons	0.5%	1.5%	0.7%	0.2%	0.5%	0.4%	0.5%
Recyclable Paper	**41.7%**	**42.7%**	**40.9%**	**47.5%**	**42.4%**	**38.9%**	**45.9%**
PET Bottles (#1)	6.0%	9.3%	6.8%	2.9%	5.6%	5.0%	6.2%
Natural HDPE Bottles (#2)	1.4%	2.3%	1.7%	0.7%	1.3%	1.1%	1.6%
Colored HDPE Bottles (#2)	1.4%	1.4%	1.6%	0.8%	1.4%	1.2%	1.6%
Non-Bottle PET Containers (#1)	0.9%	1.9%	1.1%	0.5%	0.8%	0.7%	1.0%
Non-Bottle HDPE Containers (#2)	0.2%	0.2%	0.3%	0.1%	0.2%	0.1%	0.3%
PP Containers (#5)	0.8%	1.3%	0.8%	0.4%	0.7%	0.6%	0.8%
Other Plastic Containers (#3,4,6,7)	0.2%	0.4%	0.4%	0.0%	0.2%	0.1%	0.2%
Tin/Steel Cans	1.4%	1.6%	1.1%	0.9%	1.3%	1.2%	1.4%
Aluminum Cans	2.2%	1.6%	1.6%	0.7%	2.0%	1.8%	2.3%
Glass Containers	13.8%	29.9%	25.2%	22.4%	15.5%	12.6%	18.4%
Recyclable Containers	**28.3%**	**49.8%**	**40.5%**	**29.3%**	**29.1%**	**26.2%**	**31.9%**
Bulky Rigid Plastics	1.4%	0.0%	0.0%	2.0%	1.4%	0.9%	2.0%
Ferrous Scrap Metal	1.0%	0.0%	0.8%	0.4%	0.9%	0.5%	1.3%
Aluminum Foil and Trays	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%
Other Recyclables	**2.5%**	**0.0%**	**1.1%**	**2.4%**	**2.4%**	1.8%	3.0%
Wet Corrugated Cardboard	0.4%	0.0%	0.0%	4.1%	0.8%	0.3%	1.4%
Wet Paper	1.8%	0.1%	0.5%	3.3%	1.9%	1.4%	2.4%
Shredded Paper	0.2%	0.0%	0.0%	0.2%	0.2%	0.0%	0.4%
Film-Wrapped Paper	0.8%	0.2%	0.1%	0.0%	0.7%	0.4%	0.9%
Bagged Recyclables	1.2%	0.8%	2.4%	1.3%	1.2%	0.6%	1.8%
Full Containers	0.5%	0.5%	0.5%	0.2%	0.5%	0.3%	0.7%
Potential Recyclables	**4.9%**	**1.7%**	**3.5%**	**9.1%**	**5.4%**	4.4%	6.4%
EPS Foam	0.2%	0.0%	0.1%	0.2%	0.2%	0.2%	0.3%
Non-Rigid Plastic Film	1.1%	0.9%	1.1%	0.5%	1.0%	0.9%	1.2%
Bagged Waste	4.9%	1.5%	3.9%	3.7%	4.7%	2.9%	6.5%
Tanglers	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.2%
Small Appliances	0.6%	0.0%	0.0%	0.1%	0.5%	0.1%	0.9%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.8%	0.1%	0.0%	0.2%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.7%	0.0%	0.0%	0.0%	0.6%	-0.2%	1.4%
Other Contaminants	11.4%	3.3%	7.5%	3.7%	10.2%	8.7%	11.7%
Grit	3.4%	0.1%	1.4%	2.7%	3.2%	2.7%	3.7%
Contaminants	**22.6%**	**5.8%**	**14.0%**	**11.6%**	**20.8%**	17.5%	24.1%
Total Acceptable Material	**72.5%**	**92.5%**	**82.5%**	**79.2%**	**73.9%**		
Total Unacceptable Material	**27.5%**	**7.5%**	**17.5%**	**20.8%**	**26.1%**		
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-5: Composition of Clearwater Recyclables by Collection Day for Single Family Residential (% by Weight)

Material Category	Mon	Tue	Thu	Fri
Newspaper	5.1%	4.0%	3.9%	2.6%
Corrugated Cardboard	19.9%	15.1%	24.0%	18.3%
Magazines and Catalogs	3.0%	2.9%	3.8%	1.5%
Mixed Recyclable Paper	17.9%	12.9%	14.9%	12.4%
Aseptic Containers/Cartons	0.5%	0.5%	0.3%	0.6%
Recyclable Paper	**46.4%**	**35.4%**	**47.0%**	**35.5%**
PET Bottles (#1)	5.6%	6.5%	6.1%	5.8%
Natural HDPE Bottles (#2)	1.4%	1.7%	1.3%	1.2%
Colored HDPE Bottles (#2)	1.1%	2.0%	1.4%	1.4%
Non-Bottle PET Containers (#1)	0.8%	0.9%	1.2%	0.6%
Non-Bottle HDPE Containers (#2)	0.3%	0.2%	0.3%	0.2%
PP Containers (#5)	0.7%	0.9%	0.8%	0.7%
Other Plastic Containers (#3,4,6,7)	0.2%	0.3%	0.1%	0.1%
Tin/Steel Cans	1.2%	1.6%	1.3%	1.4%
Aluminum Cans	1.8%	2.7%	2.2%	2.4%
Glass Containers	14.3%	12.8%	15.4%	12.4%
Recyclable Containers	**27.5%**	**29.5%**	**30.1%**	**26.2%**
Bulky Rigid Plastics	1.2%	1.7%	0.8%	2.2%
Ferrous Scrap Metal	1.0%	0.6%	0.5%	1.9%
Aluminum Foil and Trays	0.1%	0.0%	0.2%	0.1%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.1%
Other Recyclables	**2.2%**	**2.4%**	**1.5%**	**4.2%**
Wet Corrugated Cardboard	0.5%	0.6%	0.3%	0.2%
Wet Paper	2.0%	1.8%	0.8%	2.6%
Shredded Paper	0.1%	0.2%	0.1%	0.5%
Film-Wrapped Paper	0.4%	0.5%	1.7%	0.8%
Bagged Recyclables	0.6%	2.7%	1.2%	0.4%
Full Containers	0.5%	0.5%	0.3%	0.8%
Potential Recyclables	**4.1%**	**6.2%**	**4.4%**	**5.4%**
EPS Foam	0.1%	0.3%	0.4%	0.3%
Non-Rigid Plastic Film	0.9%	1.2%	1.2%	1.2%
Bagged Waste	3.8%	6.2%	2.2%	8.4%
Tanglers	0.2%	0.0%	0.1%	0.2%
Small Appliances	0.5%	1.0%	0.3%	0.8%
Hazardous/Special Waste	0.0%	0.0%	0.1%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.3%	0.0%	0.0%	2.7%
Other Contaminants	10.6%	14.7%	9.3%	11.7%
Grit	3.5%	3.1%	3.5%	3.4%
Contaminants	**19.8%**	**26.5%**	**17.1%**	**28.6%**
Total Acceptable Material	**76.1%**	**67.3%**	**78.5%**	**66.0%**
Total Unacceptable Material	**23.9%**	**32.7%**	**21.5%**	**34.0%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-6: Individual Clearwater Sample Results (% by Weight)

Load Description	Clearwater: SF Resi - Mon 10/12, Route #2, Truck #4652	Clearwater: SF Resi - Mon 10/12, Route #1, Truck #3953	Clearwater: SF Resi - Mon 10/12, Route #3, Truck #4323	Clearwater: SF Resi - Mon 10/12, Route #4, Truck #4458	Clearwater: SF Resi - Tue 10/13, Route #5, Truck #4459	Clearwater: SF Resi - Tue 10/13, Route #3, Truck #4323	Clearwater: SF Resi - Tue 10/13, Route #4, Truck #4458
Material Categories sample #	**7**	**8**	**9**	**12**	**16**	**18**	**20**
Newspaper	6.2%	4.9%	2.8%	5.6%	9.2%	0.7%	2.7%
Corrugated Cardboard	8.8%	18.2%	14.3%	27.5%	18.2%	19.7%	16.7%
Wet Corrugated Cardboard	0.3%	0.4%	3.5%	0.5%	0.0%	0.0%	0.7%
Magazines and Catalogs	3.7%	2.8%	3.2%	3.9%	6.4%	2.7%	1.1%
Mixed Recyclable Paper	19.0%	19.1%	19.1%	22.9%	14.6%	9.3%	23.5%
Wet Paper	2.3%	3.5%	3.2%	2.7%	0.3%	3.2%	0.8%
Shredded Paper	0.0%	1.3%	0.0%	0.1%	1.1%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.2%	0.3%	0.3%	1.1%	0.4%	0.4%
Aseptic Containers/ Cartons	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.9%
PET Bottles (#1)	3.7%	4.1%	6.3%	5.8%	4.1%	5.2%	9.6%
Natural HDPE Bottles (#2)	0.4%	0.2%	0.9%	1.2%	0.4%	0.8%	3.3%
Colored HDPE Bottles (#2)	0.8%	1.1%	0.7%	0.8%	1.1%	1.5%	2.3%
Non-Bottle PET Containers (#1)	0.0%	0.6%	1.0%	0.7%	0.6%	0.5%	1.4%
Non-Bottle HDPE Containers (#2)	0.7%	0.1%	0.0%	0.2%	0.0%	0.0%	0.2%
PP Containers (#5)	0.6%	0.5%	0.5%	0.9%	1.2%	0.9%	1.1%
Other Plastic Containers (#3,4,6,7)	0.0%	0.1%	0.2%	0.2%	0.1%	0.1%	0.4%
Bulky Rigid Plastics	0.4%	2.0%	0.0%	0.0%	0.2%	0.0%	1.3%
EPS Foam	0.1%	0.0%	0.1%	0.1%	0.3%	0.2%	0.2%
Non-Rigid Plastic Film	0.3%	0.3%	0.8%	0.8%	0.6%	1.2%	1.0%
Tin/Steel Cans	1.8%	0.7%	1.8%	0.9%	1.5%	1.7%	1.6%
Ferrous Scrap Metal	1.4%	1.1%	0.0%	0.2%	2.8%	0.1%	0.0%
Aluminum Cans	1.8%	1.7%	1.8%	1.5%	2.1%	2.4%	2.6%
Aluminum Foil and Trays	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Glass Containers	24.0%	17.5%	24.0%	10.1%	14.3%	16.5%	11.8%
Bagged Waste	0.9%	4.0%	4.2%	0.5%	0.0%	3.8%	0.0%
Bagged Recyclables	3.1%	0.0%	0.7%	0.0%	3.8%	0.0%	10.7%
Tanglers	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.2%	6.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	1.5%	0.8%	0.9%	0.0%	0.2%	1.7%	0.0%
Other Contaminants	12.6%	8.7%	7.6%	6.7%	13.7%	18.2%	3.6%
Grit	3.1%	2.8%	1.8%	5.6%	1.7%	2.6%	2.1%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.04	3.21	3.95	5.63	3.97	3.84	4.12

Note: Columns may appear to not sum correctly due to rounding.

Table B-6: Individual Clearwater Sample Results (% by Weight) (continued)

Load Description	Clearwater: SF Resi – Thu 10/15, Route #1, Truck #3953	Clearwater: SF Resi – Thu 10/15, Route #3, Truck #4323	Clearwater: SF Resi – Thu 10/15, Route #4, Truck #4458	Clearwater: SF Resi – Fri 10/16, Route #5, Truck #4459	Clearwater: SF Resi – Fri 10/16, Route #6, Truck #4460	Clearwater: SF Resi – Fri 10/16, Route #4, Truck #4458	Clearwater: SF Resi - Mon 10/19, Route #5, Truck #4459
Material Categories sample #	**38**	**41**	**44**	**55**	**56**	**58**	**69**
Newspaper	3.8%	5.4%	2.6%	2.0%	1.2%	0.4%	1.7%
Corrugated Cardboard	15.5%	18.3%	29.9%	22.8%	13.5%	22.4%	28.7%
Wet Corrugated Cardboard	1.3%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
Magazines and Catalogs	7.1%	6.4%	1.0%	0.5%	3.6%	1.1%	0.6%
Mixed Recyclable Paper	20.3%	14.5%	15.2%	24.0%	11.8%	5.6%	12.0%
Wet Paper	1.3%	0.3%	0.0%	2.3%	2.1%	6.4%	0.3%
Shredded Paper	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	1.3%	0.9%	4.6%	1.5%	1.1%	0.0%	0.1%
Aseptic Containers/ Cartons	0.5%	0.3%	0.2%	0.6%	0.4%	0.9%	0.8%
PET Bottles (#1)	5.7%	4.2%	5.9%	8.2%	6.2%	3.1%	6.5%
Natural HDPE Bottles (#2)	1.0%	1.1%	1.9%	2.6%	0.9%	0.7%	3.0%
Colored HDPE Bottles (#2)	1.0%	1.0%	1.7%	2.1%	1.4%	0.9%	1.7%
Non-Bottle PET Containers (#1)	0.1%	0.8%	1.7%	0.2%	0.5%	0.3%	1.0%
Non-Bottle HDPE Containers (#2)	0.0%	0.3%	0.5%	0.2%	0.0%	0.2%	0.1%
PP Containers (#5)	1.1%	1.1%	1.0%	1.2%	0.3%	0.5%	1.0%
Other Plastic Containers (#3,4,6,7)	0.2%	0.2%	0.0%	0.3%	0.1%	0.0%	0.2%
Bulky Rigid Plastics	0.8%	0.2%	0.5%	4.0%	2.2%	3.7%	2.0%
EPS Foam	0.1%	0.3%	0.6%	0.2%	0.5%	0.3%	0.2%
Non-Rigid Plastic Film	1.1%	1.0%	1.2%	1.6%	1.5%	0.6%	2.0%
Tin/Steel Cans	0.9%	0.8%	2.0%	1.6%	1.4%	1.4%	1.0%
Ferrous Scrap Metal	1.0%	0.0%	0.2%	0.3%	1.8%	0.9%	0.8%
Aluminum Cans	2.8%	1.6%	1.6%	4.3%	2.0%	1.3%	2.0%
Aluminum Foil and Trays	0.1%	0.1%	0.4%	0.2%	0.2%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
Glass Containers	16.3%	24.4%	5.9%	8.6%	10.2%	11.8%	8.4%
Bagged Waste	0.4%	2.7%	5.6%	0.0%	12.8%	23.1%	3.9%
Bagged Recyclables	0.0%	3.2%	1.4%	0.8%	0.9%	0.0%	0.7%
Tanglers	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
Small Appliances	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	2.8%
Hazardous/Special Waste	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.8%	0.0%	0.1%	2.0%	0.0%	0.7%
Other Contaminants	13.2%	6.4%	7.2%	5.3%	16.6%	11.5%	16.3%
Grit	3.0%	2.0%	6.8%	4.2%	5.0%	2.1%	1.5%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	3.51	4.93	6.81	5.43	4.66	5.17	4.69

Note: Columns may appear to not sum correctly due to rounding.

Table B-6: Individual Clearwater Sample Results (% by Weight) (continued)

Load Description	Clearwater: SF Resi - Mon 10/19, Route #3, Truck #4323	Clearwater: SF Resi - Mon 10/19, Route #4, Truck #4458	Clearwater: SF Resi - Mon 10/19, Route #6, Truck #4460	Clearwater: SF Resi – Tue 10/20, Route #1, Truck #4460	Clearwater: SF Resi – Tue 10/20, Route #2, Truck #4652	Clearwater: SF Resi – Tue 10/20, Route #3, Truck #4323	Clearwater: SF Resi – Thu 10/22, Route #5, Truck #3692
Material Categories sample #	**71**	**72**	**74**	**83**	**84**	**85**	**98**
Newspaper	8.0%	5.4%	6.3%	0.9%	8.2%	0.8%	4.2%
Corrugated Cardboard	22.1%	27.9%	9.7%	15.0%	14.5%	5.9%	37.6%
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	1.6%	0.6%	0.6%	0.2%
Magazines and Catalogs	1.3%	5.5%	2.8%	1.5%	4.7%	0.3%	2.9%
Mixed Recyclable Paper	15.8%	15.0%	19.4%	12.0%	10.9%	6.3%	16.1%
Wet Paper	0.3%	0.3%	3.3%	0.5%	1.2%	5.3%	0.2%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.3%	1.0%	0.8%	0.3%	0.0%	0.7%	0.4%
Aseptic Containers/ Cartons	0.6%	0.7%	0.4%	0.6%	0.7%	0.5%	0.4%
PET Bottles (#1)	6.8%	5.3%	5.7%	8.7%	6.7%	4.4%	8.3%
Natural HDPE Bottles (#2)	1.8%	1.0%	2.2%	2.5%	2.1%	0.6%	1.3%
Colored HDPE Bottles (#2)	1.4%	1.3%	1.0%	2.6%	3.2%	0.9%	1.5%
Non-Bottle PET Containers (#1)	1.4%	0.7%	0.9%	1.4%	0.6%	0.8%	1.5%
Non-Bottle HDPE Containers (#2)	0.8%	0.5%	0.0%	0.1%	0.2%	0.5%	0.0%
PP Containers (#5)	1.4%	0.8%	0.1%	0.5%	0.9%	0.7%	0.4%
Other Plastic Containers (#3,4,6,7)	0.3%	0.2%	0.0%	1.1%	0.2%	0.1%	0.3%
Bulky Rigid Plastics	1.2%	2.2%	2.0%	7.5%	0.3%	0.9%	0.3%
EPS Foam	0.2%	0.0%	0.0%	0.3%	0.3%	0.1%	0.4%
Non-Rigid Plastic Film	0.5%	1.6%	0.7%	2.1%	1.5%	0.7%	0.9%
Tin/Steel Cans	0.9%	1.3%	1.3%	1.7%	1.5%	1.6%	0.9%
Ferrous Scrap Metal	0.6%	1.2%	2.4%	0.0%	0.2%	0.8%	0.0%
Aluminum Cans	1.1%	1.9%	2.8%	3.1%	3.9%	2.0%	2.0%
Aluminum Foil and Trays	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	13.7%	9.6%	11.4%	6.8%	9.6%	19.0%	12.3%
Bagged Waste	0.0%	4.6%	11.4%	5.0%	5.2%	25.7%	0.6%
Bagged Recyclables	0.0%	0.0%	0.5%	1.3%	0.0%	0.0%	0.6%
Tanglers	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%
Small Appliances	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.0%	0.0%	0.4%	0.2%	0.7%	0.0%
Other Contaminants	15.6%	9.2%	8.4%	19.0%	17.5%	16.7%	5.7%
Grit	3.5%	2.2%	6.2%	3.4%	5.1%	3.3%	0.9%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.17	3.94	5.21	3.91	4.72	3.49	4.61

Note: Columns may appear to not sum correctly due to rounding.

Table B-6: Individual Clearwater Sample Results (% by Weight) (continued)

Load Description	Clearwater: SF Resi – Thu 10/22, Route #6, Truck #4460	Clearwater: SF Resi – Thu 10/22, Route #3, Truck #4323	Clearwater: SF Resi – Fri 10/23, Route #2, Truck #4652	Clearwater: SF Resi – Fri 10/23, Route #1, Truck #3953	Clearwater: SF Resi – Fri 10/23, Route #3, Truck #4323	Clearwater: Drop-off - Mon 10/12, Truck #3969
Material Categories sample #	**103**	**105**	**114**	**116**	**122**	**5**
Newspaper	2.5%	5.2%	2.9%	9.4%	2.2%	15.6%
Corrugated Cardboard	15.5%	21.4%	16.4%	15.0%	17.2%	8.2%
Wet Corrugated Cardboard	0.7%	0.0%	0.0%	1.1%	0.0%	0.0%
Magazines and Catalogs	2.3%	4.3%	2.3%	1.7%	0.2%	0.0%
Mixed Recyclable Paper	9.5%	13.8%	12.6%	13.9%	5.7%	17.4%
Wet Paper	2.1%	1.7%	1.8%	0.7%	0.9%	0.1%
Shredded Paper	0.0%	0.0%	4.1%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.3%	0.9%	0.6%	1.3%	0.5%	0.2%
Aseptic Containers/ Cartons	0.3%	0.5%	0.9%	0.8%	0.4%	1.5%
PET Bottles (#1)	6.5%	6.3%	7.3%	7.9%	2.7%	9.3%
Natural HDPE Bottles (#2)	0.5%	1.6%	1.1%	1.0%	0.3%	2.3%
Colored HDPE Bottles (#2)	1.4%	1.4%	1.5%	1.9%	0.6%	1.4%
Non-Bottle PET Containers (#1)	1.0%	1.3%	1.3%	1.2%	0.6%	1.9%
Non-Bottle HDPE Containers (#2)	0.4%	0.3%	1.1%	0.0%	0.0%	0.2%
PP Containers (#5)	0.8%	0.4%	1.2%	1.1%	0.2%	1.3%
Other Plastic Containers (#3,4,6,7)	0.0%	0.2%	0.3%	0.1%	0.0%	0.4%
Bulky Rigid Plastics	2.7%	0.9%	0.0%	1.8%	0.0%	0.0%
EPS Foam	0.2%	0.5%	0.1%	0.2%	0.3%	0.0%
Non-Rigid Plastic Film	0.4%	2.5%	0.9%	1.2%	1.2%	0.9%
Tin/Steel Cans	1.4%	1.7%	1.2%	1.2%	1.7%	1.6%
Ferrous Scrap Metal	1.0%	1.1%	6.8%	1.9%	1.0%	0.0%
Aluminum Cans	3.1%	2.4%	2.0%	3.1%	1.4%	1.6%
Aluminum Foil and Trays	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Glass Containers	23.3%	16.2%	20.7%	20.3%	7.4%	29.9%
Bagged Waste	1.8%	0.0%	0.2%	0.0%	9.5%	1.5%
Bagged Recyclables	1.6%	0.3%	0.8%	0.0%	0.0%	0.8%
Tanglers	0.0%	0.6%	0.0%	0.0%	0.9%	0.0%
Small Appliances	0.0%	0.0%	0.6%	0.0%	4.1%	0.0%
Hazardous/Special Waste	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.1%	0.0%	0.0%	16.6%	0.0%
Full Containers	0.8%	0.2%	0.0%	3.6%	0.0%	0.5%
Other Contaminants	14.1%	11.9%	9.8%	6.6%	20.2%	3.3%
Grit	5.6%	1.8%	1.4%	3.0%	4.2%	0.1%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	3.61	5.10	3.52	3.25	4.33	0.30

Note: Columns may appear to not sum correctly due to rounding.

