2017-18
Self-Haul Waste Stream Composition Study
Final Report

prepared by
Cascadia Consulting Group, Inc.

In cooperation with
Seattle Public Utilities Staff

December 2018
# Table of Contents

1 **Overview** 1  
Introduction and Background 1  
Seattle’s Self-haul Waste Substream 2  
Study Methodology 2  

2 **Summary of Year 2017-18 Sampling Results** 4  
Overall Self-haul Substream 5  
Results by Self-haul Subpopulation 8  

3 **Self-haul Results Compared to Previous Studies** 10  
Trends in Disposed Self-haul Waste 10  
Changes in Self-haul Waste: 2012 to 2017-18 10  

4 **Self-haul Composition Results by Subpopulation** 12  
Self-haul Composition by Transfer Station 13  
Self-haul Composition by Vehicle Type 18  
Self-haul Composition by Season 22  
Self-haul Composition by Generator Type, by Site 30  

5 **Self-haul Composition by Generator Subtype** 37  
Generator Subtype Findings 37  

**Appendix A. Waste Component Categories** 48  
Waste Components 48  
Changes to Waste Component Categories 56  

**Appendix B. Sampling Methodology** 66  
Overview 66  
Substream Definition 66  
Sample Allocation 67  
Sampling Calendar 67  
Hauler and Transfer Station Participation 68  
Load Selection 68  
Field Procedures 69  

**Appendix C. Comments on Monthly Sampling Events** 71  
September 2017 71
<table>
<thead>
<tr>
<th>Month</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2017</td>
<td>72</td>
</tr>
<tr>
<td>January 2018</td>
<td>73</td>
</tr>
<tr>
<td>March 2018</td>
<td>75</td>
</tr>
<tr>
<td>May 2018</td>
<td>76</td>
</tr>
<tr>
<td>July 2018</td>
<td>78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix D.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Composition Calculations</td>
<td>80</td>
</tr>
<tr>
<td>Composition Calculations</td>
<td>80</td>
</tr>
<tr>
<td>Weighted Averages</td>
<td>81</td>
</tr>
<tr>
<td>Comparison Calculations</td>
<td>86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix E.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year-to-Year Comparison Calculations</td>
<td>87</td>
</tr>
<tr>
<td>Background</td>
<td>87</td>
</tr>
<tr>
<td>Statistical Considerations</td>
<td>87</td>
</tr>
<tr>
<td>Interpreting the Calculation Results</td>
<td>89</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix F.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Forms</td>
<td>90</td>
</tr>
</tbody>
</table>
Table of Tables

Table 1. Samples per Study Period, by Substream .................................................. 1
Table 2. Changes to Waste Component Categories Since 2012 .................................. 4
Table 3. Top Ten Components: Overall Self-haul (August 1, 2017 to July 31, 2018) .......... 6
Table 4. Composition by Weight: Overall Self-haul (August 1, 2017 to July 31, 2018) .......... 7
Table 5. Largest Waste Components: by Self-haul Subpopulation (August 1, 2017 to July 31, 2018) .................................................. 9
Table 6. Changes in Self-haul Waste: 2012 to 2017-18 .............................................. 11
Table 7. Description of Samples for each Self-haul Subpopulation (August 1, 2017 to July 31, 2018) .............................................................................. 12
Table 8. Self-haul Trips, by Residential and Non-residential Generators (August 1, 2017 to July 31, 2018) ...................................................... 13
Table 9. Top Ten Components: North Recycling and Disposal Station (August 1, 2017 to July 31, 2018) ...................................................... 14
Table 10. Top Ten Components: South Recycling and Disposal Station (August 1, 2017 to July 31, 2018) ...................................................... 15
Table 11. Composition by Weight: NRDS (August 1, 2017 to July 31, 2018) ................. 16
Table 12. Composition by Weight: SRDS (August 1, 2017 to July 31, 2018) ................. 17
Table 13. Top Ten Components: Passenger Vehicles (August 1, 2017 to July 31, 2018) .... 19
Table 14. Top Ten Components: Trucks (August 1, 2017 to July 31, 2018) .................. 19
Table 15. Composition by Weight: Passenger Vehicles (August 1, 2017 to July 31, 2018) .... 20
Table 16. Composition by Weight: Trucks (August 1, 2017 to July 31, 2018) ................. 21
Table 17. Top Ten Components: Spring (March, April, May 2018) ................................ 23
Table 18. Top Ten Components: Summer (July and August 2017, June 2018) ............... 23
Table 19. Top Ten Components: Autumn (September, October, November 2017) .......... 24
Table 20. Top Ten Components: Winter (December 2017 and January and February 2018) .... 25
Table 21. Composition by Weight: Spring (March, April, May 2018) ................................ 26
Table 22. Composition by Weight: Summer (July and August 2017, June 2018) ............... 27
Table 23. Composition by Weight: Autumn (September, October, November 2017) ........ 28
Table 24. Composition by Weight: Winter (December 2017 and January and February 2018) .... 29
Table 25. Top Ten Components: Residential at NRDS (August 1, 2017 to July 31, 2018) .... 31
Table 26. Top Ten Components: Residential at SRDS (August 1, 2017 to July 31, 2018) .... 31
Table 27. Top Ten Components: Non-residential at NRDS (August 1, 2017 to July 31, 2018) .. 32
Table 28. Top Ten Components: Non-residential at SRDS (August 1, 2017 to July 31, 2018) .. 32
Table 29. Composition by Weight: Residential at NRDS (August 1, 2017 to July 31, 2018) .... 33
Table 30. Composition by Weight: Residential at SRDS (August 1, 2017 to July 31, 2018) .... 34
Table 31. Composition by Weight: Non-Residential at NRDS (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................................35
Table 32. Composition by Weight: Non-Residential at SRDS (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................................36
Table 33. Top Ten Components: Construction Contractors (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................38
Table 34. Composition by Weight: Construction Contractors (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................39
Table 35. Top Ten Components: Charities and Thrift Stores (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................40
Table 36. Composition by Weight: Charities and Thrift Stores (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................41
Table 37. Top Ten Components: Junk Haulers (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................................42
Table 38. Composition by Weight: Junk Haulers (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................................43
Table 39. Top Ten Components: Seattle Housing Authority (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................44
Table 40. Composition by Weight: Seattle Housing Authority (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................45
Table 41. Top Ten Components: University of Washington (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................46
Table 42. Composition by Weight: University of Washington (August 1, 2017 to July 31, 2018) ..................................................................................................................................................................47
Table 43. Changes to Waste Component Categories, 1988 to present ..............................................................................................................................................................................................................57
Table 44. Sampling Calendar .................................................................................................................................................................................................................................................................68
Table 45. Distribution of Sampling Days .................................................................................................................................................................................................................................................................68
Table 46. SIC Codes, by Business Type .................................................................................................................................................................................................................................................................70
Table 47. Summary of Planned vs. Actual Samples Completed by Date, September 2017 ..............................................................................................................................................................................................................71
Table 48. Summary of Planned vs. Actual Samples Completed by Generator Category, September 2017 ..................................................................................................................................................................72
Table 49. Summary of Planned vs. Actual Samples Completed by Date, November 2017 ............................................................................................................................................................................................................72
Table 50. Summary of Planned vs. Actual Samples Completed by Generator Category, November 2017 ..................................................................................................................................................................73
Table 51. Summary of Overall Sampling Progress, Through November 2017 ....................................................................................................................................................................................................................73
Table 52. Summary of Planned vs. Actual Samples Completed by Date, January 2018 .............................................................................................................................................................................................................74
Table 53. Summary of Actual Samples Completed by Generator Category, January 2018 ............................................................................................................................................................................................................74
Table 54. Summary of Overall Sampling Progress, Through January 2018 ....................................................................................................................................................................................................................74
Table 55. Summary of Planned vs. Actual Samples Completed by Date, March 2018 ............................................................................................................................................................................................................75
Table 56. Summary of Actual Samples Completed by Generator Category, March 2018 ............................................................................................................................................................................................................75
Table 57. Summary of Overall Sampling Progress, Through March 2018 ....................................................................................................................................................................................................................76
Table 58. Summary of Planned vs. Actual Samples Completed by Date, May 2018 ............................................................................................................................................................................................................77
Table 59. Summary of Actual Samples Completed by Generator Category, May 2018 ............................................................................................................................................................................................................77
Table 60. Summary of Overall Sampling Progress, Through May 2018 ....................................................................................................................................................................................................................78
Table 61. Summary of Planned vs. Actual Samples Completed by Date, July 2018 ............................................................................................................................................................................................................78
Table 62. Summary of Actual Samples Completed Generator Category, July 2018 ............79
Table 63. Summary of Overall Sampling Progress, Through July 2018............................79
Table 64. Weighting Percentages: Overall Self Haul......................................................82
Table 65. Weighting Percentages: Self-haul at the NRDS...........................................83
Table 66. Weighting Percentages: Self-haul at the SRDS...........................................83
Table 67. Weighting Percentages: Self-haul Passenger Vehicles ................................84
Table 68. Weighting Percentages: Self-haul Trucks......................................................84
Table 69. Weighting Percentages: Self-haul in Spring..................................................85
Table 70. Weighting Percentages: Self-haul in Summer .............................................85
Table 71. Weighting Percentages: Self-haul in Autumn................................................85
Table 72. Weighting Percentages: Self-haul in Winter..................................................86
Table 73. Changes in Self-Haul Waste Composition: 2012 to 2017-18 .......................89