Table B-6: Individual Clearwater Sample Results (% by Weight) (continued)

Load Description	Clearwater: Multi-family - Mon 10/12, Truck #G-4455	Clearwater: Multi-family - Wed 10/14, Truck #G4169	Clearwater: Multi-family - Mon 10/19, Truck #3696	Clearwater: Multi-family - Wed 10/21, Truck #G4455	Clearwater: Commercial - Tue 10/13, Route #302, Truck #G4324	Clearwater: Commercial - Thu 10/15, Route #305, Truck #G4324	Clearwater: Commercial - Tue 10/20, Route #302, Truck #G4324	Clearwater: Commercial - Fri 10/23, Route #305, Truck #4324
Material Categories sample #	**4**	**26**	**65**	**89**	**14**	**50**	**79**	**111**
Newspaper	6.9%	6.6%	5.6%	9.7%	2.0%	0.1%	1.4%	4.3%
Corrugated Cardboard	9.0%	3.3%	9.6%	17.2%	33.9%	9.4%	38.6%	52.8%
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	0.0%	11.6%	2.5%	0.0%	0.0%
Magazines and Catalogs	3.5%	6.6%	6.9%	1.9%	5.0%	0.0%	3.2%	2.4%
Mixed Recyclable Paper	15.0%	40.9%	10.0%	15.0%	8.8%	10.2%	9.5%	14.8%
Wet Paper	0.4%	0.0%	0.5%	0.7%	5.2%	2.9%	1.6%	2.6%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%
Film-Wrapped Paper	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aseptic Containers/ Cartons	0.2%	0.3%	0.6%	1.2%	0.3%	0.1%	0.4%	0.0%
PET Bottles (#1)	3.9%	6.2%	4.4%	10.5%	3.3%	1.9%	4.1%	2.9%
Natural HDPE Bottles (#2)	0.4%	1.4%	0.7%	3.3%	0.8%	0.4%	0.9%	0.6%
Colored HDPE Bottles (#2)	0.7%	3.9%	1.1%	1.7%	0.6%	0.6%	1.2%	1.0%
Non-Bottle PET Containers (#1)	0.6%	0.5%	0.9%	1.8%	0.4%	0.2%	0.8%	0.5%
Non-Bottle HDPE Containers (#2)	0.1%	0.0%	0.2%	0.7%	0.2%	0.0%	0.2%	0.0%
PP Containers (#5)	0.8%	0.9%	0.5%	0.9%	0.3%	0.2%	0.9%	0.2%
Other Plastic Containers (#3,4,6,7)	0.3%	0.1%	0.1%	0.7%	0.1%	0.0%	0.0%	0.0%
Bulky Rigid Plastics	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	7.2%
EPS Foam	0.0%	0.1%	0.1%	0.1%	0.2%	0.0%	0.6%	0.1%
Non-Rigid Plastic Film	1.3%	0.7%	0.6%	1.3%	0.6%	0.1%	0.6%	0.6%
Tin/Steel Cans	0.9%	0.6%	1.1%	1.6%	0.7%	0.5%	1.9%	0.9%
Ferrous Scrap Metal	1.4%	0.0%	0.0%	0.9%	0.0%	1.2%	0.0%	0.0%
Aluminum Cans	1.5%	0.6%	2.0%	1.9%	0.7%	0.7%	1.5%	0.0%
Aluminum Foil and Trays	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%
Non-Ferrous Scrap Metal	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	40.3%	7.0%	32.8%	14.7%	6.9%	52.5%	17.6%	8.1%
Bagged Waste	0.0%	11.6%	8.4%	2.5%	11.0%	0.0%	2.8%	0.0%
Bagged Recyclables	0.0%	1.3%	4.9%	3.6%	1.4%	0.3%	4.7%	0.0%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.9%	1.2%	0.0%	0.3%	0.0%	0.7%	0.2%	0.0%
Other Contaminants	10.6%	4.6%	7.5%	5.8%	4.4%	5.7%	3.6%	0.6%
Grit	0.7%	1.0%	1.4%	2.2%	1.5%	6.2%	2.4%	0.2%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	2.08	0.80	1.22	2.48	4.94	4.99	2.93	4.10

Note: Columns may appear to not sum correctly due to rounding.

Largo

Background

Population	84,996
Hauler	Self
Recycler	Waste Connections
Collection days	Single family – Mon, Tue, Thu, Fri Commercial – Tue, Fri
Single stream recycling tonnage (2019 reported)	Single family – 4,008 Drop-off – 630 Multi-family – n/a Commercial – 1,431 **Total – 6,069**

Sampling Schedule

Sector	Mon 10/12	Tue 10/13	Thu 10/15	Fri 10/16	Mon 10/19	Tue 10/20	Thu 10/22	Fri 10/23	Tue 10/27	Fri 10/30	Total
Single family	1	3	4	3	3		1	1			**16**
Drop-off	2										**2**
Commercial		1		1		1		1	1	1	**6**
Total	**3**	**4**	**4**	**4**	**3**	**1**	**1**	**2**	**1**	**1**	**24**

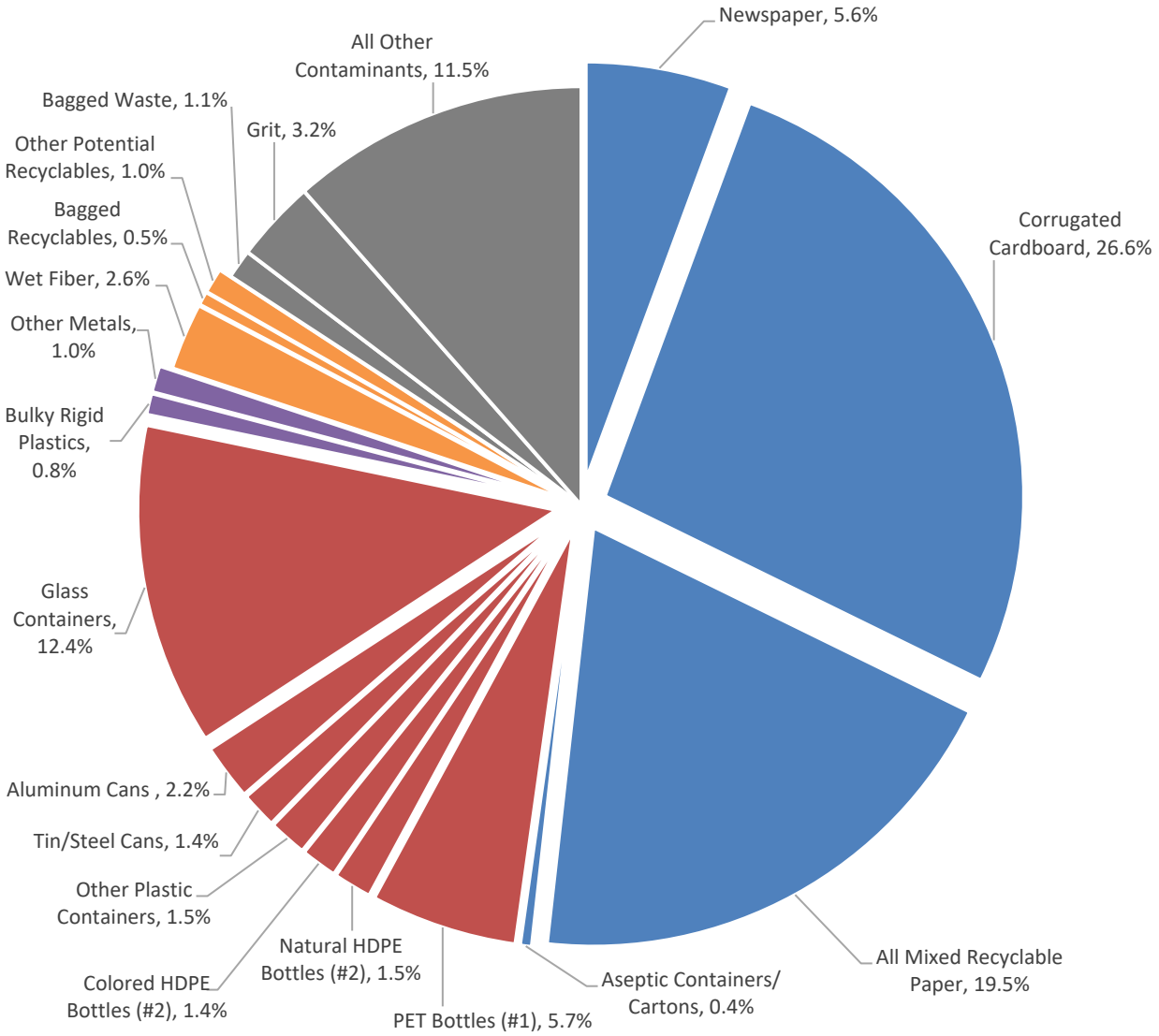
Results

Figure B-3 depicts the weighted average composition of single stream recyclables from Largo. Table B-7 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS, along with the composition of each generator sector. Results for individual samples from Largo are included in Table B-8.

Key findings from Largo results include:

- Approximately 80 percent of the recyclables stream were acceptable material. Total recyclable paper had a much higher percentage than the municipal average at over half of the stream, especially corrugated cardboard, which had a higher percentage than any other municipality at 25 percent of the stream, except for Gulfport. Likewise, glass containers had a lower percentage than any other municipality, except Gulfport.
- Nearly 20 percent of the stream was unacceptable material, similar to the municipal average. However, bagged recyclables, bagged waste, and grit were lower than the average. The small appliances percentage was higher than average due primarily to a large VCR and DVD player in one sample.
- Drop-off recyclables had a lower percentage of unacceptable material than single family, while commercial had the lowest.
- A total of 18 bags of recyclables and 25 tanglers were found in all 24 samples.

Figure B-3: Composition of Largo Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-7: Composition of Largo Single Stream Recyclables (% by Weight)

Material Category	Single Family	Drop-off	Commercial	Weighted Average	90% Confidence Interval	
					Lower Bounds	Upper Bounds
Newspaper	4.2%	21.5%	7.7%	5.6%	3.3%	7.9%
Corrugated Cardboard	24.4%	9.7%	32.4%	26.6%	22.6%	30.7%
Magazines and Catalogs	3.1%	2.1%	3.6%	3.2%	2.5%	4.0%
Mixed Recyclable Paper	14.9%	21.7%	18.7%	16.3%	14.8%	17.8%
Aseptic Containers/Cartons	0.4%	0.6%	0.5%	0.4%	0.4%	0.5%
Recyclable Paper	**47.0%**	**55.6%**	**62.9%**	**52.2%**	**48.5%**	**55.9%**
PET Bottles (#1)	6.1%	4.8%	4.8%	5.7%	5.1%	6.2%
Natural HDPE Bottles (#2)	1.6%	1.3%	1.3%	1.5%	1.2%	1.7%
Colored HDPE Bottles (#2)	1.5%	0.6%	1.2%	1.4%	1.1%	1.7%
Non-Bottle PET Containers (#1)	0.5%	0.8%	0.6%	0.5%	0.4%	0.6%
Non-Bottle HDPE Containers (#2)	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%
PP Containers (#5)	0.6%	0.7%	0.5%	0.6%	0.5%	0.7%
Other Plastic Containers (#3,4,6,7)	0.2%	0.2%	0.1%	0.2%	0.1%	0.3%
Tin/Steel Cans	1.3%	1.8%	1.5%	1.4%	1.2%	1.6%
Aluminum Cans	2.5%	1.8%	1.5%	2.2%	1.9%	2.4%
Glass Containers	13.3%	17.0%	10.4%	12.4%	10.3%	14.5%
Recyclable Containers	**27.9%**	**29.1%**	**22.0%**	**26.0%**	**23.6%**	**28.5%**
Bulky Rigid Plastics	0.7%	0.0%	1.2%	0.8%	0.5%	1.2%
Ferrous Scrap Metal	1.1%	0.4%	0.4%	0.9%	0.5%	1.3%
Aluminum Foil and Trays	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%
Non-Ferrous Scrap Metal	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
Other Recyclables	**2.0%**	**0.5%**	**1.7%**	**1.9%**	**1.3%**	**2.4%**
Wet Corrugated Cardboard	0.5%	0.1%	0.4%	0.5%	0.2%	0.7%
Wet Paper	1.6%	0.9%	3.4%	2.1%	1.2%	3.0%
Shredded Paper	0.2%	0.0%	0.0%	0.1%	0.0%	0.3%
Film-Wrapped Paper	0.5%	0.0%	0.4%	0.4%	0.3%	0.6%
Bagged Recyclables	0.7%	0.0%	0.2%	0.5%	-0.1%	1.2%
Full Containers	0.5%	0.0%	0.1%	0.4%	0.2%	0.6%
Potential Recyclables	**4.0%**	**1.0%**	**4.5%**	**4.1%**	**2.9%**	**5.3%**
EPS Foam	0.3%	0.0%	0.5%	0.3%	0.2%	0.4%
Non-Rigid Plastic Film	1.0%	0.2%	0.8%	0.9%	0.7%	1.1%
Bagged Waste	1.2%	0.0%	0.9%	1.1%	0.6%	1.7%
Tanglers	0.7%	0.0%	0.1%	0.5%	0.0%	0.9%
Small Appliances	1.8%	0.0%	0.1%	1.2%	0.3%	2.1%
Hazardous/Special Waste	0.1%	0.0%	0.0%	0.1%	0.0%	0.2%
Non-Alkaline Batteries	0.6%	0.0%	0.0%	0.4%	-0.2%	0.9%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Contaminants	9.6%	13.0%	4.8%	8.1%	6.1%	10.1%
Grit	3.9%	0.5%	1.8%	3.2%	2.2%	4.1%
Contaminants	**19.1%**	**13.8%**	**8.9%**	**15.8%**	**13.2%**	**18.4%**
Total Acceptable Material	**76.9%**	**85.2%**	**86.6%**	**80.1%**		
Total Unacceptable Material	**23.1%**	**14.8%**	**13.4%**	**19.9%**		
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-8: Individual Largo Sample Results (% by Weight)

Load Description	Largo: SF Resi – Mon 10/12, Route #R1, Truck #108-60-38-16	Largo: SF Resi – Tue 10/13, Route #R3, Truck #108-60-38-18	Largo: SF Resi – Tue 10/13, Route #R2, Truck #108-60-38-17	Largo: SF Resi – Tue 10/13, Route #R1, Truck #108-60-38-16	Largo: SF Resi – Thu 10/15, Route #R3, Truck #108-60-38-18	Largo: SF Resi – Thu 10/15, Route #R4, Truck #108-60-36-60	Largo: SF Resi – Thu 10/15, Route #R2, Truck #108-60-38-17	Largo: SF Resi – Thu 10/15, Route #R1, Truck #108-60-38-16
Material Categories sample #	**13**	**22**	**23**	**25**	**39**	**40**	**46**	**47**
Newspaper	6.1%	3.0%	6.0%	3.2%	8.1%	3.9%	1.7%	4.3%
Corrugated Cardboard	26.7%	23.4%	19.7%	23.6%	23.6%	19.9%	18.5%	19.0%
Wet Corrugated Cardboard	0.2%	0.0%	0.0%	1.3%	0.0%	0.0%	0.7%	0.0%
Magazines and Catalogs	2.0%	0.5%	4.6%	1.8%	1.5%	3.7%	1.0%	8.9%
Mixed Recyclable Paper	19.0%	15.8%	13.4%	11.3%	18.0%	11.1%	15.2%	24.3%
Wet Paper	2.0%	3.5%	3.9%	3.6%	1.3%	0.7%	0.3%	0.0%
Shredded Paper	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.6%	0.0%
Film-Wrapped Paper	0.4%	0.0%	0.3%	0.0%	0.0%	0.0%	0.9%	0.6%
Aseptic Containers/ Cartons	0.4%	0.7%	0.1%	0.6%	0.6%	0.7%	0.6%	0.3%
PET Bottles (#1)	6.4%	6.0%	8.2%	6.7%	5.7%	9.8%	5.0%	3.9%
Natural HDPE Bottles (#2)	1.4%	1.7%	1.6%	1.2%	1.2%	3.0%	1.4%	1.1%
Colored HDPE Bottles (#2)	1.3%	1.5%	3.0%	2.8%	2.4%	2.0%	0.9%	0.4%
Non-Bottle PET Containers (#1)	0.9%	0.0%	0.3%	0.1%	0.5%	0.2%	0.0%	0.8%
Non-Bottle HDPE Containers (#2)	0.2%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%
PP Containers (#5)	0.5%	0.8%	0.9%	1.5%	1.1%	0.8%	0.5%	0.6%
Other Plastic Containers (#3,4,6,7)	0.2%	0.2%	0.1%	0.4%	0.7%	0.2%	0.9%	0.4%
Bulky Rigid Plastics	0.6%	1.6%	0.0%	0.0%	0.0%	2.8%	0.3%	0.4%
EPS Foam	0.5%	0.2%	0.2%	0.2%	0.1%	0.1%	0.5%	0.3%
Non-Rigid Plastic Film	0.8%	1.8%	1.0%	0.9%	2.0%	0.6%	2.0%	1.3%
Tin/Steel Cans	1.1%	1.2%	1.7%	1.2%	0.8%	1.2%	2.1%	1.3%
Ferrous Scrap Metal	0.2%	0.3%	0.3%	2.2%	1.6%	0.3%	1.2%	0.6%
Aluminum Cans	2.2%	2.4%	3.7%	3.6%	2.1%	2.3%	3.0%	1.2%
Aluminum Foil and Trays	0.1%	0.0%	0.6%	0.1%	0.1%	0.1%	0.1%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	14.5%	14.4%	16.6%	19.4%	9.4%	14.2%	15.6%	6.3%
Bagged Waste	0.2%	0.0%	0.0%	0.0%	1.8%	1.1%	3.3%	0.0%
Bagged Recyclables	1.4%	0.0%	0.3%	0.0%	8.6%	0.2%	0.6%	0.4%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Small Appliances	0.0%	0.0%	0.0%	2.2%	1.2%	0.0%	3.3%	12.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%
Full Containers	0.0%	0.3%	1.0%	1.0%	0.7%	2.3%	0.0%	0.8%
Other Contaminants	5.9%	17.6%	7.5%	7.3%	4.7%	13.9%	15.8%	9.0%
Grit	4.8%	3.1%	3.1%	3.8%	1.9%	4.8%	3.9%	1.7%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	5.14	3.98	3.97	4.70	2.71	2.93	4.49	6.50

Note: Columns may appear to not sum correctly due to rounding.

Table B-8: Individual Largo Sample Results (% by Weight) (continued)

Load Description	Largo: SF Resi – Fri 10/16, Route #R2, Truck #108-60-38-17	Largo: SF Resi – Fri 10/16, Route #R3, Truck #108-60-38-18	Largo: SF Resi – Fri 10/16, Route #R1, Truck #108-60-38-16	Largo: SF Resi – Mon 10/19, Route #R2, Truck #108-60-38-17	Largo: SF Resi – Mon 10/19, Route #R1, Truck #108-60-38-18	Largo: SF Resi – Mon 10/19, Route #R3, Truck #108-60-36-60	Largo: SF Resi – Thu 10/22, Route #R4, Truck #108-60-36-60	Largo: SF Resi - Fri 10/23, Route #R3, Truck #108-60-38-18
Material Categories sample #	**59**	**60**	**62**	**67**	**73**	**75**	**101**	**120**
Newspaper	4.2%	6.1%	2.3%	2.2%	1.1%	3.8%	3.5%	7.8%
Corrugated Cardboard	21.4%	22.7%	23.1%	44.4%	45.0%	37.2%	20.5%	4.5%
Wet Corrugated Cardboard	3.8%	0.1%	0.0%	0.0%	0.0%	0.3%	0.8%	0.0%
Magazines and Catalogs	2.9%	2.4%	6.4%	0.0%	0.4%	3.0%	5.2%	2.7%
Mixed Recyclable Paper	11.0%	16.8%	10.2%	12.5%	13.3%	10.8%	13.2%	17.5%
Wet Paper	5.4%	2.0%	0.2%	0.6%	0.0%	0.2%	1.0%	0.0%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.0%	0.0%
Film-Wrapped Paper	1.1%	0.6%	0.2%	0.2%	1.4%	0.7%	1.0%	0.0%
Aseptic Containers/ Cartons	0.1%	0.3%	0.3%	0.4%	0.6%	0.5%	0.5%	0.5%
PET Bottles (#1)	6.6%	6.7%	4.8%	6.2%	6.1%	5.3%	9.4%	3.9%
Natural HDPE Bottles (#2)	0.4%	1.2%	0.9%	3.9%	2.6%	1.9%	2.1%	1.3%
Colored HDPE Bottles (#2)	0.8%	2.1%	0.5%	1.3%	2.7%	1.4%	2.4%	0.3%
Non-Bottle PET Containers (#1)	0.1%	0.9%	0.3%	0.7%	0.8%	0.9%	0.6%	0.8%
Non-Bottle HDPE Containers (#2)	0.4%	0.4%	0.1%	0.2%	0.0%	0.4%	0.9%	0.0%
PP Containers (#5)	0.5%	0.4%	0.5%	0.6%	0.2%	0.7%	1.0%	0.3%
Other Plastic Containers (#3,4,6,7)	0.2%	0.0%	0.0%	0.1%	0.1%	0.0%	0.3%	0.2%
Bulky Rigid Plastics	0.9%	2.4%	1.2%	0.0%	0.0%	0.0%	0.0%	1.0%
EPS Foam	0.1%	0.1%	0.1%	0.7%	0.5%	0.1%	0.6%	0.2%
Non-Rigid Plastic Film	1.1%	0.5%	0.8%	1.2%	0.1%	0.8%	0.7%	0.4%
Tin/Steel Cans	2.2%	1.0%	0.9%	0.8%	1.3%	1.4%	1.0%	1.5%
Ferrous Scrap Metal	0.0%	1.9%	3.2%	0.4%	0.3%	1.7%	0.5%	3.8%
Aluminum Cans	2.3%	4.0%	2.0%	2.9%	1.9%	2.6%	2.8%	1.8%
Aluminum Foil and Trays	0.0%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Glass Containers	11.9%	12.6%	14.2%	6.2%	10.8%	3.5%	13.1%	31.1%
Bagged Waste	0.6%	4.5%	0.8%	3.5%	0.0%	4.9%	0.5%	0.2%
Bagged Recyclables	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%
Tanglers	0.9%	0.0%	0.0%	0.2%	3.0%	5.1%	1.2%	0.1%
Small Appliances	0.0%	1.2%	1.5%	0.0%	0.0%	0.0%	0.2%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.1%	2.1%
Other Contaminants	6.4%	3.9%	18.7%	10.3%	5.4%	9.4%	14.7%	5.5%
Grit	7.0%	4.7%	5.9%	0.5%	0.9%	1.4%	1.2%	12.2%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	5.14	4.40	4.45	3.20	4.38	4.12	2.95	3.94

Note: Columns may appear to not sum correctly due to rounding.

Table B-8: Individual Largo Sample Results (% by Weight) (continued)

Load Description	Largo: Drop-off (small openings) - Mon 10/12, Truck #108-60-34-13	Largo: Drop-off (big openings) - Mon 10/12, Truck #108-60-34-18	Largo: Commercial – Tue 10/13, Route #2401, Truck #108-60-33-46	Largo: Commercial – Fri 10/16, Route #5401, Truck #108-60-33-46	Largo: Commercial – Tue 10/20, Route #2401, Truck #108-60-33-49	Largo: Commercial – Fri 10/23, Route #5401, Truck #108-60-33-46	Largo: Commercial – Tue 10/27, Route #2401, Truck #108-60-33-49	Largo: Commercial – Fri 10/30, Route #5401, Truck #108-60-38-14
Material Categories sample #	**2**	**3**	**15**	**61**	**81**	**121**	**135**	**151**
Newspaper	33.4%	9.2%	4.5%	6.3%	11.2%	2.4%	11.3%	12.0%
Corrugated Cardboard	5.9%	13.7%	32.2%	35.7%	25.6%	50.1%	34.8%	13.6%
Wet Corrugated Cardboard	0.0%	0.2%	1.1%	0.1%	0.0%	0.0%	0.0%	0.9%
Magazines and Catalogs	2.2%	2.0%	2.7%	3.3%	3.1%	1.9%	4.9%	5.5%
Mixed Recyclable Paper	20.6%	22.8%	21.4%	18.0%	22.5%	14.0%	18.0%	19.5%
Wet Paper	0.0%	1.9%	10.6%	0.6%	1.3%	1.1%	0.0%	6.6%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.0%	0.3%	0.5%	0.6%	0.0%	0.7%	0.4%
Aseptic Containers/ Cartons	0.3%	0.8%	0.5%	0.3%	0.7%	0.5%	0.6%	0.4%
PET Bottles (#1)	5.7%	4.0%	3.1%	4.8%	5.0%	4.3%	4.7%	6.8%
Natural HDPE Bottles (#2)	1.4%	1.1%	0.9%	0.9%	1.8%	1.7%	1.3%	1.3%
Colored HDPE Bottles (#2)	0.6%	0.7%	0.9%	0.5%	0.8%	1.6%	1.9%	1.6%
Non-Bottle PET Containers (#1)	0.4%	1.2%	0.4%	0.7%	0.4%	0.6%	0.5%	0.9%
Non-Bottle HDPE Containers (#2)	0.2%	0.2%	0.1%	0.2%	0.3%	0.2%	0.0%	0.1%
PP Containers (#5)	0.8%	0.6%	0.3%	0.5%	0.3%	0.3%	0.4%	1.0%
Other Plastic Containers (#3,4,6,7)	0.0%	0.3%	0.0%	0.2%	0.3%	0.0%	0.0%	0.2%
Bulky Rigid Plastics	0.0%	0.0%	2.7%	1.6%	0.0%	0.9%	1.7%	0.0%
EPS Foam	0.0%	0.1%	1.4%	0.1%	0.1%	0.5%	0.4%	0.1%
Non-Rigid Plastic Film	0.3%	0.2%	0.8%	1.7%	0.6%	0.9%	0.6%	0.3%
Tin/Steel Cans	1.7%	1.8%	1.1%	1.8%	1.1%	2.0%	1.0%	2.1%
Ferrous Scrap Metal	0.0%	0.9%	1.0%	0.5%	0.2%	0.0%	0.7%	0.0%
Aluminum Cans	1.4%	2.1%	1.1%	1.7%	1.9%	1.2%	0.9%	2.0%
Aluminum Foil and Trays	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%
Glass Containers	21.8%	12.0%	10.0%	7.8%	12.2%	3.5%	12.0%	18.0%
Bagged Waste	0.0%	0.0%	0.0%	0.0%	1.2%	4.0%	0.0%	0.4%
Bagged Recyclables	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.3%
Other Contaminants	2.8%	23.6%	2.5%	6.9%	6.3%	6.2%	2.5%	4.1%
Grit	0.3%	0.7%	0.5%	3.7%	2.2%	1.9%	1.0%	1.1%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	0.98	0.94	5.30	5.94	4.59	5.69	5.06	5.32

Note: Columns may appear to not sum correctly due to rounding.

Dunedin

Background

Population	36,545
Hauler	Waste Pro
Recycler	Waste Pro
Collection days	Mon-Fri
Single stream recycling tonnage (2019 reported)	Single family – 3,038 Drop-off - 382 Multi-family – n/a Commercial – n/a **Total – 3,420**

Sampling Schedule

Sector	Mon 10/12	Mon 10/19	Tue 10/20	Thu 10/22	Fri 10/23	Total
Single Family		1	3	1	2	7
Drop-off	1					1
Total	**1**	**1**	**3**	**1**	**2**	**8**

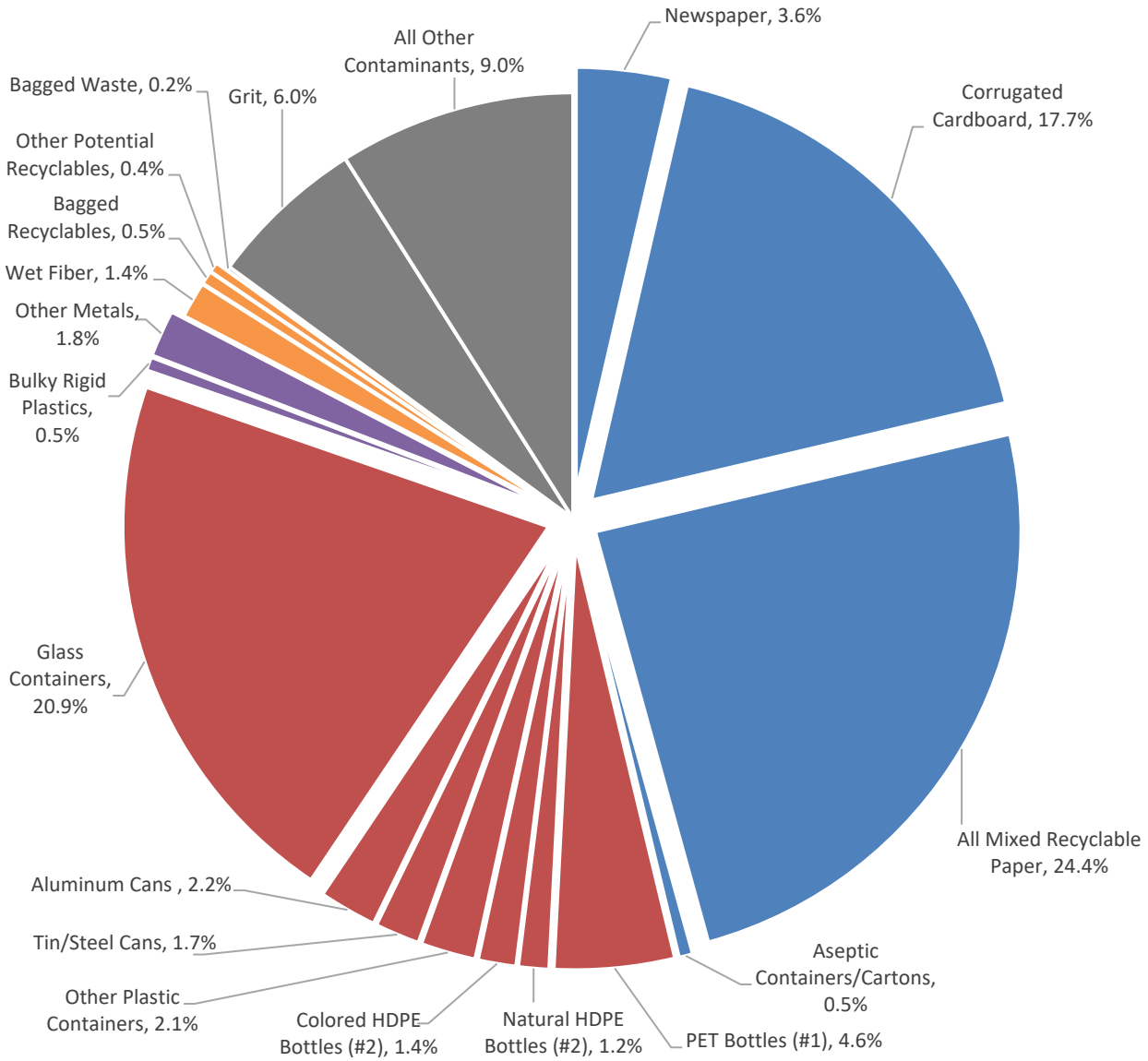
Results

Figure B-4 depicts the weighted average composition of single stream recyclables from Dunedin. Table B-9 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS, along with the composition for each generator sector. Note: Because only eight samples were pulled, the confidence interval is for information purposes only and should not be considered statistically valid. Results for individual samples from Dunedin are included in Table B-10.

Key findings from Dunedin results include:

- Approximately 83 percent of the stream was acceptable material. Corrugated cardboard was slightly lower than the municipal average and mixed recyclable paper was slightly higher.
- Just over 17 percent of the stream was unacceptable material. Bagged recyclables and bagged waste were lower than the municipal average. While grit and other contaminants were slightly higher.
- The sample from Lake Haven drop-off had a much lower percentage of unacceptable material (6.7 percent) than the residential samples (17.7 percent).
- A total of 7 bags of recyclables and 4 tanglers were found in all 8 samples.

Figure B-4: Composition of Dunedin Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-9: Composition of Dunedin Single Stream Recyclables (% by Weight)

Material Category	Single Family	Drop-off	Weighted Average	90% Confidence Interval	
				Lower Bounds	Upper Bounds
Newspaper	3.5%	6.7%	3.6%	2.2%	5.0%
Corrugated Cardboard	17.4%	27.6%	17.7%	13.2%	22.2%
Magazines and Catalogs	7.0%	1.9%	6.9%	3.9%	9.9%
Mixed Recyclable Paper	17.6%	13.8%	17.5%	15.1%	19.8%
Aseptic Containers/Cartons	0.5%	0.7%	0.5%	0.4%	0.6%
Recyclable Paper	**46.1%**	**50.7%**	**46.2%**	**40.5%**	**52.0%**
PET Bottles (#1)	4.6%	4.2%	4.6%	4.0%	5.2%
Natural HDPE Bottles (#2)	1.2%	1.5%	1.2%	1.0%	1.3%
Colored HDPE Bottles (#2)	1.5%	1.1%	1.4%	1.1%	1.8%
Non-Bottle PET Containers (#1)	1.0%	1.6%	1.0%	0.7%	1.3%
Non-Bottle HDPE Containers (#2)	0.3%	0.0%	0.3%	0.1%	0.5%
PP Containers (#5)	0.7%	0.7%	0.7%	0.6%	0.8%
Other Plastic Containers (#3,4,6,7)	0.1%	0.2%	0.1%	0.1%	0.2%
Tin/Steel Cans	1.7%	3.7%	1.7%	1.1%	2.3%
Aluminum Cans	2.2%	1.1%	2.2%	1.5%	2.9%
Glass Containers	20.7%	28.2%	20.9%	15.2%	26.5%
Recyclable Containers	**33.8%**	**42.2%**	**34.1%**	**28.0%**	**40.1%**
Bulky Rigid Plastics	0.5%	0.3%	0.5%	0.3%	0.8%
Ferrous Scrap Metal	1.5%	0.0%	1.5%	0.3%	2.6%
Aluminum Foil and Trays	0.3%	0.0%	0.3%	-0.1%	0.6%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.1%
Other Recyclables	**2.4%**	**0.3%**	**2.3%**	**0.8%**	**3.8%**
Wet Corrugated Cardboard	0.3%	0.0%	0.2%	0.0%	0.5%
Wet Paper	1.2%	0.0%	1.1%	0.5%	1.7%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.3%	0.5%	0.3%	0.1%	0.4%
Bagged Recyclables	0.5%	0.0%	0.5%	0.1%	1.0%
Full Containers	0.1%	1.1%	0.1%	-0.2%	0.4%
Potential Recyclables	**2.3%**	**1.6%**	**2.3%**	**1.7%**	**2.9%**
EPS Foam	0.1%	0.0%	0.1%	0.1%	0.2%
Non-Rigid Plastic Film	0.9%	0.2%	0.9%	0.5%	1.3%
Bagged Waste	0.1%	1.9%	0.2%	-0.3%	0.6%
Tanglers	0.3%	0.0%	0.3%	0.0%	0.6%
Small Appliances	0.1%	0.0%	0.1%	-0.1%	0.2%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%
Other Contaminants	7.7%	2.5%	7.6%	6.0%	9.1%
Grit	6.1%	0.4%	6.0%	4.0%	7.9%
Contaminants	**15.4%**	**5.1%**	**15.1%**	**12.0%**	**18.1%**
Total Acceptable Material	**82.3%**	**93.3%**	**82.6%**		
Total Unacceptable Material	**17.7%**	**6.7%**	**17.4%**		
Total	**100.0%**	**100.0%**	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-10: Individual Dunedin Sample Results (% by Weight)

Load Description	Dunedin: SF Resi – Mon 10/19, Truck #1530	Dunedin: SF Resi – Tue 10/20, Truck #674	Dunedin: SF Resi – Tue 10/20, Truck #1530	Dunedin: SF Resi – Tue 10/20, Truck #1521	Dunedin: SF Resi – Thu 10/22, Truck #1530	Dunedin: SF Resi – Fri 10/23, Truck #674	Dunedin: SF Resi – Fri 10/23, Truck #1521	Dunedin: Drop-off (Lake Haven) - Mon 10/12, Truck #409
Material Categories sample #	**76**	**86**	**87**	**88**	**109**	**124**	**125**	**1**
Newspaper	2.3%	3.3%	3.7%	3.8%	3.4%	7.4%	1.1%	6.7%
Corrugated Cardboard	26.3%	9.8%	15.7%	22.0%	20.3%	14.0%	11.3%	27.6%
Wet Corrugated Cardboard	0.0%	0.8%	0.0%	0.9%	0.1%	0.0%	0.0%	0.0%
Magazines and Catalogs	9.6%	7.0%	3.9%	3.7%	15.4%	2.2%	6.3%	1.9%
Mixed Recyclable Paper	15.5%	13.4%	15.3%	17.1%	20.4%	17.5%	23.9%	13.8%
Wet Paper	0.5%	1.2%	1.2%	1.9%	2.5%	0.0%	0.4%	0.0%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.1%	0.1%	0.3%	0.4%	0.4%	0.7%	0.5%
Aseptic Containers/ Cartons	0.6%	0.4%	0.5%	0.5%	0.6%	0.3%	0.7%	0.7%
PET Bottles (#1)	4.0%	3.5%	4.2%	4.7%	4.1%	5.9%	5.9%	4.2%
Natural HDPE Bottles (#2)	0.9%	0.9%	1.3%	1.5%	1.3%	1.0%	1.0%	1.5%
Colored HDPE Bottles (#2)	0.6%	0.9%	1.4%	2.5%	1.6%	1.2%	1.8%	1.1%
Non-Bottle PET Containers (#1)	0.5%	0.6%	1.1%	1.3%	1.5%	0.3%	1.2%	1.6%
Non-Bottle HDPE Containers (#2)	0.1%	0.4%	0.8%	0.5%	0.1%	0.1%	0.0%	0.0%
PP Containers (#5)	0.3%	0.6%	0.7%	0.8%	0.9%	0.5%	0.8%	0.7%
Other Plastic Containers (#3,4,6,7)	0.3%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%
Bulky Rigid Plastics	0.5%	0.6%	0.8%	0.0%	1.1%	0.3%	0.2%	0.3%
EPS Foam	0.3%	0.2%	0.1%	0.2%	0.1%	0.0%	0.1%	0.0%
Non-Rigid Plastic Film	0.9%	1.5%	0.5%	2.0%	0.5%	0.6%	0.5%	0.2%
Tin/Steel Cans	1.2%	1.6%	1.6%	1.8%	1.4%	1.3%	2.7%	3.7%
Ferrous Scrap Metal	0.9%	1.2%	5.0%	0.1%	2.2%	0.3%	0.0%	0.0%
Aluminum Cans	3.4%	2.4%	2.7%	2.3%	0.0%	2.2%	3.0%	1.1%
Aluminum Foil and Trays	0.0%	0.1%	0.1%	0.0%	1.5%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	15.2%	33.4%	26.1%	16.8%	7.3%	24.4%	26.0%	28.2%
Bagged Waste	0.3%	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%	1.9%
Bagged Recyclables	1.8%	0.0%	0.0%	0.0%	0.5%	0.5%	1.0%	0.0%
Tanglers	0.1%	0.0%	1.4%	0.0%	0.0%	0.6%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	1.1%
Other Contaminants	8.6%	6.9%	5.4%	9.6%	8.1%	8.8%	6.6%	2.5%
Grit	5.0%	8.8%	6.2%	4.9%	4.5%	9.7%	4.7%	0.4%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.89	4.14	5.71	5.14	5.62	4.20	4.36	0.92

Note: Columns may appear to not sum correctly due to rounding.

Safety Harbor

Background

Population	17,475
Hauler	Self
Recycler	Waste Management
Collection days	Single family – Thu, Fri Commercial – Mon, Thu
Single stream recycling tonnage (2019 reported)	Single family – 1408 Drop-off – 94 Multi-family –n/a Commercial – 273 **Total – 1,775**

Sampling Schedule

Sector	Mon 10/19	Thu 10/22	Fri 10/23	Total
Single family		2	3	5
Commercial	1			1
Total	**1**	**2**	**3**	**6**

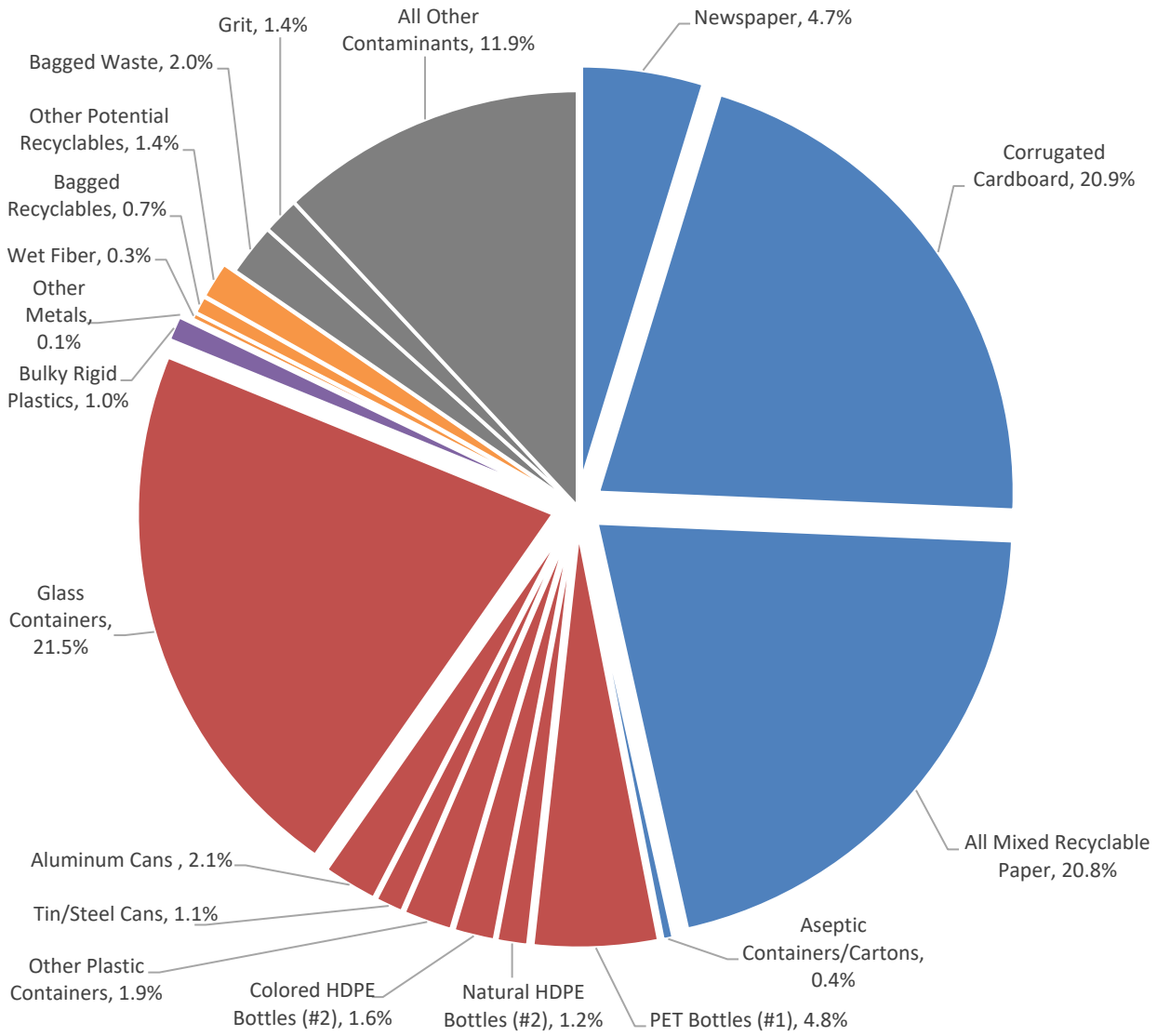
Results

Figure B-5 depicts the weighted average composition of single stream recyclables from Safety Harbor. Table B-11 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS, along with the composition for each generator sector. Note: Because only six samples were pulled, the confidence interval is for information purposes only and should not be considered statistically valid. Results for individual samples from Safety Harbor are included in Table B-12.

Key findings from Safety Harbor results include:

- Approximately 82 percent of the recyclables stream was acceptable material. The composition of these materials was fairly similar to the municipal average.
- Approximately 18 percent of the recyclables was unacceptable material. Other contaminants was higher than the municipal average, while grit was lower. Pavers found in one of the samples contributed to the higher other contaminants.
- The commercial load had much higher corrugated cardboard (nearly half the sample) and much lower mixed recyclable paper and recyclable containers than the single family residential samples. Bagged waste and bagged recyclables was also very high in the commercial sample compared to the single family samples.
- A total of 5 bags of recyclables and 5 tanglers were found in all 6 samples.