Table of Figures

Figure 1. Self-haul Overview of Composition Estimates: Overall Self-haul (August 1, 2017 to July 31, 2018) .......................................................... 5
Figure 2. Changes in Self-haul Disposed Tons, 1988/89 to 2017-18...............................10
Figure 3. Composition Summary: by Transfer Station (August 1, 2017 to July 31, 2018) .........14
Figure 4. Composition Summary: by Vehicle Type (August 1, 2017 to July 31, 2018) ..........18
Figure 5. Composition Summary: by Season .............................................................22
Figure 6. Composition Summary: by Generator Type, by Site (August 1, 2017 to July 31, 2018) ..........................................................30
Figure 7. Composition Summary: Construction Contractors ......................................37
Figure 8. Composition Summary: Charities and Thrift Stores ....................................40
Figure 9. Composition Summary: Junk Haulers ...........................................................42
Figure 10. Composition Summary: Seattle Housing Authority ....................................44
Figure 11. Composition Summary: University of Washington .....................................46
Figure 12. Self-haul Subpopulations, by Generator Type and Service Area ..................66
1 Overview

Introduction and Background

Seattle Public Utilities (SPU) provides for the collection, transfer, and disposal of municipal solid waste (MSW) from within the City of Seattle. As part of this responsibility, SPU designs and implements programs that help the City meet its goal to achieve a 60% recycling rate by 2015, and 70% recycling rate by 2025. To better understand the types and quantities of MSW disposed and to assess the city’s recycling potential, SPU has conducted composition studies every two years since 1988. The 1988 study included the city’s entire waste stream, and each subsequent study has analyzed one or two of the city’s three waste streams (residential, commercial, and self-haul) so that every stream is sampled at least once every four years. In 2017-18, the City limited the study to the examination of self-hauled waste. Traditionally the commercial stream and the self-haul stream studies are completed concurrently, however the City elected to begin the commercial study in 2016 while the North Recycling and Disposal Station (NRDS) was still closed and postponed the self-haul study until the NRDS station had been reopened for several months. This wait allowed the self-haul tonnage and traffic counts to stabilize at NRDS before the field work commenced. Table 1 shows the number of waste samples sorted from these three waste streams from 1988 through the current study in 2017-18.

Table 1. Samples per Study Period, by Substream

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial</th>
<th>Residential</th>
<th>Self-Haul</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988-89</td>
<td>121</td>
<td>212</td>
<td>217</td>
<td>550</td>
</tr>
<tr>
<td>1990</td>
<td>0</td>
<td>114</td>
<td>203</td>
<td>317</td>
</tr>
<tr>
<td>1992</td>
<td>251</td>
<td>0</td>
<td>197</td>
<td>448</td>
</tr>
<tr>
<td>1994-95</td>
<td>0</td>
<td>368</td>
<td>0</td>
<td>368</td>
</tr>
<tr>
<td>1996</td>
<td>348</td>
<td>0</td>
<td>199</td>
<td>547</td>
</tr>
<tr>
<td>1998-99</td>
<td>0</td>
<td>360</td>
<td>0</td>
<td>360</td>
</tr>
<tr>
<td>2000</td>
<td>347</td>
<td>0</td>
<td>200</td>
<td>547</td>
</tr>
<tr>
<td>2002</td>
<td>0</td>
<td>309</td>
<td>0</td>
<td>309</td>
</tr>
<tr>
<td>2004</td>
<td>270</td>
<td>0</td>
<td>216</td>
<td>486</td>
</tr>
<tr>
<td>2006</td>
<td>0</td>
<td>356</td>
<td>0</td>
<td>356</td>
</tr>
<tr>
<td>2008</td>
<td>271</td>
<td>0</td>
<td>216</td>
<td>487</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>361</td>
<td>0</td>
<td>361</td>
</tr>
<tr>
<td>2012</td>
<td>259</td>
<td>0</td>
<td>226</td>
<td>476</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>362</td>
<td>0</td>
<td>362</td>
</tr>
<tr>
<td>2016</td>
<td>292</td>
<td>0</td>
<td>0</td>
<td>292</td>
</tr>
<tr>
<td>2017-18</td>
<td>0</td>
<td>0</td>
<td>223</td>
<td>223</td>
</tr>
</tbody>
</table>

All of these studies share the following three objectives:

- Obtain information about the City’s residential, commercial, and self-haul waste substreams in order to estimate the recycling potential for each;
- Understand differences among these three substreams so that targeted recycling programs can be designed, implemented, and monitored for each; and
- Establish a baseline for continued, long-term measurement of system performance.
This report, which consists of six sections, presents the results of the 2017/18 self-haul waste study. This section, Section 1, briefly introduces the project and the methodology, and Section 2 summarizes the study’s findings. In Section 3, the 2017-18 self-haul findings are compared with those from the previous study periods. Detailed results of the 2017-18 self-haul waste composition study are presented in Section 4 and Section 5. Section 6 follows the main body of the report and it includes appendices detailing the material definitions, study methodology, comments on sampling events, waste composition calculations, year-to-year comparison calculations, and copies of field forms.

Seattle’s Self-haul Waste Substream

For any specific geographic area, the total waste stream is composed of various substreams. A substream is determined by the particular generation, collection, or composition characteristics that make it a unique portion of the total waste stream. This study targets the self-haul substream.1

The self-haul substream is made up of waste that is: a) generated at residences as well as businesses and institutions; and, b) hauled by the household or business that generated the waste or a non-franchised hauler. All self-haul waste included in the study is disposed at one of two City-owned disposal stations: North or South Recycling and Disposal Stations (NRDS or SRDS). The self-haul stream includes many large institutions that haul their own waste including the University of Washington and the Seattle Housing Authority.

Study Methodology

The following table provides an overview of the 2017-18 study methodology. As shown, there were four major steps involved in conducting this waste composition study. The steps are presented according to the order in which they occurred during the study. Please see the Sampling Methodology appendix for a detailed description of the methodology.

1 The residential and commercial substreams were not included in this study. For the most recent analysis of Seattle’s residential waste stream, please see the 2014 Residential Waste Composition Study Final Report prepared for the Seattle Public Utilities by Cascadia Consulting Group, Inc. For the most recent analysis of Seattle’s commercial waste stream, please see the 2016 Commercial Waste Stream Composition Study prepared for the Seattle Public Utilities by Cascadia Consulting Group, Inc.
Step 1: Develop Sampling Plan

- Self-haul samples were evenly allocated to each Recycling and Disposal Station, 108 to the North and 108 to the South.
- A sampling schedule included 12 days of sampling from August 1, 2017 to July 31, 2018. Sampling days were randomly selected to assure a representative distribution across the days of the week and weeks of the month.
- The allocation included 168 randomly selected loads and 48 loads from five targeted generator subtypes. The targeted generator subtypes were: construction contractors, charity/thrift stores, junk haulers, University of Washington, and Seattle Housing Authority

Step 2: Schedule and Collect Waste Samples

- The randomly selected loads were systematically selected for sampling using a pre-determined frequency based on expected transfer station traffic for each sampling day.
- Every vehicle from the targeted generator subtypes was selected for sampling until the daily sample target was met.
- In cases when a randomly selected load was from one of the generator subtypes selected, the sample was used to meet the overall and the generator subtype targets.

Step 3: Capture and Sort Samples

- The sampling crew supervisor worked with selected self-haul drivers to unload their waste onto a tarpaulin. Samples from large (greater than 250 pounds) self-haul loads were either sorted in their entirety or the sampling crew selected a 250-pound cross section of the load to sort. If the load was less than 250 pounds, then the next vehicle of the same generator group (residential or non-residential) was also selected so that the weight of the two samples together equaled at least 250 pounds.
- For this study, a total of 223 self-haul samples were sorted into 115 distinct component categories, such as office paper or PET bottles. Since the 2012 study, three component categories were added to the list of components. Please see Table 2 for an overview of how component categories have changed.
Step 4: Analyze Data and Prepare Report

- Following each sampling event, all sorting data were entered into a customized database and reviewed for data entry errors.
- At the conclusion of the study, the overall and subpopulation waste composition estimates were calculated by aggregating sampling data from the randomly selected vehicles using a weighted average procedure. SPU provided 2017-18 waste tonnage data estimates that were used to perform final calculations. The weighted average procedure is detailed in Waste Composition Calculations.
- Waste composition estimates were calculated for the targeted generator subtypes using the samples collected from the targeted subtypes using a weighted average procedure when tonnage data for the group was available. SPU provided 2017-18 waste tonnage data estimates that were used to perform final calculations.
- Once the data were analyzed, this accompanying report was prepared.

1.1.1 Changes in Waste Component Categories

Several changes were made to the 2012 list of components for the 2017-18 study. These changes were made to reflect changes in the waste stream, recycling industry, and disposal regulations; and to increase material specificity and worker safety.

A total of 115 components were included in this study, representing two additional components from the previous 2012 study, and there was a net increase of 23 components compared to the list of 92 that was used in the 2008 study. As detailed in Table 2, the increase since 2012 is due to one material type from the 2012 list that was separated into three material types. For a description of all the changes to the component list, reference Table 43 in Waste Component Categories.