Figure B-5: Composition of Safety Harbor Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-11: Composition of Safety Harbor Single Stream Recyclables (% by Weight)

Material Category	Single Family	Commercial	Weighted Average	90% Confidence Interval	
				Lower Bounds	Upper Bounds
Newspaper	5.1%	0.8%	4.7%	2.4%	7.1%
Corrugated Cardboard	18.3%	49.0%	20.9%	9.4%	32.5%
Magazines and Catalogs	5.8%	1.7%	5.4%	3.2%	7.6%
Mixed Recyclable Paper	16.4%	5.4%	15.4%	10.9%	19.9%
Aseptic Containers/Cartons	0.4%	0.0%	0.4%	0.2%	0.6%
Recyclable Paper	**46.0%**	**56.9%**	**46.9%**	**42.0%**	**51.9%**
PET Bottles (#1)	5.2%	1.5%	4.8%	3.5%	6.2%
Natural HDPE Bottles (#2)	1.3%	0.6%	1.2%	0.8%	1.6%
Colored HDPE Bottles (#2)	1.7%	0.3%	1.6%	0.7%	2.5%
Non-Bottle PET Containers (#1)	0.8%	0.0%	0.8%	0.3%	1.2%
Non-Bottle HDPE Containers (#2)	0.3%	0.0%	0.3%	0.0%	0.6%
PP Containers (#5)	0.8%	0.2%	0.7%	0.4%	1.0%
Other Plastic Containers (#3,4,6,7)	0.2%	0.1%	0.2%	0.0%	0.3%
Tin/Steel Cans	1.2%	0.3%	1.1%	0.6%	1.5%
Aluminum Cans	2.3%	0.1%	2.1%	0.9%	3.3%
Glass Containers	22.7%	8.1%	21.5%	15.5%	27.4%
Recyclable Containers	**36.4%**	**11.1%**	**34.2%**	**25.4%**	**43.1%**
Bulky Rigid Plastics	1.1%	0.0%	1.0%	-0.5%	2.4%
Ferrous Scrap Metal	0.1%	0.0%	0.1%	-0.1%	0.2%
Aluminum Foil and Trays	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.1%
Other Recyclables	**1.2%**	**0.0%**	**1.1%**	**-0.4%**	**2.5%**
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	0.0%	0.0%
Wet Paper	0.3%	0.0%	0.3%	0.0%	0.5%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.7%	2.0%	0.9%	0.0%	1.7%
Bagged Recyclables	0.3%	4.2%	0.7%	-0.8%	2.2%
Full Containers	0.6%	0.0%	0.6%	0.1%	1.0%
Potential Recyclables	**2.0%**	**6.2%**	**2.4%**	**0.4%**	**4.3%**
EPS Foam	0.1%	0.0%	0.1%	0.1%	0.2%
Non-Rigid Plastic Film	0.6%	0.9%	0.6%	0.4%	0.7%
Bagged Waste	0.6%	17.5%	2.0%	-3.7%	7.7%
Tanglers	0.4%	0.0%	0.3%	-0.1%	0.8%
Small Appliances	1.0%	0.0%	0.9%	-0.6%	2.3%
Hazardous/Special Waste	0.5%	0.0%	0.5%	-0.8%	1.7%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%
Other Contaminants	9.8%	6.9%	9.5%	5.3%	13.8%
Grit	1.5%	0.5%	1.4%	1.0%	1.9%
Contaminants	**14.4%**	**25.8%**	**15.4%**	**10.5%**	**20.3%**
Total Acceptable Material	**83.6%**	**68.0%**	**82.2%**		
Total Unacceptable Material	**16.4%**	**32.0%**	**17.8%**		
Total	**100.0%**	**100.0%**	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-12: Individual Safety Harbor Sample Results (% by Weight)

Load Description	Safety Harbor: SF Resi - Thu 10/22, Route #3, Truck #120312	Safety Harbor: SF Resi - Thu 10/22, Route #1, Truck #120309	Safety Harbor: SF Resi - Fri 10/23, Route #3, Truck #120312	Safety Harbor: SF Resi - Fri 10/23, Route#2, Truck #120509	Safety Harbor: SF Resi - Fri 10/23, Rear Loader, Truck #120303	Safety Harbor: Commercial - Mon 10/19, Truck #120514
Material Categories sample #	**97**	**100**	**115**	**118**	**119**	**63**
Newspaper	7.4%	3.3%	4.4%	2.4%	8.1%	0.8%
Corrugated Cardboard	14.9%	14.9%	12.2%	23.8%	31.5%	49.0%
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Magazines and Catalogs	6.4%	6.8%	8.2%	3.2%	2.6%	1.7%
Mixed Recyclable Paper	16.3%	21.6%	14.9%	16.5%	11.5%	5.4%
Wet Paper	0.8%	0.0%	0.0%	0.3%	0.2%	0.0%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.4%	0.0%	0.2%	2.4%	1.0%	2.0%
Aseptic Containers/ Cartons	0.2%	0.3%	0.7%	0.7%	0.3%	0.0%
PET Bottles (#1)	5.3%	4.4%	4.6%	5.7%	6.2%	1.5%
Natural HDPE Bottles (#2)	1.6%	1.1%	0.8%	1.9%	0.8%	0.6%
Colored HDPE Bottles (#2)	1.6%	0.7%	1.9%	3.3%	1.0%	0.3%
Non-Bottle PET Containers (#1)	0.9%	0.6%	0.4%	1.4%	1.0%	0.0%
Non-Bottle HDPE Containers (#2)	0.9%	0.0%	0.2%	0.0%	0.4%	0.0%
PP Containers (#5)	1.2%	0.5%	0.5%	1.0%	0.3%	0.2%
Other Plastic Containers (#3,4,6,7)	0.0%	0.1%	0.3%	0.3%	0.2%	0.1%
Bulky Rigid Plastics	0.2%	0.7%	0.0%	4.6%	0.2%	0.0%
EPS Foam	0.1%	0.2%	0.1%	0.1%	0.2%	0.0%
Non-Rigid Plastic Film	0.5%	0.5%	0.5%	0.8%	0.6%	0.9%
Tin/Steel Cans	0.9%	0.8%	1.5%	1.8%	0.7%	0.3%
Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
Aluminum Cans	2.0%	4.5%	2.0%	1.5%	1.3%	0.1%
Aluminum Foil and Trays	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Glass Containers	23.8%	27.2%	26.0%	16.2%	17.9%	8.1%
Bagged Waste	0.8%	0.0%	0.0%	1.6%	0.4%	17.5%
Bagged Recyclables	0.0%	0.0%	0.0%	0.0%	2.4%	4.2%
Tanglers	1.4%	0.0%	0.0%	0.1%	0.0%	0.0%
Small Appliances	0.4%	4.3%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	3.7%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.9%	0.0%	0.4%	1.4%	0.5%	0.0%
Other Contaminants	9.5%	6.2%	18.9%	6.6%	4.8%	6.9%
Grit	1.5%	1.2%	1.3%	2.2%	1.6%	0.5%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	5.18	4.09	4.67	3.72	2.95	1.96

Note: Columns may appear to not sum correctly due to rounding.

Pinellas Park

Background

Population	53,098
Hauler	Waste Management
Recycler	Waste Management
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 1,520 Drop-off – n/a Multi-family – n/a Commercial – n/a **Total – 1,520**

Sampling Schedule

Sector	Wed 10/14	Wed 10/21	Wed 10/28	Total
Single family	1	1	1	**3**

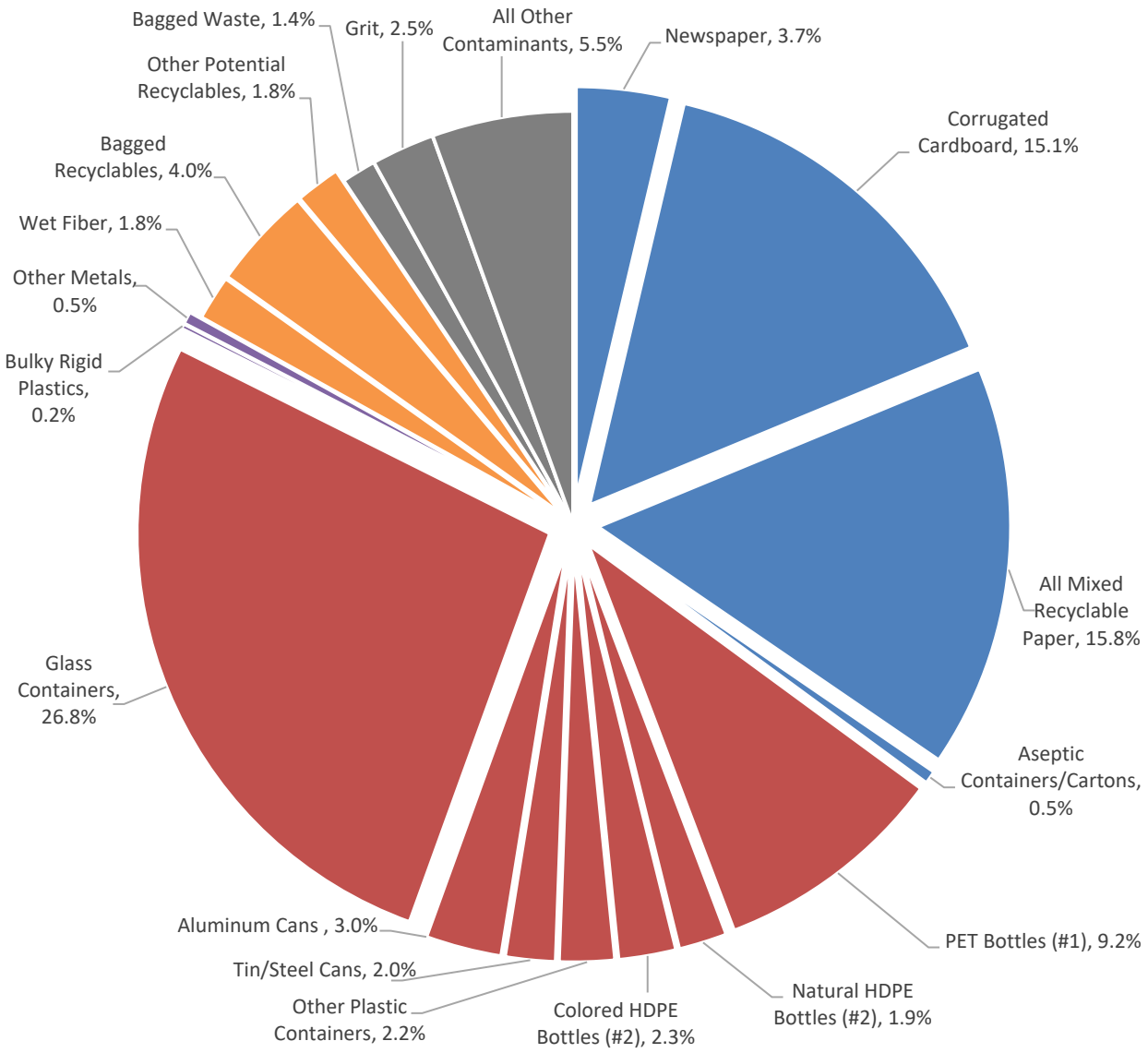
Results

Figure B-6 depicts the weighted average composition of single stream recyclables from Pinellas Park. Table B-13 provides the weighted average for each material category measured in the RCS. Note: Because only three samples were pulled, a confidence interval was not able to be calculated. Results for individual samples from Pinellas Park are included in Table B-14.

Key findings from Pinellas Park results include:

- Approximately 83 percent of the recyclables stream was acceptable material. Corrugated cardboard and mixed recyclable paper had lower percentages than the municipal average. PET bottles and glass containers had higher percentages than average.
- Less than 17 percent of the stream was unacceptable material, which was lower than the municipal average. However, the percentage of bagged recyclables was higher than the average.
- A total of 11 bags of recyclables but no tanglers were found in all 3 samples.

Figure B-6: Composition of Pinellas Park Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-13: Composition of Pinellas Park Single Stream Recyclables (% by Weight)

Material Category	Weighted Average
Newspaper	3.7%
Corrugated Cardboard	15.1%
Magazines and Catalogs	3.1%
Mixed Recyclable Paper	12.7%
Aseptic Containers/Cartons	0.5%
Recyclable Paper	**35.1%**
PET Bottles (#1)	9.2%
Natural HDPE Bottles (#2)	1.9%
Colored HDPE Bottles (#2)	2.3%
Non-Bottle PET Containers (#1)	0.7%
Non-Bottle HDPE Containers (#2)	0.2%
PP Containers (#5)	0.8%
Other Plastic Containers (#3,4,6,7)	0.5%
Tin/Steel Cans	2.0%
Aluminum Cans	3.0%
Glass Containers	26.8%
Recyclable Containers	**47.3%**
Bulky Rigid Plastics	0.2%
Ferrous Scrap Metal	0.1%
Aluminum Foil and Trays	0.2%
Non-Ferrous Scrap Metal	0.2%
Other Recyclables	**0.7%**
Wet Corrugated Cardboard	1.2%
Wet Paper	0.5%
Shredded Paper	0.1%
Film-Wrapped Paper	0.8%
Bagged Recyclables	4.0%
Full Containers	0.9%
Potential Recyclables	**7.6%**
EPS Foam	0.1%
Non-Rigid Plastic Film	1.0%
Bagged Waste	1.4%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	4.4%
Grit	2.5%
Contaminants	**9.4%**
Total Acceptable Material	**83.1%**
Total Unacceptable Material	**16.9%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-14: Individual Pinellas Park Sample Results (% by Weight)

Load Description	Pinellas Park: SF Resi - Wed 10/14, Route #3AV, Truck #313142	Pinellas Park: SF Resi - Wed 10/21, Truck #313525	Pinellas Park: SF Resi - Wed 10/28, Route #3AE, Truck #309926
Material Categories sample #	**31**	**95**	**142**
Newspaper	1.9%	7.0%	2.1%
Corrugated Cardboard	8.8%	13.7%	23.0%
Wet Corrugated Cardboard	0.0%	3.7%	0.0%
Magazines and Catalogs	3.3%	2.8%	3.0%
Mixed Recyclable Paper	12.9%	11.1%	14.2%
Wet Paper	1.4%	0.2%	0.0%
Shredded Paper	0.4%	0.0%	0.0%
Film-Wrapped Paper	1.6%	0.5%	0.2%
Aseptic Containers/ Cartons	0.6%	0.2%	0.8%
PET Bottles (#1)	6.9%	9.6%	11.1%
Natural HDPE Bottles (#2)	0.9%	2.1%	2.7%
Colored HDPE Bottles (#2)	2.0%	3.2%	1.6%
Non-Bottle PET Containers (#1)	0.6%	0.9%	0.8%
Non-Bottle HDPE Containers (#2)	0.2%	0.0%	0.4%
PP Containers (#5)	0.6%	0.9%	0.8%
Other Plastic Containers (#3,4,6,7)	0.1%	1.1%	0.2%
Bulky Rigid Plastics	0.2%	0.4%	0.0%
EPS Foam	0.2%	0.0%	0.1%
Non-Rigid Plastic Film	0.6%	1.2%	1.2%
Tin/Steel Cans	2.4%	1.2%	2.4%
Ferrous Scrap Metal	0.0%	0.4%	0.0%
Aluminum Cans	3.0%	2.5%	3.5%
Aluminum Foil and Trays	0.0%	0.5%	0.1%
Non-Ferrous Scrap Metal	0.3%	0.0%	0.3%
Glass Containers	39.2%	18.4%	22.8%
Bagged Waste	0.0%	4.0%	0.0%
Bagged Recyclables	2.0%	5.8%	4.3%
Tanglers	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%
Yard Waste	0.1%	0.0%	0.0%
Full Containers	1.8%	0.8%	0.0%
Other Contaminants	4.2%	6.2%	2.7%
Grit	4.0%	1.7%	1.8%
TOTALS	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	2.66	2.67	2.53

Note: Columns may appear to not sum correctly due to rounding.

Tarpon Springs

Background

Population	25,571
Hauler	Waste Management
Recycler	Waste Management
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 1,232 Drop-off – 80 Multi-family – n/a Commercial – n/a **Total – 1,312**

Sampling Schedule

Sector	Wed 10/14	Wed 10/21	Wed 10/28	Total
Single family	1	1	1	**3**

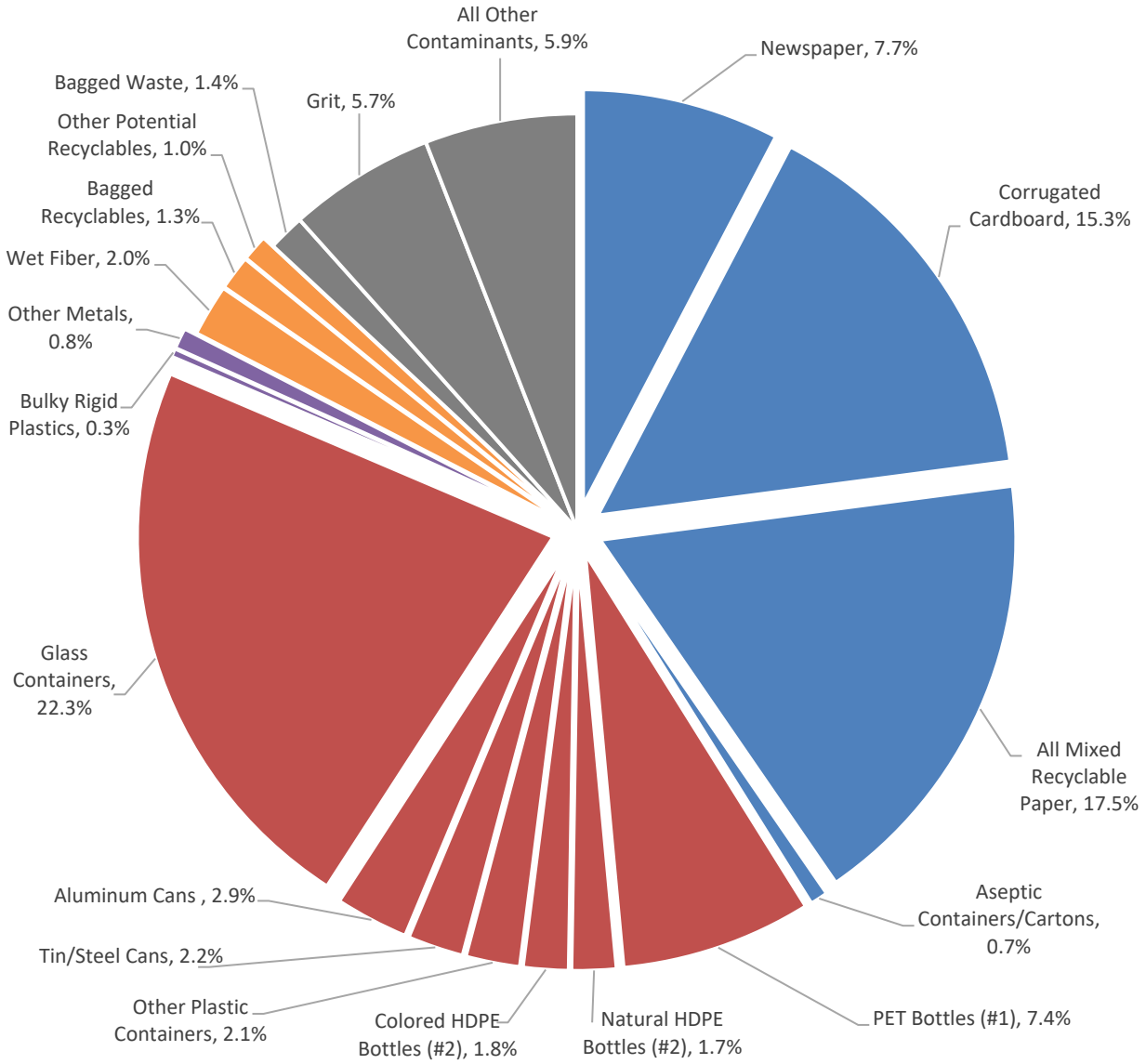
Results

Figure B-7 depicts the weighted average composition of single stream recyclables from Tarpon Springs. Table B-15 provides the weighted average for each material category measured in the RCS. Note: Because only three samples were pulled, a confidence interval was not able to be calculated. Results for individual samples from Tarpon Springs are included in Table B-16.

Key findings from Tarpon Springs results include:

- Approximately 83 percent of the recyclables stream was acceptable material. Corrugated cardboard and mixed recyclable paper were lower than the municipal average, but newspaper, PET bottles, and glass containers were higher than average.
- Approximately 17 percent of the stream was unacceptable material. The percentage of other contaminants was lower than the municipal average, but grit was higher.
- A total of 6 bags of recyclables and 5 tanglers were found in all 3 samples.

Figure B-7: Composition of Tarpon Springs Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-15: Composition of Tarpon Springs Single Stream Recyclables (% by Weight)

Material Category	Weighted Average
Newspaper	7.7%
Corrugated Cardboard	15.3%
Magazines and Catalogs	4.7%
Mixed Recyclable Paper	12.8%
Aseptic Containers/Cartons	0.7%
Recyclable Paper	**41.1%**
PET Bottles (#1)	7.4%
Natural HDPE Bottles (#2)	1.7%
Colored HDPE Bottles (#2)	1.8%
Non-Bottle PET Containers (#1)	1.0%
Non-Bottle HDPE Containers (#2)	0.2%
PP Containers (#5)	0.9%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	2.2%
Aluminum Cans	2.9%
Glass Containers	22.3%
Recyclable Containers	**40.3%**
Bulky Rigid Plastics	0.3%
Ferrous Scrap Metal	0.2%
Aluminum Foil and Trays	0.1%
Non-Ferrous Scrap Metal	0.5%
Other Recyclables	**1.1%**
Wet Corrugated Cardboard	0.1%
Wet Paper	1.9%
Shredded Paper	0.2%
Film-Wrapped Paper	0.4%
Bagged Recyclables	1.3%
Full Containers	0.5%
Potential Recyclables	**4.4%**
EPS Foam	0.1%
Non-Rigid Plastic Film	0.6%
Bagged Waste	1.4%
Tanglers	0.1%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	5.1%
Grit	5.7%
Contaminants	**13.1%**
Total Acceptable Material	**82.6%**
Total Unacceptable Material	**17.4%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-16: Individual Tarpon Springs Sample Results (% by Weight)

Load Description	Tarpon Springs: SF Resi - Thu 10/15, Truck #309929	Tarpon Springs: SF Resi - Thu 10/22, Truck #313159	Tarpon Springs: SF Resi - Thu 10/29, Truck #309929
Material Categories sample #	**49**	**106**	**149**
Newspaper	11.0%	6.4%	4.8%
Corrugated Cardboard	25.5%	12.7%	5.7%
Wet Corrugated Cardboard	0.0%	0.0%	0.2%
Magazines and Catalogs	5.3%	5.8%	3.4%
Mixed Recyclable Paper	15.2%	10.7%	11.5%
Wet Paper	0.5%	7.0%	0.6%
Shredded Paper	0.4%	0.0%	0.0%
Film-Wrapped Paper	0.5%	0.4%	0.3%
Aseptic Containers/ Cartons	0.9%	0.7%	0.4%
PET Bottles (#1)	6.8%	6.6%	8.5%
Natural HDPE Bottles (#2)	1.5%	1.6%	2.1%
Colored HDPE Bottles (#2)	2.0%	1.3%	1.7%
Non-Bottle PET Containers (#1)	0.7%	0.8%	1.4%
Non-Bottle HDPE Containers (#2)	0.1%	0.2%	0.3%
PP Containers (#5)	1.1%	0.5%	0.8%
Other Plastic Containers (#3,4,6,7)	0.0%	0.1%	0.1%
Bulky Rigid Plastics	0.8%	0.0%	0.0%
EPS Foam	0.1%	0.1%	0.1%
Non-Rigid Plastic Film	0.6%	0.6%	0.6%
Tin/Steel Cans	1.8%	2.9%	2.1%
Ferrous Scrap Metal	0.2%	0.0%	0.2%
Aluminum Cans	2.8%	2.1%	3.3%
Aluminum Foil and Trays	0.2%	0.1%	0.0%
Non-Ferrous Scrap Metal	1.2%	0.0%	0.0%
Glass Containers	14.4%	27.5%	27.8%
Bagged Waste	0.6%	0.0%	3.2%
Bagged Recyclables	0.5%	0.2%	2.9%
Tanglers	0.0%	0.4%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%
Full Containers	0.3%	1.7%	0.0%
Other Contaminants	3.5%	5.6%	6.6%
Grit	1.3%	4.2%	11.2%
TOTALS	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	4.47	2.35	4.15

Note: Columns may appear to not sum correctly due to rounding.

Oldsmar

Background

Population	14,841
Hauler	Republic Services
Recycler	Republic Services
Collection days	Mon-Fri
Single stream recycling tonnage (2019 reported)	Single family – 865 Drop-off – n/a Multi-family – n/a Commercial – n/a **Total - 865**

Sampling Schedule

Sector	Thu 10/15	Fri 10/16	Total
Single family	1	1	**2**

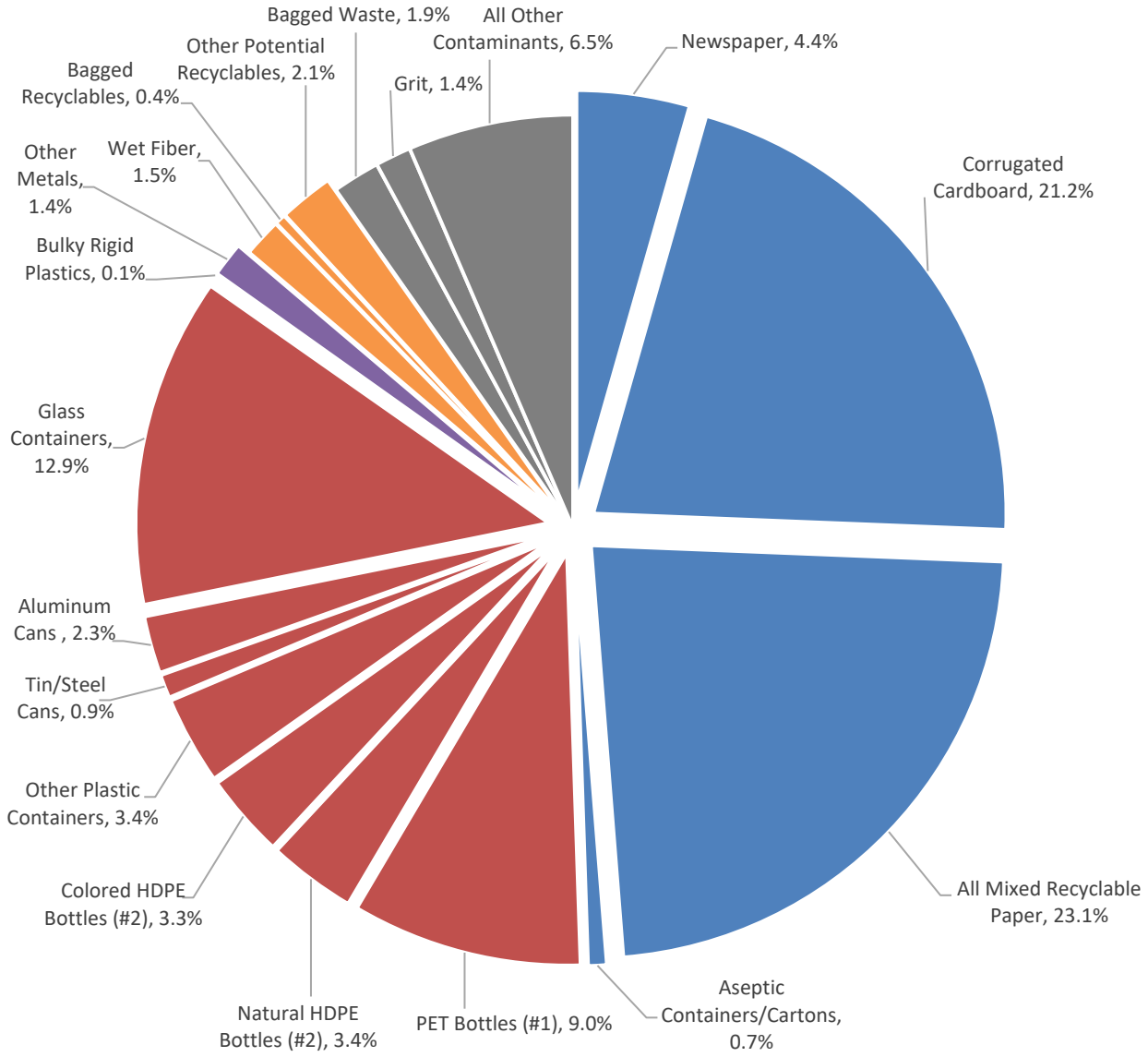
Results

Figure B-8 depicts the weighted average composition of single stream recyclables from Oldsmar. Table B-17 provides the weighted average for each material category measured in the RCS. Note: Because only two samples were pulled, a confidence interval was not able to be calculated. Results for individual samples from Oldsmar are included in Table B-18.

Key findings from Oldsmar results include:

- Over 86 percent of the recyclables stream was acceptable material. Mixed recyclable paper and plastic containers percentages were higher than the municipal average, while glass containers was lower. This was one of the lowest percentages of glass containers of all municipalities.
- Nearly 14 percent of the stream was unacceptable material, which was lower than the municipal average and one of the lower percentages of all municipalities. Grit, in particular, had a much lower percentage than average.
- A total of 2 bags of recyclables and no tanglers were found in both samples.

Figure B-8: Composition of Oldsmar Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-17: Composition of Oldsmar Single Stream Recyclables (% by Weight)

Material Category	Weighted Average
Newspaper	4.4%
Corrugated Cardboard	21.2%
Magazines and Catalogs	2.1%
Mixed Recyclable Paper	21.0%
Aseptic Containers/Cartons	0.7%
Recyclable Paper	**49.5%**
PET Bottles (#1)	9.0%
Natural HDPE Bottles (#2)	3.4%
Colored HDPE Bottles (#2)	3.3%
Non-Bottle PET Containers (#1)	1.5%
Non-Bottle HDPE Containers (#2)	0.4%
PP Containers (#5)	1.1%
Other Plastic Containers (#3,4,6,7)	0.5%
Tin/Steel Cans	0.9%
Aluminum Cans	2.3%
Glass Containers	12.9%
Recyclable Containers	**35.3%**
Bulky Rigid Plastics	0.1%
Ferrous Scrap Metal	1.3%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**1.5%**
Wet Corrugated Cardboard	0.4%
Wet Paper	1.1%
Shredded Paper	0.0%
Film-Wrapped Paper	1.3%
Bagged Recyclables	0.4%
Full Containers	0.8%
Potential Recyclables	**4.1%**
EPS Foam	0.2%
Non-Rigid Plastic Film	0.9%
Bagged Waste	1.9%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	5.4%
Grit	1.4%
Contaminants	**9.7%**
Total Acceptable Material	**86.2%**
Total Unacceptable Material	**13.8%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-18: Individual Oldsmar Sample Results (% by Weight)

Load Description	Oldsmar: SF Resi - Thu 10/15, Route #430, Truck #2455	Oldsmar: SF Resi - Fri 10/16, Route #430, Truck #2455
Material Categories sample #	**48**	**57**
Newspaper	4.7%	3.9%
Corrugated Cardboard	17.7%	26.8%
Wet Corrugated Cardboard	0.7%	0.0%
Magazines and Catalogs	3.0%	0.6%
Mixed Recyclable Paper	22.9%	18.0%
Wet Paper	1.5%	0.4%
Shredded Paper	0.0%	0.0%
Film-Wrapped Paper	1.9%	0.4%
Aseptic Containers/ Cartons	0.9%	0.4%
PET Bottles (#1)	5.2%	15.2%
Natural HDPE Bottles (#2)	1.2%	7.0%
Colored HDPE Bottles (#2)	1.7%	5.8%
Non-Bottle PET Containers (#1)	1.0%	2.3%
Non-Bottle HDPE Containers (#2)	0.0%	1.0%
PP Containers (#5)	1.1%	1.2%
Other Plastic Containers (#3,4,6,7)	0.3%	0.7%
Bulky Rigid Plastics	0.2%	0.0%
EPS Foam	0.3%	0.1%
Non-Rigid Plastic Film	0.8%	1.0%
Tin/Steel Cans	1.1%	0.7%
Ferrous Scrap Metal	2.2%	0.0%
Aluminum Cans	2.3%	2.2%
Aluminum Foil and Trays	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%
Glass Containers	16.1%	7.7%
Bagged Waste	3.0%	0.0%
Bagged Recyclables	0.6%	0.2%
Tanglers	0.0%	0.0%
Small Appliances	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%
Yard Waste	0.0%	0.0%
Full Containers	0.9%	0.7%
Other Contaminants	6.7%	3.4%
Grit	2.1%	0.3%
TOTALS	**100.0%**	**100.0%**
Load Weights (tons)	4.08	2.52

Note: Columns may appear to not sum correctly due to rounding.

St. Pete Beach

Background

Population	9,647
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 706 Drop-off – n/a Multi-family – 69 Commercial – n/a **Total - 775**

Sampling Schedule

Sector	Wed 10/14	Wed 10/21	Total
Single family	1	1	**2**

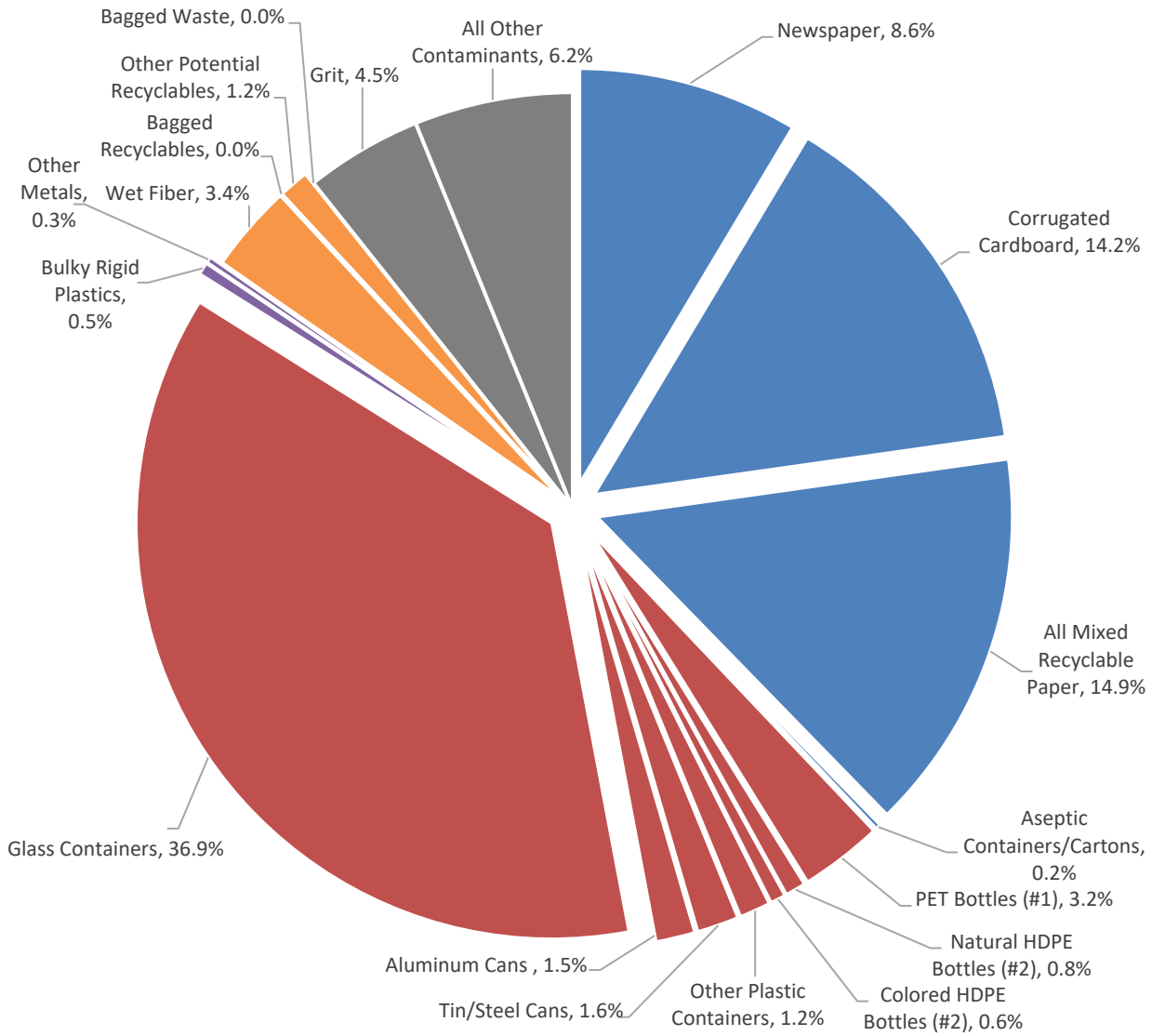
Results

Figure B-9 depicts the weighted average composition of single stream recyclables from St. Pete Beach. Table B-19 provides the weighted average composition for each material category measured in the RCS. Note: Because only two samples were pulled, a confidence interval was not able to be calculated. Results for individual samples from St. Pete Beach are included in Table B-20.

Key findings from St. Pete Beach results include:

- Approximately 85 percent of the recyclables stream was acceptable material. While corrugated cardboard and mixed recyclable paper had lower percentages than the municipal average, the percentage of newspaper and glass containers was much higher.
- Just over 15 percent of the stream was unacceptable material. This was lower than the municipal average. Wet paper, however, was higher than average.
- No bagged recyclables, bagged waste, or tanglers were in either sample.

Figure B-9: Composition of St. Pete Beach Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-19: Composition of St. Pete Beach Single Stream Recyclables (% by Weight)

Material Category	Weighted Average
Newspaper	8.6%
Corrugated Cardboard	14.2%
Magazines and Catalogs	6.5%
Mixed Recyclable Paper	8.5%
Aseptic Containers/Cartons	0.2%
Recyclable Paper	**37.9%**
PET Bottles (#1)	3.2%
Natural HDPE Bottles (#2)	0.8%
Colored HDPE Bottles (#2)	0.6%
Non-Bottle PET Containers (#1)	0.5%
Non-Bottle HDPE Containers (#2)	0.2%
PP Containers (#5)	0.4%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	1.6%
Aluminum Cans	1.5%
Glass Containers	36.9%
Recyclable Containers	**46.0%**
Bulky Rigid Plastics	0.5%
Ferrous Scrap Metal	0.2%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**0.8%**
Wet Corrugated Cardboard	0.3%
Wet Paper	3.1%
Shredded Paper	0.0%
Film-Wrapped Paper	1.1%
Bagged Recyclables	0.0%
Full Containers	0.1%
Potential Recyclables	**4.6%**
EPS Foam	0.0%
Non-Rigid Plastic Film	0.7%
Bagged Waste	0.0%
Tanglers	0.0%
Small Appliances	0.8%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.2%
Yard Waste	0.0%
Other Contaminants	4.5%
Grit	4.5%
Contaminants	**10.7%**
Total Acceptable Material	**84.7%**
Total Unacceptable Material	**15.3%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-20: Individual St. Pete Beach Sample Results (% by Weight)

Load Description	St. Pete Beach: SF Resi - Wed 10/14, Route #3604, Truck #301278	St. Pete Beach: SF Resi - Wed 10/21, Route #3603, Truck #301243
Material Categories sample #	**27**	**94**
Newspaper	6.0%	10.5%
Corrugated Cardboard	18.7%	10.8%
Wet Corrugated Cardboard	0.5%	0.2%
Magazines and Catalogs	3.8%	8.4%
Mixed Recyclable Paper	10.2%	7.2%
Wet Paper	2.4%	3.7%
Shredded Paper	0.0%	0.0%
Film-Wrapped Paper	1.2%	1.1%
Aseptic Containers/ Cartons	0.2%	0.2%
PET Bottles (#1)	3.4%	3.1%
Natural HDPE Bottles (#2)	0.9%	0.7%
Colored HDPE Bottles (#2)	0.3%	0.9%
Non-Bottle PET Containers (#1)	0.3%	0.7%
Non-Bottle HDPE Containers (#2)	0.4%	0.0%
PP Containers (#5)	0.3%	0.6%
Other Plastic Containers (#3,4,6,7)	0.0%	0.2%
Bulky Rigid Plastics	0.9%	0.2%
EPS Foam	0.0%	0.0%
Non-Rigid Plastic Film	0.7%	0.7%
Tin/Steel Cans	1.2%	2.0%
Ferrous Scrap Metal	0.5%	0.0%
Aluminum Cans	1.3%	1.7%
Aluminum Foil and Trays	0.1%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%
Glass Containers	39.7%	34.8%
Bagged Waste	0.0%	0.0%
Bagged Recyclables	0.0%	0.0%
Tanglers	0.0%	0.0%
Small Appliances	0.0%	1.4%
Hazardous/Special Waste	0.0%	0.0%
Non-Alkaline Batteries	0.4%	0.0%
Yard Waste	0.0%	0.0%
Full Containers	0.1%	0.0%
Other Contaminants	3.5%	5.3%
Grit	3.0%	5.7%
TOTALS	**100.0%**	**100.0%**
Load Weights (tons)	4.38	5.85

Note: Columns may appear to not sum correctly due to rounding.

Treasure Island

Background

Population	6,937
Hauler	Single Family – Republic Services Multi-Family – Conex
Recycler	Republic Services
Collection days	Mon, Thu
Single stream recycling tonnage (2019 reported)	Single family – 426 Drop-off – n/a Multi-family – 297 Commercial – n/a **Total - 723**

Sampling Schedule

Sector	Mon 10/26	Thu 10/29	Total
Single family	1		**1**
Multi-family		1	**1**
Total	**1**	**1**	**2**

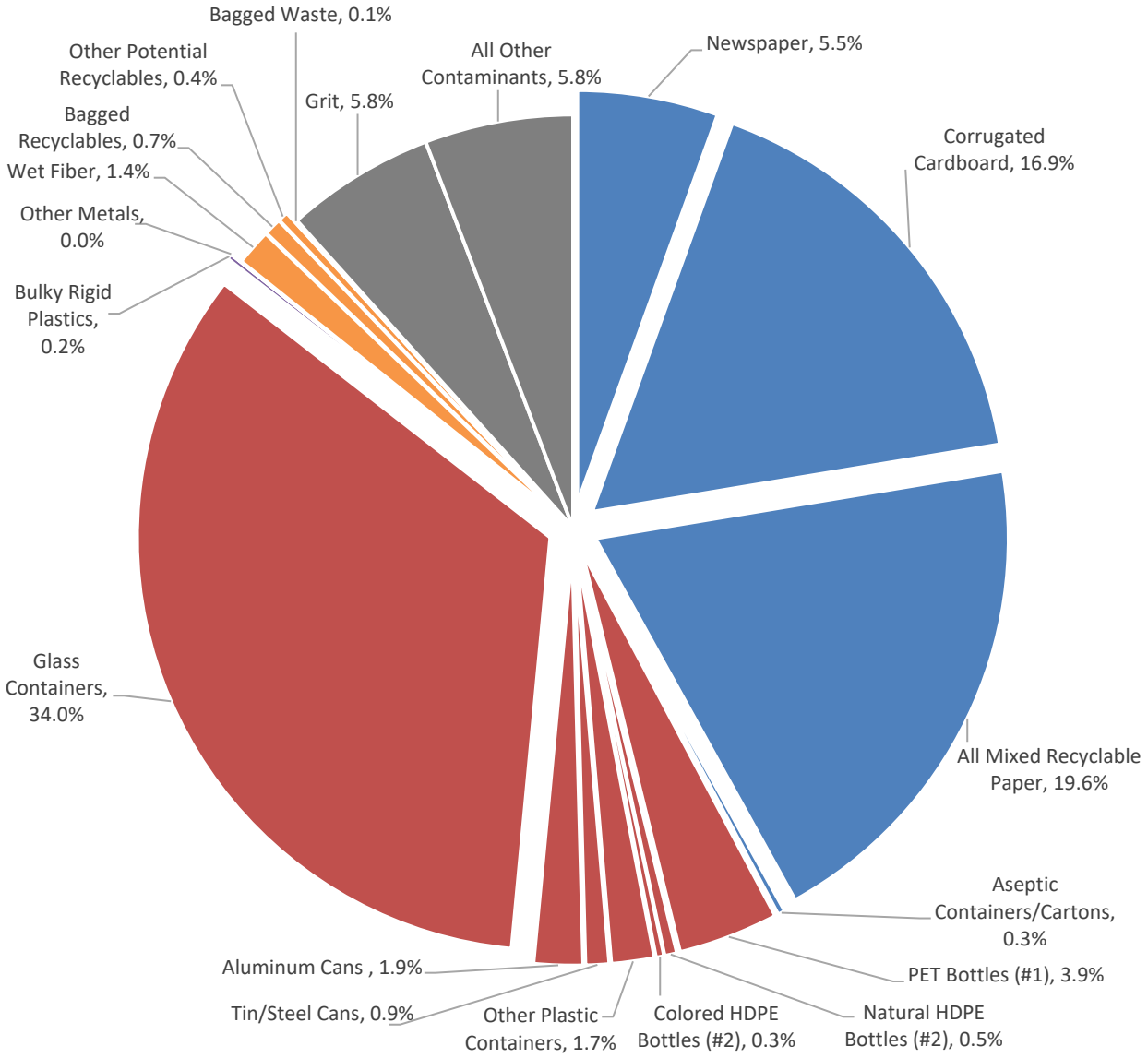
Results

Figure B-10 depicts the weighted average composition of single stream recyclables from Treasure Island. Table B-21 provides the weighted average for each material category measured in the RCS. Note: Because only two samples were pulled, a confidence interval was not able to be calculated. Results for individual samples from Treasure Island are included in Table B-22.