<table>
<thead>
<tr>
<th>2012 Material Type</th>
<th>2017-18 Material Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other cleaners/chemicals</td>
<td>Pharmaceuticals and vitamins</td>
</tr>
<tr>
<td></td>
<td>Personal care/cosmetics</td>
</tr>
<tr>
<td></td>
<td>Other cleaners/chemicals</td>
</tr>
</tbody>
</table>

2 Summary of Year 2017-18 Sampling Results

In 2017-18, the waste samples were sorted into ten broad material categories: Paper, Plastic, Glass, Metal, Compostable Organics, Other Organics, Furniture, Appliances & Electronics, Construction Debris, Potential Harmful Waste, And Fines & Miscellaneous Materials. Each broad material category was then sorted into various components such as newspaper or PET plastic bottles. A total of 115 components were included in this study.

Composition results are presented in the following order in this report. First, a pie chart reflects the composition percentages of the ten broad material categories. A table that lists the top ten components by weight follows the pie charts. Lastly, a table depicting the full composition...
results of all 115 components is presented.\(^2\) Weighted averages were used to calculate composition estimates for the self-haul substream. Please see Waste Composition Calculations for more detail regarding these calculations.

**Overall Self-haul Substream**

Figure 1 summarizes the composition results for the overall self-haul substream. As shown, **Construction Debris** accounted for 62% of the self-hauled substream, followed by **Furniture, Appliances & Electronics** with 12%.

![Composition of self-haul waste](image)

Figure 1. Self-haul Overview of Composition Estimates: Overall Self-haul (August 1, 2017 to July 31, 2018)

A total of 182 randomly selected self-haul loads were sampled in 2017-18. The self-haul substream disposed of 97,863 tons of waste during the 2017-18 study year, from August 1, 2017 through July 31, 2018. The composition estimates for this substream were applied to the 97,863 tons to estimate the amount of waste disposed for each component category. Table 3 lists the top ten components disposed by the self-haul substream. Together, these ten components accounted for nearly 60% of the entire self-haul tonnage. **Clean dimension lumber, new painted wood, and contaminated wood** are the three largest components of this substream. The composition percentages, by weight, of each component in the self-haul substream are listed in Table 4.

\(^2\) All waste composition results were derived using a 90% confidence level. This means that there is a 90% certainty that the actual composition is within the calculated range. In charts throughout this report, the values graphed represent the mean component percentage, not the range.
### Table 3. Top Ten Components: Overall Self-haul  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>9.7%</td>
<td>9.7%</td>
<td>9,525</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>9.1%</td>
<td>18.8%</td>
<td>8,883</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>8.3%</td>
<td>27.1%</td>
<td>8,150</td>
</tr>
<tr>
<td>Furniture</td>
<td>7.6%</td>
<td>34.8%</td>
<td>7,480</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>5.8%</td>
<td>40.6%</td>
<td>5,686</td>
</tr>
<tr>
<td>Carpet</td>
<td>5.2%</td>
<td>45.8%</td>
<td>5,100</td>
</tr>
<tr>
<td>Other Construction</td>
<td>4.1%</td>
<td>49.9%</td>
<td>4,007</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.5%</td>
<td>53.3%</td>
<td>3,379</td>
</tr>
<tr>
<td>Mattresses</td>
<td>3.3%</td>
<td>56.7%</td>
<td>3,266</td>
</tr>
<tr>
<td>Other Treated Wood</td>
<td>3.3%</td>
<td>59.9%</td>
<td>3,194</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59.9%</strong></td>
<td></td>
<td><strong>58,669</strong></td>
</tr>
</tbody>
</table>
Table 4. Composition by Weight: Overall Self-haul  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
<th>Material Percent</th>
<th>Est. Tons</th>
<th>Material Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.4%</td>
<td>3,325</td>
<td>Furniture, Appliances, and Electronics</td>
<td>12.0%</td>
<td>11,703</td>
<td></td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>18</td>
<td>Wood</td>
<td>0.4%</td>
<td>1,956</td>
<td>3.3%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.0%</td>
<td>1,966</td>
<td>Mattresses</td>
<td>0.4%</td>
<td>3,266</td>
<td></td>
</tr>
<tr>
<td>Waxced</td>
<td>0.0%</td>
<td>14</td>
<td>Small Appliances</td>
<td>0.0%</td>
<td>417</td>
<td></td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>32</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>27</td>
<td>Audio/Visual Equipment</td>
<td>0.2%</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.6%</td>
<td>561</td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.0%</td>
<td>4</td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>100</td>
<td>Other Electronics</td>
<td>0.4%</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>25</td>
<td>Construction Debris</td>
<td>62.0%</td>
<td>60,645</td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.6%</td>
<td>591</td>
<td>Clean Dimension Lumber</td>
<td>9.7%</td>
<td>9,525</td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>6.6%</td>
<td>6,681</td>
<td>Crates</td>
<td>0.1%</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>52</td>
<td>Other Untreated Wood</td>
<td>0.3%</td>
<td>260</td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Bottles</td>
<td>0.0%</td>
<td>15</td>
<td>New Painted Wood</td>
<td>9.1%</td>
<td>8,883</td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>14</td>
<td>Old Painted Wood</td>
<td>2.3%</td>
<td>2,270</td>
<td></td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>5</td>
<td>Creosote-treated Wood</td>
<td>0.9%</td>
<td>889</td>
<td></td>
</tr>
<tr>
<td>Tubes</td>
<td>0.3%</td>
<td>336</td>
<td>Other Treated Wood</td>
<td>3.3%</td>
<td>3,194</td>
<td></td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.9%</td>
<td>875</td>
<td>Contaminated Wood</td>
<td>8.3%</td>
<td>8,150</td>
<td></td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>12</td>
<td>New Gypsum Scrap</td>
<td>1.0%</td>
<td>962</td>
<td></td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.2%</td>
<td>185</td>
<td>Demo Gypsum Scrap</td>
<td>2.7%</td>
<td>2,669</td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>15</td>
<td>Carpet</td>
<td>5.2%</td>
<td>5,100</td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>15</td>
<td>Felt Carpet Pad</td>
<td>0.5%</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.1%</td>
<td>54</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>12</td>
<td>Concrete</td>
<td>1.7%</td>
<td>1,691</td>
<td></td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>97</td>
<td>Rock</td>
<td>0.0%</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>82</td>
<td>Asphalt Paving</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other Film</td>
<td>0.5%</td>
<td>517</td>
<td>Other Film</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.1%</td>
<td>132</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.3%</td>
<td>281</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.1%</td>
<td>3,005</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>1.0%</td>
<td>988</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>1.7%</td>
<td>1,677</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>58</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>29</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.1%</td>
<td>135</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>36</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>3</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>1</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.4%</td>
<td>429</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0</td>
<td>Other Aggregates</td>
<td>0.4%</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>1.0%</td>
<td>994</td>
<td>Oil-based Paint/Thinner</td>
<td>0.4%</td>
<td>371</td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>6.1%</td>
<td>5,945</td>
<td>Cautic Cleaners</td>
<td>0.0%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>21</td>
<td>Pesticides/Herbicides</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>18</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>0</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>93</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>20</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>12</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.4%</td>
<td>2,378</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.5%</td>
<td>3,379</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>2.5%</td>
<td>2,453</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.7%</td>
<td>637</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Prunings</td>
<td>0.1%</td>
<td>73</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>1.8%</td>
<td>1,742</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Organics</td>
<td>2.7%</td>
<td>2,595</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.4%</td>
<td>1,365</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>0.9%</td>
<td>882</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Disposables Diapers</td>
<td>0.1%</td>
<td>87</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>44</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.2%</td>
<td>204</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>13</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td>97,863</td>
<td>Other Potentially Hazardous Waste</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.*
Results by Self-haul Subpopulation