Key findings from Treasure Island results include:

- Approximately 86 percent of the recyclables stream was acceptable material. Corrugated cardboard had a lower percentage than the municipal average, but glass containers had a higher percentage.
- About 14 percent of the stream was unacceptable material, which was lower than the municipal average. Nearly all categories of unacceptable material was lower than average, most significantly bagged waste, but grit had a higher percentage than average.
- A total of 2 bags of recyclables and 1 tangler were found in both samples.

Figure B-10: Composition of Treasure Island Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-21: Composition of Treasure Island Single Stream Recyclables (% by Weight)

Material Category	Weighted Average
Newspaper	5.5%
Corrugated Cardboard	16.9%
Magazines and Catalogs	3.7%
Mixed Recyclable Paper	15.8%
Aseptic Containers/Cartons	0.3%
Recyclable Paper	**42.2%**
PET Bottles (#1)	3.9%
Natural HDPE Bottles (#2)	0.5%
Colored HDPE Bottles (#2)	0.3%
Non-Bottle PET Containers (#1)	1.0%
Non-Bottle HDPE Containers (#2)	0.1%
PP Containers (#5)	0.5%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	0.9%
Aluminum Cans	1.9%
Glass Containers	34.0%
Recyclable Containers	**43.3%**
Bulky Rigid Plastics	0.2%
Ferrous Scrap Metal	0.0%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**0.2%**
Wet Corrugated Cardboard	0.5%
Wet Paper	0.9%
Shredded Paper	0.0%
Film-Wrapped Paper	0.2%
Bagged Recyclables	0.7%
Full Containers	0.2%
Potential Recyclables	**2.5%**
EPS Foam	0.1%
Non-Rigid Plastic Film	0.5%
Bagged Waste	0.1%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	5.2%
Grit	5.8%
Contaminants	**11.7%**
Total Acceptable Material	**85.7%**
Total Unacceptable Material	**14.3%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Table B-22: Individual Treasure Island Sample Results (% by Weight)

Load Description	Treasure Island: SF Resi - Mon 10/26, Route #1441, Truck #2090	Treasure Island: Multi-family - Thu 10/29, Truck #40
Material Categories sample #	**131**	**145**
Newspaper	5.6%	5.4%
Corrugated Cardboard	12.1%	24.8%
Wet Corrugated Cardboard	0.0%	1.3%
Magazines and Catalogs	4.3%	2.9%
Mixed Recyclable Paper	15.7%	16.0%
Wet Paper	1.4%	0.2%
Shredded Paper	0.0%	0.0%
Film-Wrapped Paper	0.2%	0.3%
Aseptic Containers/ Cartons	0.3%	0.2%
PET Bottles (#1)	4.2%	3.4%
Natural HDPE Bottles (#2)	0.4%	0.7%
Colored HDPE Bottles (#2)	0.2%	0.6%
Non-Bottle PET Containers (#1)	1.2%	0.7%
Non-Bottle HDPE Containers (#2)	0.2%	0.0%
PP Containers (#5)	0.4%	0.5%
Other Plastic Containers (#3,4,6,7)	0.1%	0.1%
Bulky Rigid Plastics	0.3%	0.0%
EPS Foam	0.1%	0.1%
Non-Rigid Plastic Film	0.4%	0.7%
Tin/Steel Cans	1.0%	0.7%
Ferrous Scrap Metal	0.0%	0.0%
Aluminum Cans	2.0%	1.7%
Aluminum Foil and Trays	0.0%	0.0%
Non-Ferrous Scrap Metal	0.0%	0.0%
Glass Containers	35.4%	31.8%
Bagged Waste	0.1%	0.0%
Bagged Recyclables	1.1%	0.0%
Tanglers	0.0%	0.0%
Small Appliances	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%
Yard Waste	0.0%	0.0%
Full Containers	0.3%	0.0%
Other Contaminants	6.3%	3.3%
Grit	6.7%	4.4%
TOTALS	**100.0%**	**100.0%**
Load Weights (tons)	4.57	2.76

Note: Columns may appear to not sum correctly due to rounding.

Indian Rocks Beach

Background

Population	4,279
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 232 Drop-off – n/a Multi-family – 232 Commercial – 199 **Total - 663**

Sampling Schedule

Sector	Wed 10/21
Single family	1

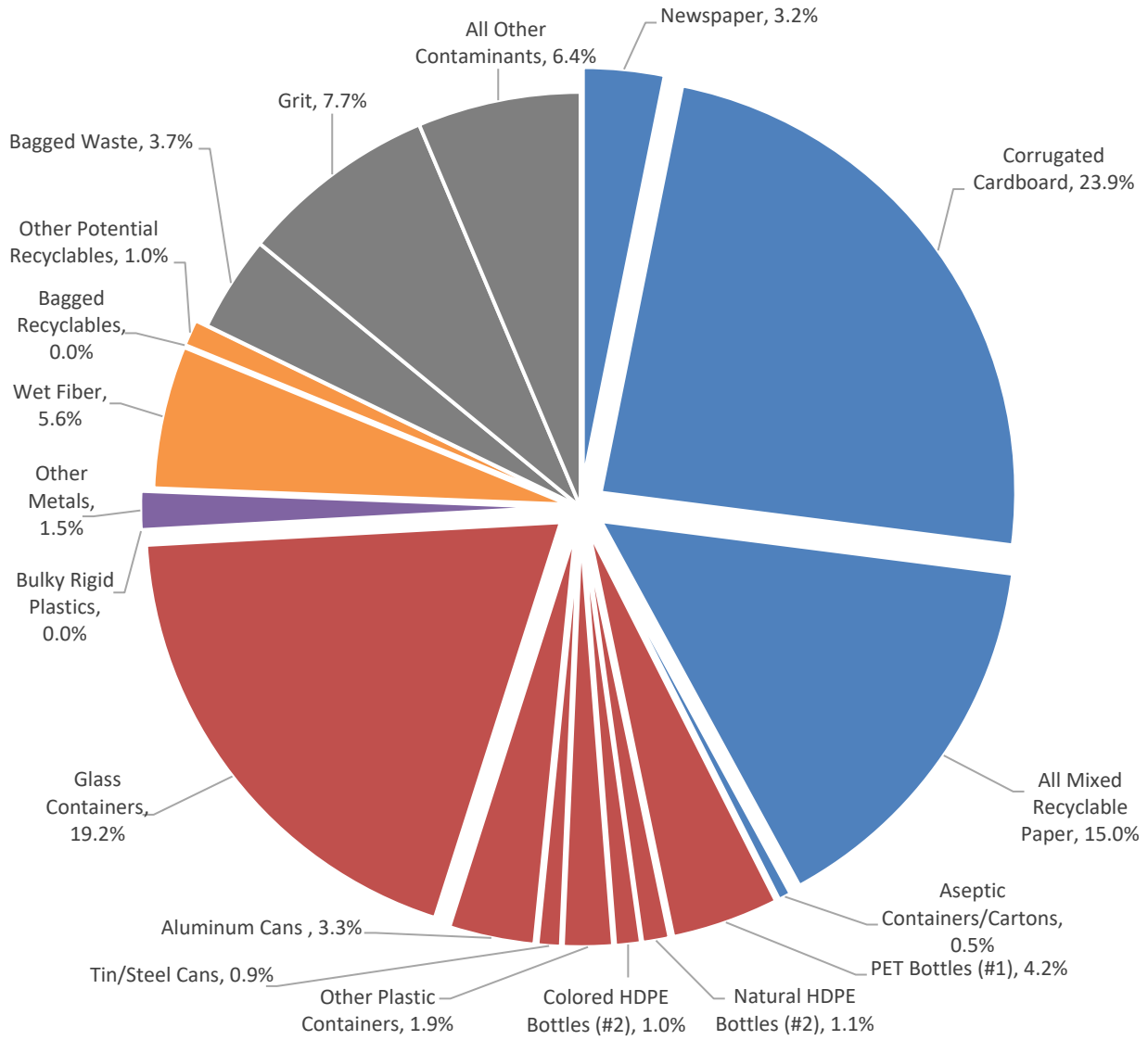
Results

Figure B-11 depicts the composition of the sample of single stream recyclables from Indian Rocks Beach. Table B-23 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Indian Rocks Beach results include:

- Less than 76 percent of the sample was acceptable material, which was lower than the municipal average. Nearly all recyclable categories had lower percentages than average.
- Over 24 percent of the sample was unacceptable material. Wet corrugated cardboard, wet paper, bagged waste, and grit all had higher percentages than the municipal average.
- No bags of recyclables or tanglers were found in the sample.

Figure B-11: Composition of Indian Rocks Beach Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-23: Composition of Indian Rocks Beach Recyclables Sample (% by Weight)

Material Category	Indian Rocks Beach: SF Resi - Wed 10/21, Route #3601, Truck #300744
Newspaper	3.2%
Corrugated Cardboard	23.9%
Magazines and Catalogs	1.0%
Mixed Recyclable Paper	14.1%
Aseptic Containers/Cartons	0.5%
Recyclable Paper	**42.6%**
PET Bottles (#1)	4.2%
Natural HDPE Bottles (#2)	1.1%
Colored HDPE Bottles (#2)	1.0%
Non-Bottle PET Containers (#1)	1.1%
Non-Bottle HDPE Containers (#2)	0.2%
PP Containers (#5)	0.5%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	0.9%
Aluminum Cans	3.3%
Glass Containers	19.2%
Recyclable Containers	**31.6%**
Bulky Rigid Plastics	0.0%
Ferrous Scrap Metal	1.4%
Aluminum Foil and Trays	0.1%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**1.5%**
Wet Corrugated Cardboard	1.5%
Wet Paper	4.1%
Shredded Paper	0.0%
Film-Wrapped Paper	0.7%
Bagged Recyclables	0.0%
Full Containers	0.4%
Potential Recyclables	**6.6%**
EPS Foam	0.1%
Non-Rigid Plastic Film	1.1%
Bagged Waste	3.7%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	5.1%
Grit	7.7%
Contaminants	**17.8%**
Total Acceptable Material	**75.6%**
Total Unacceptable Material	**24.4%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Seminole

Background

Population	19,449
Hauler	Waste Management
Recycler	Waste Management
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 549 Multi-family – n/a Commercial – n/a **Total - 549**

Sampling Schedule

Sector	Wed 10/21
Single family	1

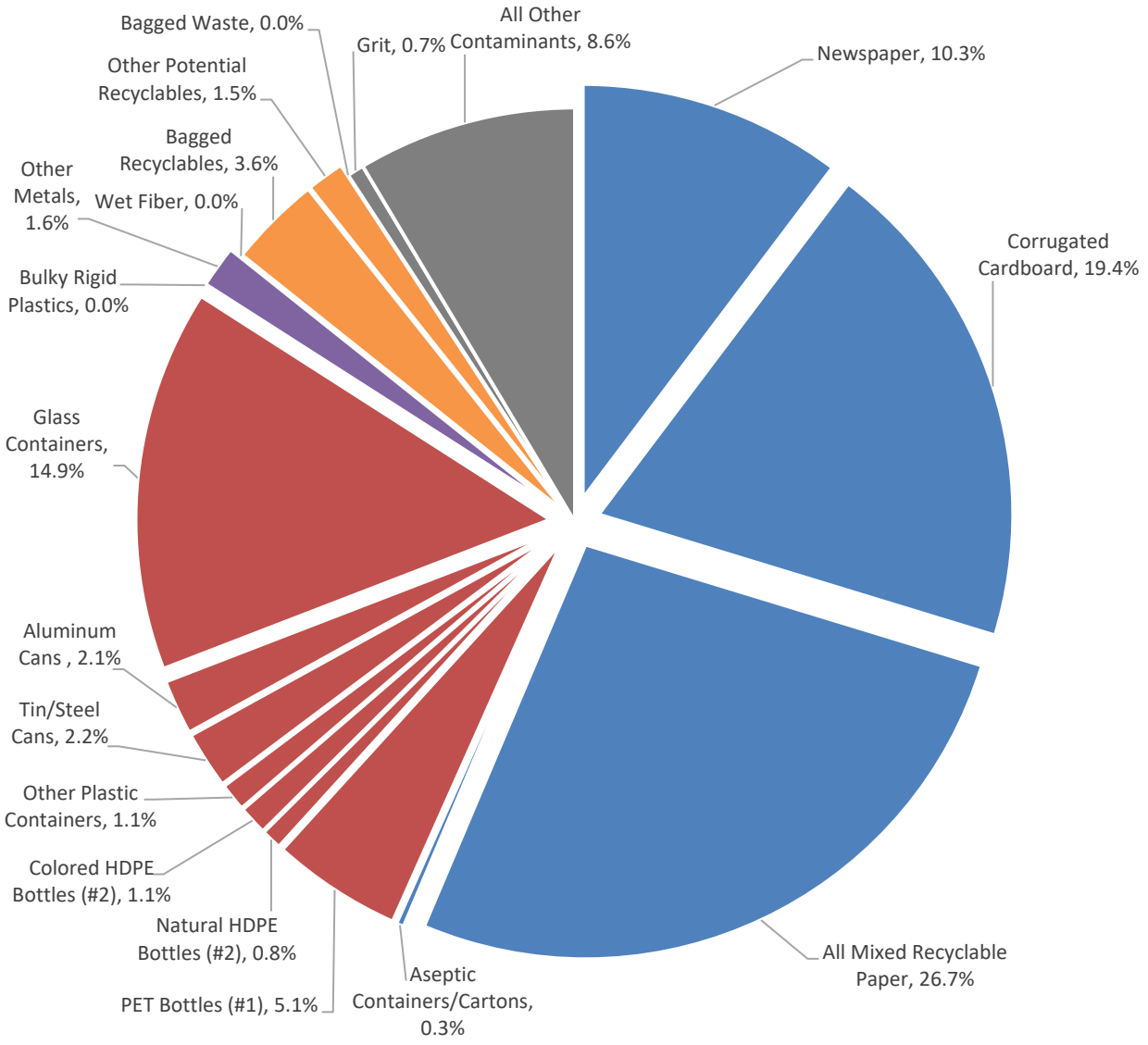
Results

Figure B-12 depicts the composition of the sample of single stream recyclables from Seminole. Table B-24 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Seminole results include:

- Approximately 86 percent of the sample was recyclable material. Over half of the sample was recyclable paper, due to the high percentages of newspaper and magazines and catalogs. Glass containers, however, were lower than the municipal average.
- About 14 percent of the sample was unacceptable material. While the percentage of bagged recyclables was higher than the municipal average, the percentage of contaminants was lower, especially grit, and no bagged waste was in the sample.
- A total of 3 bags of recyclables and 1 tangler were found in the sample.

Figure B-12: Composition of Seminole Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-24: Composition of Seminole Single Stream Recyclables (% by Weight)

Material Category	Seminole: SF Resi - Wed 10/21, Truck #264154
Newspaper	10.3%
Corrugated Cardboard	19.4%
Magazines and Catalogs	11.8%
Mixed Recyclable Paper	14.9%
Aseptic Containers/Cartons	0.3%
Recyclable Paper	**56.7%**
PET Bottles (#1)	5.1%
Natural HDPE Bottles (#2)	0.8%
Colored HDPE Bottles (#2)	1.1%
Non-Bottle PET Containers (#1)	0.6%
Non-Bottle HDPE Containers (#2)	0.0%
PP Containers (#5)	0.4%
Other Plastic Containers (#3,4,6,7)	0.0%
Tin/Steel Cans	2.2%
Aluminum Cans	2.1%
Glass Containers	14.9%
Recyclable Containers	**27.4%**
Bulky Rigid Plastics	0.0%
Ferrous Scrap Metal	1.4%
Aluminum Foil and Trays	0.1%
Non-Ferrous Scrap Metal	0.2%
Other Recyclables	**1.6%**
Wet Corrugated Cardboard	0.0%
Wet Paper	0.0%
Shredded Paper	0.0%
Film-Wrapped Paper	1.0%
Bagged Recyclables	3.6%
Full Containers	0.4%
Potential Recyclables	**5.1%**
EPS Foam	0.1%
Non-Rigid Plastic Film	0.4%
Bagged Waste	0.0%
Tanglers	0.3%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	7.8%
Grit	0.7%
Contaminants	**9.2%**
Total Acceptable Material	**85.7%**
Total Unacceptable Material	**14.3%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Gulfport

Background

Population	12,544
Hauler	Gulfport
Recycler	Recycling Services of Florida
Collection days	Mon-Fri
Dual stream recycling tonnage (2019 reported)	Single family – 254 Drop-off – n/a Multi-family – 187 Commercial – 9 **Total - 450**

Sampling Schedule

Sector	Mon 10/26
Single family	1

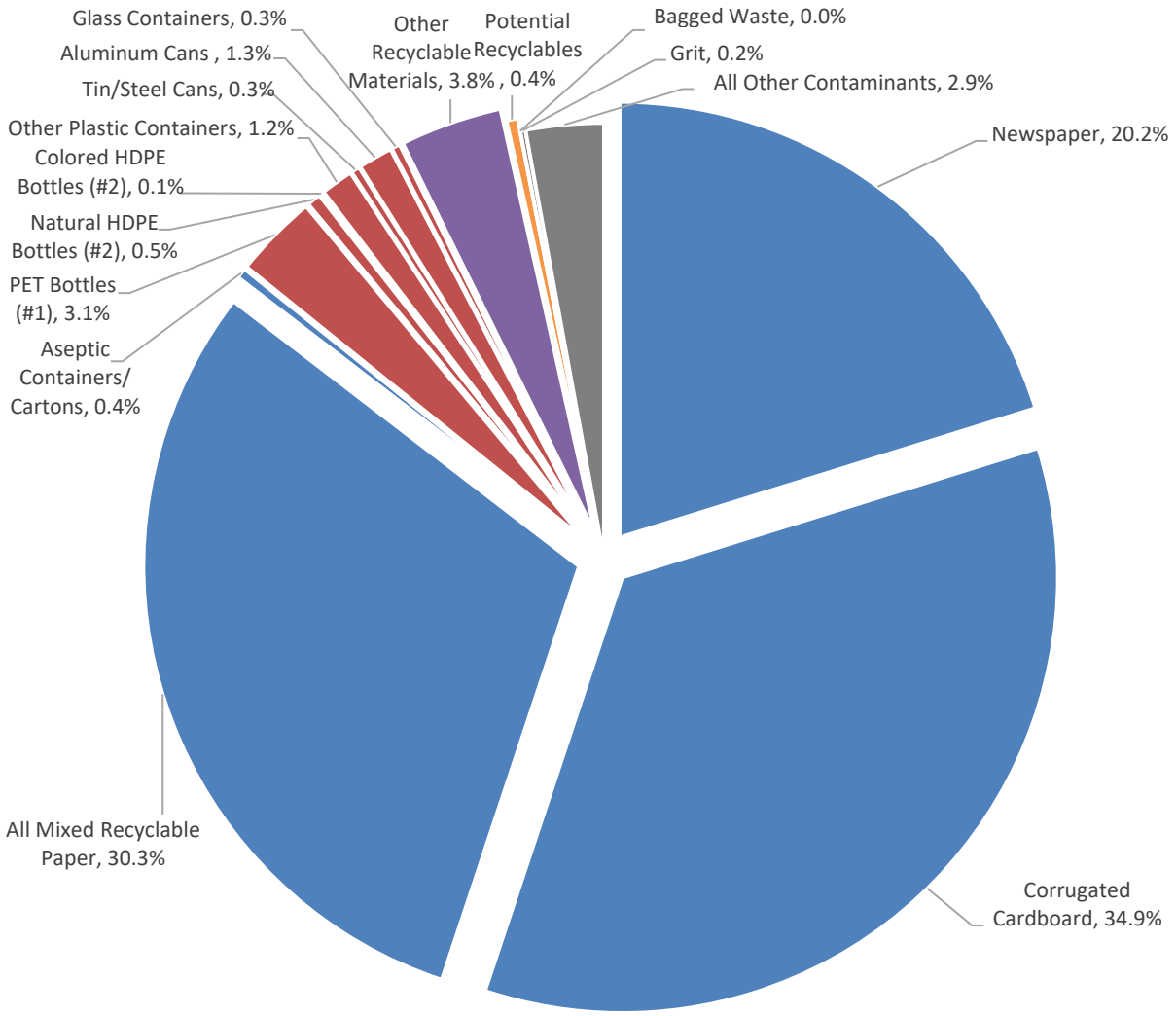
Results

Figure B-13 depicts the composition of the sample of dual stream recyclables from Gulfport. Table B-25 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Gulfport results include:

- The sample was overall very different than average, likely due to it being dual stream, rather than single stream.
- Almost 97 percent of the sample was acceptable material, and 86 percent of the stream was recyclable paper, all categories of which, except aseptic containers/cartons, had much higher percentages than the municipal average. The percentage of newspaper, for example, was over four times that of the average. The percentages of all of containers was much lower than average, but glass containers were hardly present in the sample. It is important to note, Gulfport does not include glass in their recycling program.
- Only 3.5 percent of the sample was unacceptable material, most of which was other contaminants.
- No bags of recyclables or tanglers were found in the sample.