Waste composition estimates were calculated for the various subpopulations of the self-haul substream, including: transfer station, vehicle type, season, and generator type by transfer station.

The largest components (each accounting for more than 5% of the total tonnage) for each subpopulation are shown in Table 5. Carpet, furniture, clean dimension lumber, clean engineered wood, new painted wood, and contaminated wood were among the most prevalent materials in most self-haul subpopulations. When the data are reported by subpopulation, the sample size for each analysis is smaller, which means that the calculations are subject to a more substantial range of error than calculations for the overall self-haul stream.

Please see Self-haul Composition Results by Subpopulation for more detail regarding the self-haul substream.
Table 5. Largest Waste Components: by Self-haul Subpopulation
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Metal</th>
<th>Organics</th>
<th>Appliances</th>
<th>CDL Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transfer Station</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vehicle Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Season</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autumn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Generator Type, by Site</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential, NRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential, SRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-residential, NRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-residential, SRDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall Self-Haul</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.6%</td>
<td></td>
<td>9.7%</td>
<td>5.8%</td>
<td></td>
<td>9.1%</td>
<td>8.3%</td>
<td></td>
<td>5.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Self-haul Results Compared to Previous Studies

In this section, self-haul results from the 2017-18 study period are compared with the results of the 1988/89, 1990, 1992, 1996, 2000, 2004, 2008, and 2012 studies. Both composition percentages and the total amount of waste disposed of each broad material category were analyzed for the self-haul substream. All 2017-18 composition data in this section is based only on the randomly selected samples.3

Trends in Disposed Self-haul Waste

Changes in the quantity of disposed self-haul waste over time are depicted in Figure 2. Construction Debris show the largest increase in tonnage from the prior study period, up more than an estimated 22,300 tons. The increase in Construction Debris is likely tied to the increase in construction activity in the years since 2012; 2012 was near the bottom of the recession related construction reduction while the 2017-18 study coincided with one of the busiest construction periods in Seattle’s history. Other Materials saw the next largest increase, up an estimated 10,700 tons from 2012. Paper and Organics declined by an estimated 6,800 and 2,700 tons, respectively.

Figure 2. Changes in Self-haul Disposed Tons, 1988/89 to 2017-18

Changes in Self-haul Waste: 2012 to 2017-18

In Table 6, bolded broad material categories experienced significant differences in composition percentages between the 2012 and 2017-18 study periods. As shown, Paper and Organics displayed a significant change. Paper fell 11 percentage points, from an estimated 10,147 tons in 2012 to 3,325 in 2017-18, while organics dropped from 5,132 tons in 2012 to 2,453 in 2017-18.

3 The composition percentages used to perform statistical tests were calculated using unweighted averages. Please see Year-to-Year Comparison Calculations for more detail.
Table 6. Changes in Self-haul Waste: 2012 to 2017-18

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent 2012</th>
<th>Percent 2017/18</th>
<th>Change in Composition %</th>
<th>Disposed Tons 2012</th>
<th>Disposed Tons 2017/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>14.4%</td>
<td>3.4%</td>
<td>-11.0%</td>
<td>10,147</td>
<td>3,325</td>
</tr>
<tr>
<td>Plastic</td>
<td>7.3%</td>
<td>6.8%</td>
<td>-0.5%</td>
<td>5,155</td>
<td>6,681</td>
</tr>
<tr>
<td>Glass</td>
<td>2.3%</td>
<td>1.7%</td>
<td>-0.6%</td>
<td>1,620</td>
<td>1,677</td>
</tr>
<tr>
<td>Metal</td>
<td>3.9%</td>
<td>6.1%</td>
<td>2.1%</td>
<td>2,781</td>
<td>5,946</td>
</tr>
<tr>
<td>Organics</td>
<td>7.3%</td>
<td>2.5%</td>
<td>-4.8%</td>
<td>5,132</td>
<td>2,453</td>
</tr>
<tr>
<td>Other Materials</td>
<td>16.2%</td>
<td>22.6%</td>
<td>6.3%</td>
<td>11,438</td>
<td>22,094</td>
</tr>
<tr>
<td>CDL Wastes</td>
<td>45.4%</td>
<td>55.5%</td>
<td>10.1%</td>
<td>31,993</td>
<td>54,283</td>
</tr>
<tr>
<td>Hazardous</td>
<td>3.1%</td>
<td>1.4%</td>
<td>-1.7%</td>
<td>2,208</td>
<td>1,405</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td><strong>70,474</strong></td>
<td><strong>97,863</strong></td>
</tr>
</tbody>
</table>

* Bold type indicates statistically significant changes.
4 Self-haul Composition Results by Subpopulation

A total of 223 self-haul loads were sampled from August 1, 2017 to July 31, 2018. Many of these samples were from targeted loads and were not randomly selected. The composition data in this section is calculated based on the sampling data from the randomly selected loads. Descriptive data about samples from each subpopulation are summarized in Table 7. As shown, many of the analyses are based on a very small number of samples. Consequently, these calculations are subject to a relatively wide margin of error. The sampling plan was designed to provide statistically robust results for the overall self-haul substream. The composition results by subpopulation are provided as rough estimates only.

Table 7. Description of Samples for each Self-haul Subpopulation
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Sample Count</th>
<th>Total Sample Weight</th>
<th>Average Sample Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transfer Station</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NRDS</td>
<td>111</td>
<td>28,827.6</td>
<td>259.7</td>
</tr>
<tr>
<td>SRDS</td>
<td>112</td>
<td>29,071.3</td>
<td>259.6</td>
</tr>
<tr>
<td><strong>Vehicle Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicle</td>
<td>21</td>
<td>4,980.0</td>
<td>237.1</td>
</tr>
<tr>
<td>Truck</td>
<td>202</td>
<td>52,919.0</td>
<td>262.0</td>
</tr>
<tr>
<td><strong>Season</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>72</td>
<td>17,629.8</td>
<td>244.9</td>
</tr>
<tr>
<td>Summer</td>
<td>37</td>
<td>10,913.8</td>
<td>295.0</td>
</tr>
<tr>
<td>Autumn</td>
<td>70</td>
<td>18,905.1</td>
<td>270.1</td>
</tr>
<tr>
<td>Winter</td>
<td>44</td>
<td>10,450.3</td>
<td>237.5</td>
</tr>
<tr>
<td><strong>Generator Type, by Site</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential, NRDS</td>
<td>73</td>
<td>18,430.1</td>
<td>252.5</td>
</tr>
<tr>
<td>Residential, SRDS</td>
<td>71</td>
<td>18,056.9</td>
<td>254.3</td>
</tr>
<tr>
<td>Non-Residential, NRDS</td>
<td>38</td>
<td>10,397.5</td>
<td>273.6</td>
</tr>
<tr>
<td>Non-Residential, SRDS</td>
<td>41</td>
<td>11,014.4</td>
<td>268.6</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>223</td>
<td>57,899.0</td>
<td>259.6</td>
</tr>
</tbody>
</table>

Seattle Public Utilities provided total disposal quantities (in tons) for the study period for the following waste populations: 1) total self-haul, 2) self-haul by vehicle type, 3) self-haul by season, and 4) self-haul by transfer station.

Table 8 illustrates the split between self-haul trips by residential and non-residential generators. The vehicle trip counts collected during 2017 and 2018 sampling days were applied to the annual self-haul trips. As shown in the table, approximately 75% of 2017-18 self-haul trips were

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4 The self-haul substream is waste that is: a) generated at residences as well as businesses and institutions; and b) hauled by the household or business that generated the waste or a non-franchised hauler. Self-haul residential and non-residential are defined by the hauling entity: self-haul non-residential is hauled by a commercial enterprise (like a landscaper or contractor), and self-haul residential is hauled by a resident from his or her home.

residential, while the remaining 25% were from non-residential sources. About 64% of self-haul trips were delivered by residential self-haul trucks in during the study period. Non-residential self-haul trucks accounted for approximately 21% of self-haul trips. SPU does not ask customers at the transfer stations to identify as residential or non-residential and the 2017-18 study did not include a comprehensive vehicle survey that collected the net weights from a representative number of self-haul vehicles. Based on the sample data we can estimate the proportion of customers that are residential vs. non-residential but without the net weight data we cannot estimate the proportion of tons from residential vs. non-residential customers.

Table 8. Self-haul Trips, by Residential and Non-residential Generators
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Trips</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicles</td>
<td>24,406</td>
<td>11.7%</td>
<td></td>
</tr>
<tr>
<td>Self-haul Trucks</td>
<td>132,880</td>
<td>63.6%</td>
<td></td>
</tr>
<tr>
<td>Residential Subtotal</td>
<td>157,286</td>
<td>75.3%</td>
<td></td>
</tr>
<tr>
<td>Non-residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicles</td>
<td>8,016</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Self-haul Trucks</td>
<td>43,647</td>
<td>20.9%</td>
<td></td>
</tr>
<tr>
<td>Non-residential Subtotal</td>
<td>51,663</td>
<td>24.7%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>208,949</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

In the following subsections, self-haul waste composition results are presented by transfer station, vehicle type, season, and generator type by site. Results are depicted in three ways: a pie chart reflects composition by the nine broad material categories; next, a table lists the top ten components, by weight; and finally, the full composition results are presented in a detailed table. Subsections 4.1.3, 4.1.6, 4.1.11, and 4.1.14 compare the composition results from the subpopulations presented in the preceding subsections.

Self-haul Composition by Transfer Station

This subsection examines the composition of wastes self-hauled to the North and South Recycling and Disposal Stations (NRDS and SRDS). Figure 3 summarizes the results on a broad material category level. **Construction Debris** composed the largest material category of the waste hauled to both of the transfer stations, followed by **Furniture, Appliances, & Electronics**. **Construction Debris** include components such as *clean dimension lumber, new painted wood,* and *carpet*. **Furniture, Appliances, & Electronics** includes *furniture, mattresses,* and *cell phones*. The following subsections examine self-hauled waste from each transfer station in more detail.

**Material Designations**
Throughout this report the Material Classes (e.g. *Paper, Plastic, Glass...*) are bolded and capitalized, while specific material types such as *carpet* and *furniture* are italicized.
### 4.1.1 North Recycling and Disposal Station (NRDS)

A total of 90 samples were taken from loads that were delivered to the NRDS during the 2017-18 study year. Self-haul vehicles delivered 36,221 tons of waste to the NRDS from August 2017 to July 2018. The composition estimates for this subpopulation were applied to the 36,221 tons to estimate the amount of waste disposed for each component category. The top ten components listed in Table 9 made up more than 64% of the total materials from NRDS loads; new painted wood, clean dimension lumber, contaminated wood, furniture, and clean engineered wood each composed more than 5% of the total tonnage. Please see Table 11 for a detailed listing of the full composition results for waste sampled at the NRDS.