Figure B-13: Composition of Gulfport Dual Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-25: Composition of Gulfport Dual Stream Recyclables (% by Weight)

Material Category	Gulfport: SF Resi - Mon 10/26, Route #1, Truck #2478
Newspaper	20.2%
Corrugated Cardboard	34.9%
Magazines and Catalogs	8.9%
Mixed Recyclable Paper	21.4%
Aseptic Containers/Cartons	0.4%
Recyclable Paper	**85.8%**
PET Bottles (#1)	3.1%
Natural HDPE Bottles (#2)	0.5%
Colored HDPE Bottles (#2)	0.1%
Non-Bottle PET Containers (#1)	0.5%
Non-Bottle HDPE Containers (#2)	0.1%
PP Containers (#5)	0.3%
Other Plastic Containers (#3,4,6,7)	0.2%
Tin/Steel Cans	0.3%
Aluminum Cans	1.3%
Glass Containers	0.3%
Recyclable Containers	**6.9%**
Bulky Rigid Plastics	0.0%
Ferrous Scrap Metal	3.8%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**3.8%**
Wet Corrugated Cardboard	0.0%
Wet Paper	0.3%
Shredded Paper	0.0%
Film-Wrapped Paper	0.1%
Bagged Recyclables	0.0%
Full Containers	0.0%
Potential Recyclables	**0.4%**
EPS Foam	0.0%
Non-Rigid Plastic Film	0.6%
Bagged Waste	0.0%
Tanglers	0.0%
Small Appliances	0.1%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	2.3%
Grit	0.2%
Contaminants	**3.1%**
Total Acceptable Material	**96.5%**
Total Unacceptable Material	**3.5%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Madeira Beach

Background

Population	4,421
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 211 Drop-off – 37 Multi-family – 196 Commercial – n/a **Total - 444**

Sampling Schedule

Sector	Wed 10/14
Single family	1

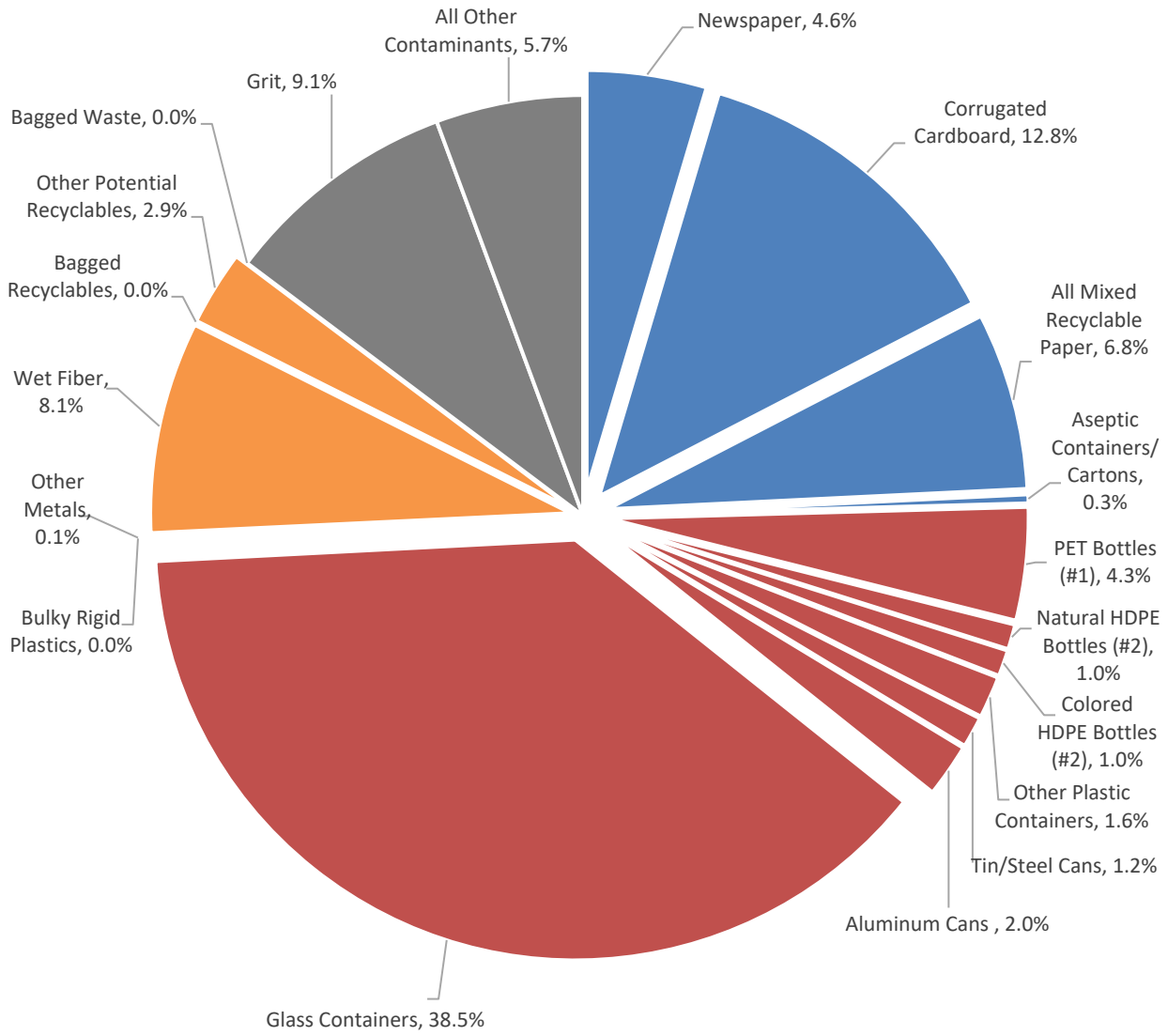
Results

Figure B-14 depicts the composition of the sample of single stream recyclables from Madeira Beach. Table B-26 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Madeira Beach results include:

- Approximately 74 percent of the sample was acceptable material. Over half of this was glass containers, which had a much higher percentage than the municipal average. Corrugated cardboard and mixed recyclable paper had much lower percentages than average.
- Almost 26 percent of the sample was unacceptable material, higher than average. This was due to high percentages of wet paper and grit. In fact, this sample had one of the highest percentages of wet fiber of all the samples, possibly due the recyclables being rained on during collection.
- No bagged waste, bagged recyclables, or tanglers were found in the sample.

Figure B-14: Composition of Madeira Beach Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-26: Composition of Madeira Beach Single Stream Recyclables (% by Weight)

Material Category	Madeira Beach: SF Resi - Wed 10/14, Route #3602,
Newspaper	4.6%
Corrugated Cardboard	12.8%
Magazines and Catalogs	1.1%
Mixed Recyclable Paper	5.8%
Aseptic Containers/Cartons	0.3%
Recyclable Paper	**24.6%**
PET Bottles (#1)	4.3%
Natural HDPE Bottles (#2)	1.0%
Colored HDPE Bottles (#2)	1.0%
Non-Bottle PET Containers (#1)	0.7%
Non-Bottle HDPE Containers (#2)	0.0%
PP Containers (#5)	0.7%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	1.2%
Aluminum Cans	2.0%
Glass Containers	38.5%
Recyclable Containers	**49.6%**
Bulky Rigid Plastics	0.0%
Ferrous Scrap Metal	0.1%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**0.1%**
Wet Corrugated Cardboard	1.0%
Wet Paper	7.2%
Shredded Paper	0.0%
Film-Wrapped Paper	2.4%
Bagged Recyclables	0.0%
Full Containers	0.5%
Potential Recyclables	**11.0%**
EPS Foam	0.0%
Non-Rigid Plastic Film	0.6%
Bagged Waste	0.0%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	5.0%
Grit	9.1%
Contaminants	**14.7%**
Total Acceptable Material	**74.2%**
Total Unacceptable Material	**25.8%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

Belleair

Background

Population	4,022
Hauler	Clearwater
Recycler	Waste Management
Collection days	Thu
Single stream recycling tonnage (2019 reported)	Single family – 318 Drop-off - 18 Multi-family – 88 Commercial – n/a **Total – 424**

Sampling Schedule

Sector	Thu 10/15	Thu 10/22	Wed 10/28	Total
Single family	2	2	2	**6**

Note: Only one load of recyclables was collected from Belleair each week. Therefore, 2 samples were pulled from the one load.

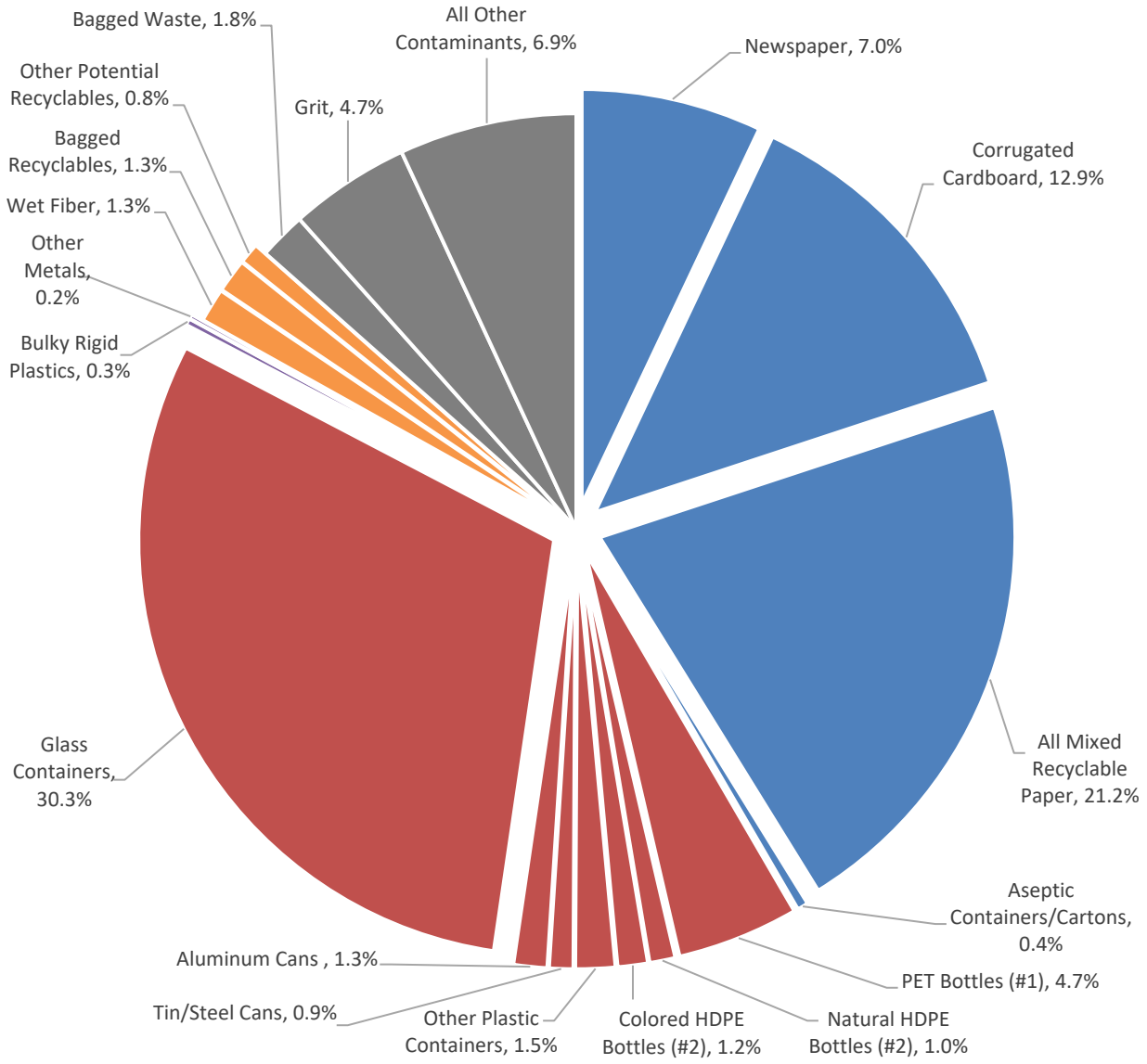
Results

Figure B-15 depicts the weighted average composition of single stream recyclables from Belleair. Table B-27 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS. Note: Because only six samples were pulled, the confidence interval is for information purposes only and should not be considered statistically valid. Results for individual samples from Belleair are included in Table B-28.

Key findings from Belleair results include:

- Approximately 83 percent of the recyclables stream was acceptable material. While corrugated cardboard was lower than the municipal average, glass containers was higher.
- Approximately 17 percent of the recyclables was unacceptable material. This was slightly lower than the municipal average, but the composition of individual unacceptable material categories was similar to the average.
- A total of 7 bags of recyclables and 1 tangler were found in all 6 samples.

Figure B-15: Composition of Belleair Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-27: Composition of Belleair Single Stream Recyclables (% by Weight)

Material Category	Weighted Average	90% Confidence Interval	
		Lower Bounds	Upper Bounds
Newspaper	7.0%	3.8%	10.3%
Corrugated Cardboard	12.9%	7.0%	18.8%
Magazines and Catalogs	6.4%	4.9%	7.9%
Mixed Recyclable Paper	14.8%	12.0%	17.6%
Aseptic Containers/Cartons	0.4%	0.2%	0.6%
Recyclable Paper	**41.6%**	**32.9%**	**50.3%**
PET Bottles (#1)	4.7%	3.8%	5.7%
Natural HDPE Bottles (#2)	1.0%	0.6%	1.4%
Colored HDPE Bottles (#2)	1.2%	0.9%	1.4%
Non-Bottle PET Containers (#1)	0.8%	0.6%	1.0%
Non-Bottle HDPE Containers (#2)	0.2%	0.1%	0.3%
PP Containers (#5)	0.4%	0.3%	0.5%
Other Plastic Containers (#3,4,6,7)	0.1%	0.0%	0.2%
Tin/Steel Cans	0.9%	0.7%	1.1%
Aluminum Cans	1.3%	1.1%	1.5%
Glass Containers	30.3%	22.1%	38.6%
Recyclable Containers	**41.0%**	**33.4%**	**48.7%**
Bulky Rigid Plastics	0.3%	-0.2%	0.7%
Ferrous Scrap Metal	0.1%	0.0%	0.1%
Aluminum Foil and Trays	0.1%	0.0%	0.2%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.1%
Other Recyclables	**0.4%**	**-0.1%**	**0.9%**
Wet Corrugated Cardboard	0.0%	0.0%	0.0%
Wet Paper	1.3%	0.2%	2.4%
Shredded Paper	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.6%	0.3%	0.9%
Bagged Recyclables	1.3%	-0.6%	3.2%
Full Containers	0.2%	-0.1%	0.5%
Potential Recyclables	**3.4%**	**1.8%**	**5.1%**
EPS Foam	0.1%	0.0%	0.2%
Non-Rigid Plastic Film	0.7%	0.4%	0.9%
Bagged Waste	1.8%	0.3%	3.4%
Tanglers	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%
Yard Waste	0.1%	-0.1%	0.2%
Other Contaminants	6.1%	4.5%	7.7%
Grit	4.7%	1.2%	8.2%
Contaminants	**13.5%**	**8.0%**	**18.9%**
Total Acceptable Material	**83.1%**		
Total Unacceptable Material	**16.9%**		
Total	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-28: Individual Belleair Sample Results (% by Weight)

Load Description	Belleair: SF Resi - Thu 10/15, Route #2, Truck #4652	Belleair: SF Resi - Thu 10/15, Route #2, Truck #4652	Belleair: SF Resi - Thu 10/22, Route #2, Truck #4652	Belleair: SF Resi - Thu 10/22, Route #2, Truck #4652	Belleair: SF Resi - Thu 10/29, Route #2, Truck #4452	Belleair: SF Resi - Thu 10/29, Route #2, Truck #4452
Material Categories sample #	**42**	**43**	**107**	**108**	**146**	**147**
Newspaper	7.0%	8.4%	2.5%	13.8%	3.9%	6.3%
Corrugated Cardboard	18.9%	25.3%	7.2%	7.6%	10.6%	11.2%
Wet Corrugated Cardboard	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Magazines and Catalogs	6.9%	3.9%	6.7%	6.3%	5.2%	9.4%
Mixed Recyclable Paper	18.7%	19.9%	12.6%	11.6%	14.4%	13.3%
Wet Paper	3.0%	0.3%	1.6%	2.6%	0.0%	0.3%
Shredded Paper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.6%	0.6%	0.6%	0.7%	1.0%
Aseptic Containers/ Cartons	0.4%	0.3%	0.4%	0.2%	0.9%	0.4%
PET Bottles (#1)	6.5%	5.0%	4.0%	4.0%	5.7%	3.6%
Natural HDPE Bottles (#2)	2.0%	1.2%	0.8%	0.6%	0.8%	0.7%
Colored HDPE Bottles (#2)	1.5%	0.8%	1.3%	0.8%	1.5%	1.3%
Non-Bottle PET Containers (#1)	0.9%	1.3%	0.6%	0.6%	0.9%	0.8%
Non-Bottle HDPE Containers (#2)	0.3%	0.3%	0.2%	0.0%	0.2%	0.3%
PP Containers (#5)	0.3%	0.6%	0.4%	0.4%	0.4%	0.3%
Other Plastic Containers (#3,4,6,7)	0.1%	0.3%	0.1%	0.0%	0.2%	0.1%
Bulky Rigid Plastics	0.5%	1.3%	0.0%	0.0%	0.0%	0.0%
EPS Foam	0.0%	0.3%	0.1%	0.1%	0.1%	0.0%
Non-Rigid Plastic Film	0.5%	0.9%	0.9%	0.2%	0.7%	0.9%
Tin/Steel Cans	0.6%	0.9%	0.9%	0.8%	1.3%	1.1%
Ferrous Scrap Metal	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Aluminum Cans	1.4%	1.3%	1.7%	1.0%	1.4%	1.1%
Aluminum Foil and Trays	0.0%	0.3%	0.1%	0.0%	0.0%	0.1%
Non-Ferrous Scrap Metal	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%
Glass Containers	22.6%	13.5%	32.9%	32.7%	40.2%	37.3%
Bagged Waste	0.0%	1.0%	4.9%	2.9%	0.0%	1.4%
Bagged Recyclables	1.4%	5.9%	0.0%	0.0%	1.4%	0.0%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hazardous/Special Waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Full Containers	0.0%	0.0%	0.3%	0.9%	0.0%	0.0%
Other Contaminants	5.4%	4.9%	6.6%	9.3%	6.1%	3.5%
Grit	0.9%	1.6%	12.6%	3.0%	3.1%	5.5%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	**4.35**		**5.46**		**4.75**	

Note: Columns may appear to not sum correctly due to rounding.

Indian Shores

Background

Population	1,470
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 78 Drop-off – 53 Multi-family – 37 Commercial – 82 **Total - 250**

Sampling Schedule

Sector	Wed 10/14
Single family	1

Note: Indian Shores and South Pasadena recyclables were collected in the same truck. Therefore, the Indian Shores sample was one of three samples from the collection vehicle on Wed 10/14 and likely included recyclables from South Pasadena and vice versa.

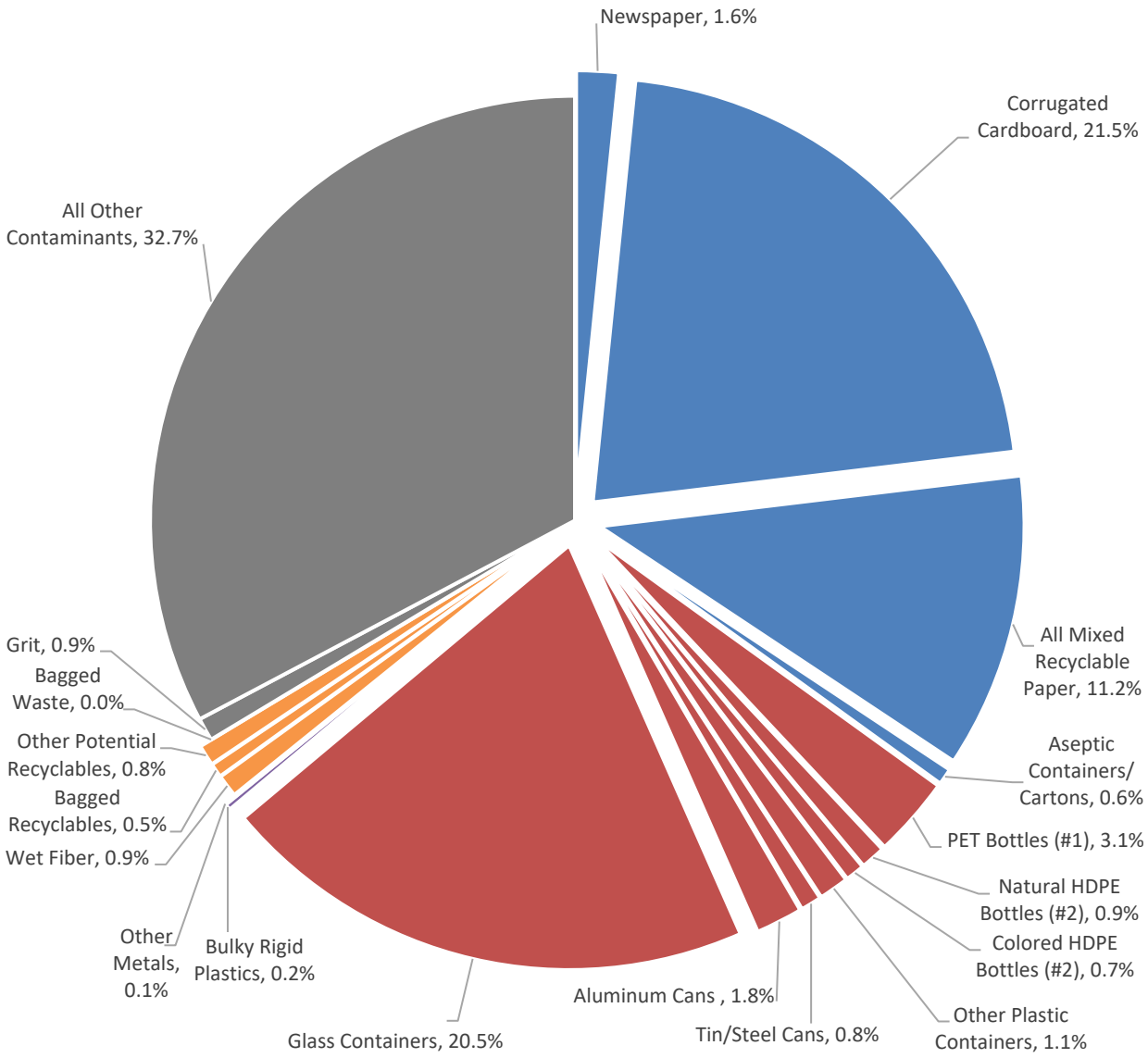
Results

Figure B-16 depicts the composition of the sample of single stream recyclables from Indian Shores. Table B-29 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Indian Shores results include:

- Only 64 percent of the sample was acceptable material. Newspaper, magazines and catalogs, and mixed recyclable paper were all lower than the municipal average.
- Nearly 36 percent of the sample was unacceptable material. This was due to several large bags of yard waste found in the sample, comprising almost 27 percent of the sample.
- A total of 2 bags of recyclables but no tanglers were found in the samples.
- Since Indian Shores' recyclables are collected in the same truck as South Pasadena, the South Pasadena results may provide some insight into Indian Shores' composition but it was not possible to distinguish which materials were from which municipality.