#### Table 9. Top Ten Components: North Recycling and Disposal Station
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Painted Wood</td>
<td>12.7%</td>
<td>12.7%</td>
<td>4,601</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>10.7%</td>
<td>23.4%</td>
<td>3,876</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>9.5%</td>
<td>32.9%</td>
<td>3,454</td>
</tr>
<tr>
<td>Furniture</td>
<td>6.6%</td>
<td>39.6%</td>
<td>2,403</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>5.6%</td>
<td>45.1%</td>
<td>2,020</td>
</tr>
<tr>
<td>Other Construction</td>
<td>4.8%</td>
<td>50.0%</td>
<td>1,748</td>
</tr>
<tr>
<td>Mattresses</td>
<td>4.4%</td>
<td>54.4%</td>
<td>1,600</td>
</tr>
<tr>
<td>Carpet</td>
<td>4.0%</td>
<td>58.4%</td>
<td>1,435</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.0%</td>
<td>61.4%</td>
<td>1,099</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.9%</td>
<td>64.3%</td>
<td>1,059</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64.3%</strong></td>
<td><strong>23,294</strong></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2 South Recycling and Disposal Station (SRDS)

A total of 92 samples from the SRDS were examined during this study period. From July 2017 to August 2018, 61,642 tons of self-haul waste was disposed at the SRDS. The composition estimates for this subpopulation were applied to the 61,642 tons to estimate the amount of waste disposed for each component category. As shown in Table 10, clean dimension lumber, furniture, contaminated wood, new painted wood, clean engineered wood, and carpet each accounted for greater than 5%, by weight, of the self-haul waste disposed at the SRDS. The top ten components accounted for almost 60% of the total, by weight. Please see Table 12 for a full list of the composition results for the SRDS.

Table 10. Top Ten Components: South Recycling and Disposal Station
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>9.2%</td>
<td>9.2%</td>
<td>5,649</td>
</tr>
<tr>
<td>Furniture</td>
<td>8.2%</td>
<td>17.4%</td>
<td>5,077</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>7.6%</td>
<td>25.0%</td>
<td>4,696</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>6.9%</td>
<td>32.0%</td>
<td>4,282</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>5.9%</td>
<td>37.9%</td>
<td>3,666</td>
</tr>
<tr>
<td>Carpet</td>
<td>5.9%</td>
<td>43.9%</td>
<td>3,665</td>
</tr>
<tr>
<td>Other Treated Wood</td>
<td>4.1%</td>
<td>47.9%</td>
<td>2,503</td>
</tr>
<tr>
<td>Demo Gypsum Scrap</td>
<td>4.0%</td>
<td>51.9%</td>
<td>2,457</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.7%</td>
<td>55.6%</td>
<td>2,280</td>
</tr>
<tr>
<td>Other Construction</td>
<td>3.7%</td>
<td>59.3%</td>
<td>2,260</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59.3%</strong></td>
<td><strong>36,534</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.1.3 Comparisons between Transfer Stations