Figure B-16: Composition of Indian Shores Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-29: Composition of Indian Shores Single Stream Recyclables (% by Weight)

Material Category	Indian Shores: SF Resi - Wed 10/14, Route #3606, Truck #300847
Newspaper	1.6%
Corrugated Cardboard	21.5%
Magazines and Catalogs	0.8%
Mixed Recyclable Paper	10.5%
Aseptic Containers/Cartons	0.6%
Recyclable Paper	**35.0%**
PET Bottles (#1)	3.1%
Natural HDPE Bottles (#2)	0.9%
Colored HDPE Bottles (#2)	0.7%
Non-Bottle PET Containers (#1)	0.4%
Non-Bottle HDPE Containers (#2)	0.0%
PP Containers (#5)	0.6%
Other Plastic Containers (#3,4,6,7)	0.1%
Tin/Steel Cans	0.8%
Aluminum Cans	1.8%
Glass Containers	20.5%
Recyclable Containers	**29.0%**
Bulky Rigid Plastics	0.2%
Ferrous Scrap Metal	0.0%
Aluminum Foil and Trays	0.1%
Non-Ferrous Scrap Metal	0.0%
Other Recyclables	**0.3%**
Wet Corrugated Cardboard	0.0%
Wet Paper	0.9%
Shredded Paper	0.0%
Film-Wrapped Paper	0.0%
Bagged Recyclables	0.5%
Full Containers	0.8%
Potential Recyclables	**2.2%**
EPS Foam	0.0%
Non-Rigid Plastic Film	1.0%
Bagged Waste	0.0%
Tanglers	0.0%
Small Appliances	0.0%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	26.8%
Other Contaminants	4.9%
Grit	0.9%
Contaminants	**33.6%**
Total Acceptable Material	**64.2%**
Total Unacceptable Material	**35.8%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.

South Pasadena

Background

Population	5,085
Hauler	Waste Connections
Recycler	Waste Connections
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 86 Drop-off – 11 Multi-family – 24 Commercial – 75 **Total - 196**

Sampling Schedule

Sector	Thu 10/15	Thu 10/22	Wed 10/28	Total
Single family	2	2	2	**6**

Note: Only one load of recyclables was collected from South Pasadena each week. Therefore, 2 samples were pulled from each load each week. Also, Indian Shores and South Pasadena recyclables were collected in the same truck. Therefore, the South Pasadena samples likely included recyclables from Indian Shores and vice versa.

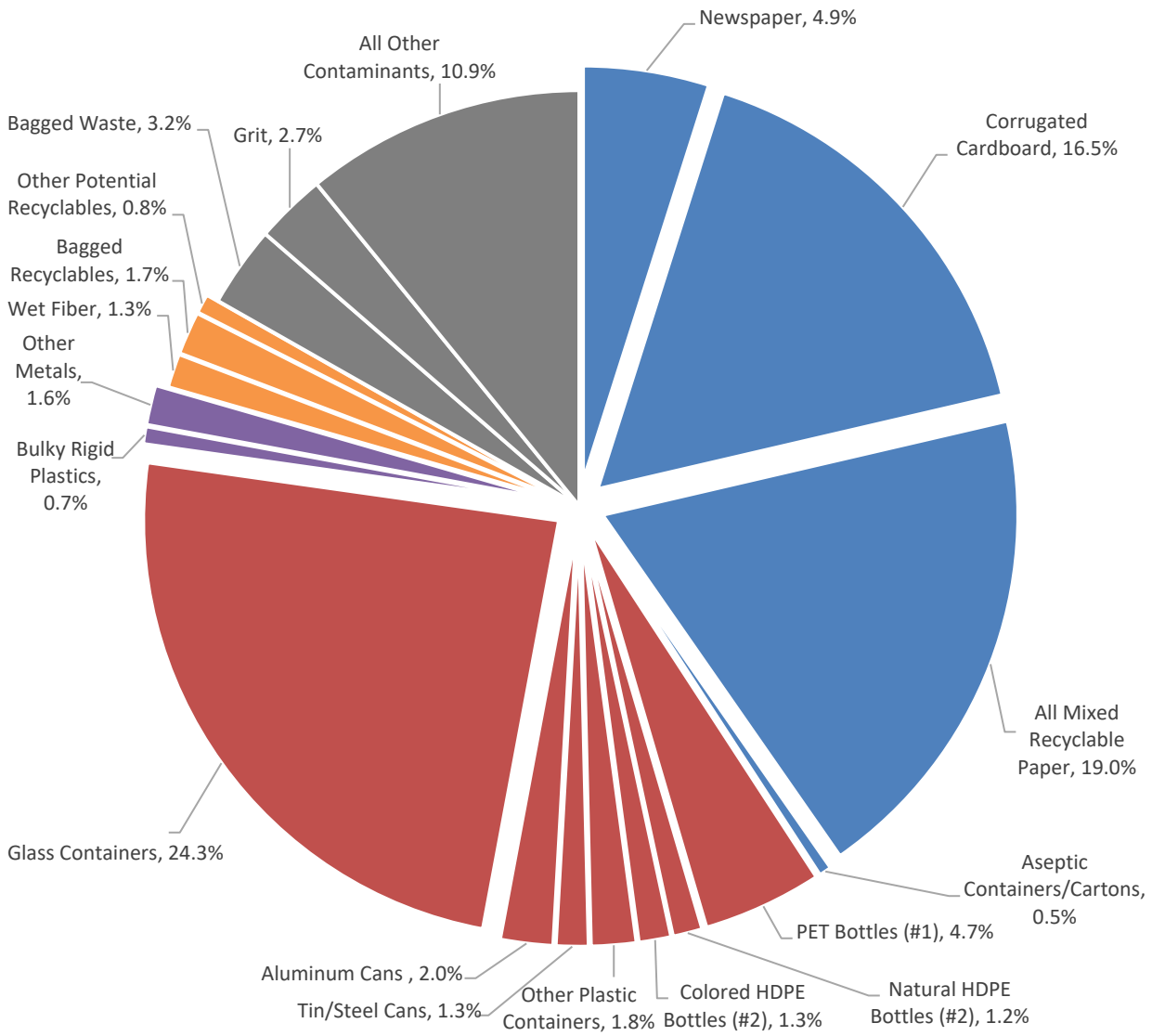
Results

Figure B-17 depicts the weighted average composition of single stream recyclables from South Pasadena. Table B-30 provides the weighted average composition with a 90 percent confidence interval for each material category measured in the RCS. Note: Because only six samples were pulled, the confidence interval is for information purposes only and should not be considered statistically valid. Results for individual samples from South Pasadena are included in Table B-31.

Key findings from South Pasadena results include:

- Approximately 79 percent of the recyclables stream was acceptable material. Corrugated cardboard was lower than the municipal average, but glass containers was higher than the average.
- Approximately 21 percent of the stream was unacceptable material. Yard waste was higher than the municipal average due to bags of yard waste found in the first two samples. Bagged waste was also higher than average.
- A total of 14 bags of recyclables but no tanglers were found in all 6 samples.
- Because Indian Shores' and South Pasadena's recyclables are collected in the same truck it is not possible to determine which material came from which municipality.

Figure B-17: Composition of South Pasadena Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-30: Composition of South Pasadena Single Stream Recyclables (% by Weight)

Material Category	Weighted Average	90% Confidence Interval	
		Lower Bounds	Upper Bounds
Newspaper	**4.9%**	3.1%	6.7%
Corrugated Cardboard	**16.5%**	11.4%	21.6%
Magazines and Catalogs	**2.5%**	1.7%	3.4%
Mixed Recyclable Paper	**16.4%**	12.3%	20.5%
Aseptic Containers/Cartons	**0.5%**	0.4%	0.6%
Recyclable Paper	**40.8%**	**34.7%**	**46.9%**
PET Bottles (#1)	**4.7%**	3.9%	5.4%
Natural HDPE Bottles (#2)	**1.2%**	0.6%	1.7%
Colored HDPE Bottles (#2)	**1.3%**	0.7%	1.8%
Non-Bottle PET Containers (#1)	**1.0%**	0.8%	1.2%
Non-Bottle HDPE Containers (#2)	**0.1%**	0.0%	0.3%
PP Containers (#5)	**0.4%**	0.3%	0.6%
Other Plastic Containers (#3,4,6,7)	**0.2%**	0.0%	0.4%
Tin/Steel Cans	**1.3%**	0.8%	1.7%
Aluminum Cans	**2.0%**	1.8%	2.3%
Glass Containers	**24.3%**	21.9%	26.7%
Recyclable Containers	**36.4%**	**34.9%**	**37.9%**
Bulky Rigid Plastics	**0.7%**	0.2%	1.2%
Ferrous Scrap Metal	**1.4%**	-0.7%	3.4%
Aluminum Foil and Trays	**0.1%**	0.0%	0.1%
Non-Ferrous Scrap Metal	**0.1%**	-0.1%	0.3%
Other Recyclables	**2.2%**	0.3%	4.2%
Wet Corrugated Cardboard	**0.1%**	-0.1%	0.3%
Wet Paper	**1.2%**	0.4%	2.1%
Shredded Paper	**0.2%**	-0.2%	0.6%
Film-Wrapped Paper	**0.3%**	0.0%	0.7%
Bagged Recyclables	**1.7%**	0.6%	2.8%
Full Containers	**0.2%**	-0.1%	0.5%
Potential Recyclables	**3.8%**	2.1%	5.4%
EPS Foam	**0.1%**	0.0%	0.1%
Non-Rigid Plastic Film	**0.8%**	0.5%	1.1%
Bagged Waste	**3.2%**	0.7%	5.6%
Tanglers	**0.0%**	0.0%	0.0%
Small Appliances	**1.9%**	-0.5%	4.2%
Hazardous/Special Waste	**0.0%**	0.0%	0.1%
Non-Alkaline Batteries	**0.0%**	0.0%	0.0%
Yard Waste	**2.9%**	-0.6%	6.4%
Other Contaminants	**5.2%**	4.2%	6.3%
Grit	**2.7%**	1.7%	3.8%
Contaminants	**16.8%**	10.3%	23.2%
Total Acceptable Material	**79.5%**		
Total Unacceptable Material	**20.5%**		
Total	**100.0%**		

Note: Columns may appear to not sum correctly due to rounding.

Table B-31: Individual South Pasadena Sample Results (% by Weight)

Load Description	South Pasadena: SF Resi - Wed 10/14, Route #3606, Truck #300847	South Pasadena: SF Resi - Wed 10/14, Route #3606, Truck #300847	South Pasadena: SF Resi - Wed 10/21, Route #3606, Truck #300847	South Pasadena: SF Resi - Wed 10/21, Route #3606, Truck #300847	South Pasadena: SF Resi - Wed 10/28, Route #3606,Truck #300847	South Pasadena: SF Resi - Wed 10/28, Route #3606, Truck #300847
Material Categories sample #	**29**	**30**	**91**	**92**	**140**	**141**
Newspaper	3.3%	3.7%	7.6%	2.7%	7.7%	4.6%
Corrugated Cardboard	10.2%	19.1%	16.2%	27.0%	10.7%	16.9%
Wet Corrugated Cardboard	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Magazines and Catalogs	3.5%	0.9%	3.5%	1.6%	3.1%	2.7%
Mixed Recyclable Paper	11.3%	14.2%	17.4%	16.8%	25.6%	13.8%
Wet Paper	2.7%	2.1%	0.2%	1.1%	0.1%	0.9%
Shredded Paper	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%
Film-Wrapped Paper	0.0%	0.1%	1.2%	0.4%	0.5%	0.0%
Aseptic Containers/ Cartons	0.6%	0.5%	0.6%	0.3%	0.5%	0.5%
PET Bottles (#1)	3.7%	4.0%	5.4%	6.1%	4.4%	4.6%
Natural HDPE Bottles (#2)	0.2%	0.6%	2.0%	1.3%	1.7%	1.2%
Colored HDPE Bottles (#2)	1.4%	0.3%	2.3%	1.0%	1.4%	1.2%
Non-Bottle PET Containers (#1)	0.9%	0.6%	1.1%	1.1%	1.2%	0.9%
Non-Bottle HDPE Containers (#2)	0.0%	0.2%	0.2%	0.3%	0.3%	0.0%
PP Containers (#5)	0.4%	0.3%	0.8%	0.5%	0.5%	0.2%
Other Plastic Containers (#3,4,6,7)	0.0%	0.2%	0.5%	0.2%	0.3%	0.0%
Bulky Rigid Plastics	1.8%	0.2%	0.4%	0.4%	0.3%	1.0%
EPS Foam	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%
Non-Rigid Plastic Film	0.6%	0.7%	0.5%	0.7%	0.8%	1.4%
Tin/Steel Cans	0.5%	1.5%	2.1%	1.7%	0.9%	1.1%
Ferrous Scrap Metal	0.3%	0.3%	0.0%	0.0%	6.3%	1.3%
Aluminum Cans	2.1%	1.7%	2.0%	2.6%	2.0%	1.9%
Aluminum Foil and Trays	0.1%	0.0%	0.2%	0.0%	0.0%	0.1%
Non-Ferrous Scrap Metal	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Glass Containers	26.2%	24.7%	20.6%	21.4%	23.8%	28.2%
Bagged Waste	2.9%	4.7%	8.0%	0.0%	0.0%	3.5%
Bagged Recyclables	1.8%	1.4%	3.0%	3.5%	0.3%	0.4%
Tanglers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances	7.3%	0.2%	0.0%	0.0%	0.7%	2.5%
Hazardous/Special Waste	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Non-Alkaline Batteries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yard Waste	8.6%	7.8%	0.0%	0.0%	0.0%	0.0%
Full Containers	0.5%	0.0%	0.0%	0.0%	0.0%	0.8%
Other Contaminants	6.0%	5.1%	3.2%	5.7%	4.3%	6.8%
Grit	2.0%	4.8%	1.1%	2.2%	2.6%	3.5%
TOTALS	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Load Weights (tons)	**4.34**		**3.74**		**4.16**	

Note: Columns may appear to not sum correctly due to rounding.

Belleair Bluffs

Background

Population	2,094
Hauler	Waste Management
Recycler	Waste Management
Collection days	Wed
Single stream recycling tonnage (2019 reported)	Single family – 40 Drop-off – n/a Multi-family – n/a Commercial – n/a **Total - 40**

Sampling Schedule

Sector	Wed 10/14
Single family	1

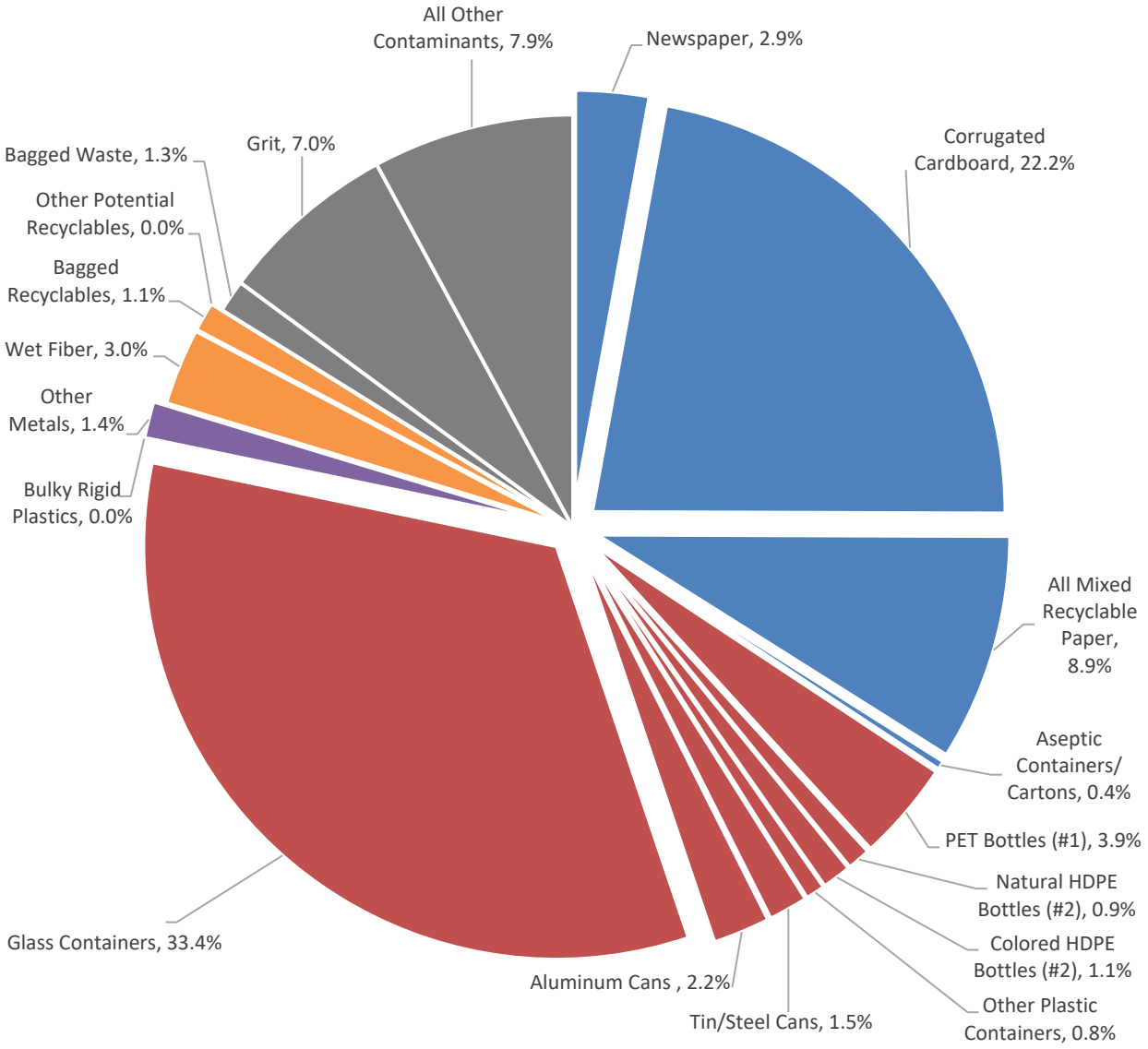
Results

Figure B-18 depicts the composition of the sample of single stream recyclables from Belleair Bluffs. Table B-32 provides the percentage for each material category measured in the sample. Note: Because only one sample was pulled, a confidence interval was not able to be calculated.

Key findings from Belleair Bluffs results include:

- Nearly 80 percent of the sample was acceptable material. Mixed recyclable paper was much lower than the municipal average, but glass containers was much higher than average.
- Approximately 20 percent of the sample was unacceptable material. Grit was higher than the municipal average, possibly due to the high percentage of glass.
- One bag of recyclables and no tanglers were found in the sample.

Figure B-18: Composition of Belleair Bluffs Single Stream Recyclables (% by Weight)



Note: For the purposes of this figure, the following categories have been combined:

- All Mixed Recyclable Paper includes the categories of Magazines and Catalogs and Mixed Recyclable Paper.
- Other Plastic Containers includes the categories of Non-Bottle PET Containers (#1), Non-Bottle HDPE Containers (#2), PP Containers (#5), and Other Plastic Containers (#3, #4, #6, #7).
- Other Metals includes the categories of Ferrous Scrap Metal, Aluminum Foil and Trays, and Non-Ferrous Scrap Metal.
- Wet Fiber includes the categories of Wet Corrugated Cardboard and Wet Paper.
- Other Potential Recyclables includes the categories of Shredded Paper, Film-Wrapped Paper, and Full Containers.
- All Other Contaminants includes the categories of EPS Foam, Non-Rigid Plastic Film, Tanglers, Small Appliances, Hazardous/Special Waste, Non-Alkaline Batteries, Yard Waste, and Other Contaminants.

Table B-32: Composition of Belleair Bluffs Single Stream Recyclables (% by Weight)

Material Category	Belleair Bluffs: SF Resi - Wed 10/14, Route #3AN, Truck #313157
Newspaper	2.9%
Corrugated Cardboard	22.2%
Magazines and Catalogs	1.8%
Mixed Recyclable Paper	7.1%
Aseptic Containers/Cartons	0.4%
Recyclable Paper	**34.3%**
PET Bottles (#1)	3.9%
Natural HDPE Bottles (#2)	0.9%
Colored HDPE Bottles (#2)	1.1%
Non-Bottle PET Containers (#1)	0.4%
Non-Bottle HDPE Containers (#2)	0.0%
PP Containers (#5)	0.4%
Other Plastic Containers (#3,4,6,7)	0.0%
Tin/Steel Cans	1.5%
Aluminum Cans	2.2%
Glass Containers	33.4%
Recyclable Containers	**44.0%**
Bulky Rigid Plastics	0.0%
Ferrous Scrap Metal	1.3%
Aluminum Foil and Trays	0.0%
Non-Ferrous Scrap Metal	0.1%
Other Recyclables	**1.4%**
Wet Corrugated Cardboard	1.1%
Wet Paper	1.9%
Shredded Paper	0.0%
Film-Wrapped Paper	0.0%
Bagged Recyclables	1.1%
Full Containers	0.0%
Potential Recyclables	**4.1%**
EPS Foam	0.7%
Non-Rigid Plastic Film	1.1%
Bagged Waste	1.3%
Tanglers	0.0%
Small Appliances	0.1%
Hazardous/Special Waste	0.0%
Non-Alkaline Batteries	0.0%
Yard Waste	0.0%
Other Contaminants	6.0%
Grit	7.0%
Contaminants	**16.2%**
Total Acceptable Material	**79.7%**
Total Unacceptable Material	**20.3%**
Total	**100.0%**

Note: Columns may appear to not sum correctly due to rounding.