Several of the top ten components for both the NRDS and the SRDS were types of Construction Debris, including clean dimension lumber, contaminated wood, new painted wood, clean engineered wood, and carpet. Another top ten component shared between the self-haul waste streams at the two transfer stations was furniture.
Table 11. Composition by Weight: NRDS  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.7%</td>
<td>1,331</td>
<td>Furniture, Appliances, and Electronics</td>
<td>11.7%</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>6</td>
<td>6.6%</td>
<td>2,403</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>1.9%</td>
<td>675</td>
<td>4.4%</td>
<td>1,600</td>
</tr>
<tr>
<td>Wax/COC</td>
<td>0.0%</td>
<td>0</td>
<td>0.2%</td>
<td>0</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.1%</td>
<td>22</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>8</td>
<td>0.1%</td>
<td>31</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.7%</td>
<td>285</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycarbonate Containers</td>
<td>0.0%</td>
<td>1</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Aluminum/Steel</td>
<td>0.1%</td>
<td>30</td>
<td>0.4%</td>
<td>129</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>3</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.9%</td>
<td>313</td>
<td>10.7%</td>
<td>3,876</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plastic</th>
<th>5.8%</th>
<th>2,103</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>21</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>5</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>8</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>2</td>
</tr>
<tr>
<td>Tubes</td>
<td>0.4%</td>
<td>127</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.2%</td>
<td>87</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>6</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.1%</td>
<td>25</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>4</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.0%</td>
<td>16</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>36</td>
</tr>
<tr>
<td>Other Film</td>
<td>0.5%</td>
<td>182</td>
</tr>
<tr>
<td>Plastic</td>
<td>0.2%</td>
<td>87</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.2%</td>
<td>76</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>2.9%</td>
<td>1,059</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>1.0%</td>
<td>363</td>
</tr>
<tr>
<td>Glass</td>
<td>3.0%</td>
<td>1,070</td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>23</td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>8</td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.3%</td>
<td>101</td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.1%</td>
<td>21</td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>3</td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.8%</td>
<td>307</td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Glass</td>
<td>1.7%</td>
<td>606</td>
</tr>
<tr>
<td>Potentially Harmful Wastes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>11</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>5</td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>6</td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>34</td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>4</td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>2</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.9%</td>
<td>1,059</td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.0%</td>
<td>1,099</td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>0.6%</td>
<td>304</td>
</tr>
<tr>
<td>Limbs and Grass</td>
<td>0.1%</td>
<td>34</td>
</tr>
<tr>
<td>Prunings</td>
<td>0.1%</td>
<td>22</td>
</tr>
<tr>
<td>Food</td>
<td>0.7%</td>
<td>249</td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Organics</td>
<td>2.3%</td>
<td>819</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.3%</td>
<td>483</td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>0.6%</td>
<td>225</td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>30</td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>11</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.2%</td>
<td>70</td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td>36,221</td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Table 12. Composition by Weight: SRDS (August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>3.2%</td>
<td></td>
<td>1,994</td>
<td>12.1%</td>
<td></td>
<td>7,469</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>12</td>
<td>Furniture</td>
<td>8.2%</td>
<td>5,077</td>
</tr>
<tr>
<td>Plain CCC/Kraft</td>
<td>2.1%</td>
<td>0.7%</td>
<td>1,262</td>
<td>Mattresses</td>
<td>2.7%</td>
<td>1,666</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>Small Appliances</td>
<td>0.6%</td>
<td>345</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>20</td>
<td>Audio/Visual Equipment</td>
<td>0.2%</td>
<td>151</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.5%</td>
<td>0.3%</td>
<td>296</td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>0.1%</td>
<td>70</td>
<td>Other Electronics</td>
<td>0.4%</td>
<td>231</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>17</td>
<td>Construction Debris</td>
<td>61.5%</td>
<td>37,899</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.5%</td>
<td>0.2%</td>
<td>278</td>
<td>Clean Dimension Lumber</td>
<td>9.2%</td>
<td>5,649</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clean Engineered Wood</td>
<td>5.9%</td>
<td>3,666</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pallets</td>
<td>2.5%</td>
<td>1,567</td>
</tr>
<tr>
<td>Plastic</td>
<td>7.4%</td>
<td></td>
<td>4,575</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>0.0%</td>
<td>31</td>
<td>Crates</td>
<td>0.0%</td>
<td>22</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10</td>
<td>Other Untreated Wood</td>
<td>0.1%</td>
<td>54</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6</td>
<td>New Painted Wood</td>
<td>6.9%</td>
<td>4,282</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td>Old Painted Wood</td>
<td>2.3%</td>
<td>1,403</td>
</tr>
<tr>
<td>Tubing</td>
<td>0.3%</td>
<td>0.2%</td>
<td>256</td>
<td>Cross-treat Wood</td>
<td>1.0%</td>
<td>626</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>1.3%</td>
<td>1.8%</td>
<td>787</td>
<td>Other Treated Wood</td>
<td>4.1%</td>
<td>2,503</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td>12</td>
<td>Contaminated Wood</td>
<td>7.6%</td>
<td>4,966</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.3%</td>
<td>0.5%</td>
<td>185</td>
<td>New Gypsum Scrap</td>
<td>0.8%</td>
<td>504</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Demo Gypsum Scrap</td>
<td>4.0%</td>
<td>2,458</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>9</td>
<td>Carpet</td>
<td>5.9%</td>
<td>3,566</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.0%</td>
<td>0.0%</td>
<td>29</td>
<td>Felt Carpet Pad</td>
<td>0.7%</td>
<td>401</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>8</td>
<td>Fiberglass Insulation</td>
<td>0.3%</td>
<td>173</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>0.2%</td>
<td>81</td>
<td>Concrete</td>
<td>1.8%</td>
<td>1,088</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td>47</td>
<td>Asphalt Paving</td>
<td>0.0%</td>
<td>17</td>
</tr>
<tr>
<td>Other Film</td>
<td>0.5%</td>
<td>0.2%</td>
<td>335</td>
<td>Other Aggregates</td>
<td>0.6%</td>
<td>357</td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.1%</td>
<td>0.1%</td>
<td>45</td>
<td>Rock</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.3%</td>
<td>0.3%</td>
<td>205</td>
<td>Asphalt Shingles</td>
<td>1.1%</td>
<td>702</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.2%</td>
<td>1.1%</td>
<td>1,947</td>
<td>Other Asphaltic Roofing</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>1.0%</td>
<td>1.0%</td>
<td>625</td>
<td>Ceramics</td>
<td>3.0%</td>
<td>1,844</td>
</tr>
<tr>
<td>Glass</td>
<td>1.0%</td>
<td></td>
<td>607</td>
<td>Cement Fiber Board</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>0.0%</td>
<td>34</td>
<td>Single-ply Roofing Membranes</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>20</td>
<td>Ceiling Tiles</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.1%</td>
<td>0.0%</td>
<td>34</td>
<td>Other Construction</td>
<td>3.7%</td>
<td>2,260</td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.6%</td>
<td>0.8%</td>
<td>388</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Potentially Harmful Wastes</td>
<td>1.3%</td>
<td>780</td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td></td>
<td>1</td>
<td>Dried Latex Paint</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.2%</td>
<td>0.2%</td>
<td>113</td>
<td>Liquid Latex Paint</td>
<td>0.3%</td>
<td>172</td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Solvent-based Adhesives</td>
<td>0.1%</td>
<td>34</td>
</tr>
<tr>
<td>Other</td>
<td>0.6%</td>
<td>0.8%</td>
<td>388</td>
<td>Water-based Adhesives</td>
<td>0.3%</td>
<td>162</td>
</tr>
<tr>
<td>Oil-based Paint/Thinners</td>
<td>0.6%</td>
<td>0.7%</td>
<td>352</td>
<td>Caustic Cleaners</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Metal</td>
<td>6.5%</td>
<td></td>
<td>3,726</td>
<td>Pesticides/Herbicides</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10</td>
<td>Rechargeable Batteries</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>12</td>
<td>Other Dry-cell Batteries</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>0.0%</td>
<td>20</td>
<td>Wet-cell Batteries</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>0.1%</td>
<td>59</td>
<td>Gasoline/Kerosene</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>16</td>
<td>Motor Oil/Diesel Oil</td>
<td>0.1%</td>
<td>53</td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>9</td>
<td>Asbestos</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.1%</td>
<td>0.9%</td>
<td>1,319</td>
<td>Explosives</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td></td>
<td>0</td>
<td>Medical Wastes</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.7%</td>
<td>1.5%</td>
<td>2,280</td>
<td>Other Cleaners/Chemicals</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Metals</td>
<td>2.9%</td>
<td>1.0%</td>
<td>1,776</td>
<td>Pharmaceuticals/Vitamins</td>
<td>0.0%</td>
<td>5</td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>3.5%</td>
<td></td>
<td>2,149</td>
<td>Personal Care/Cosmetics</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Landscape &amp; Grass</td>
<td>1.0%</td>
<td>0.9%</td>
<td>604</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Prunings</td>
<td>0.1%</td>
<td>0.1%</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>2.4%</td>
<td>2.5%</td>
<td>1,494</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Organics</td>
<td>2.9%</td>
<td>1.0%</td>
<td>1,776</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.4%</td>
<td>0.9%</td>
<td>882</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>1.1%</td>
<td>0.6%</td>
<td>657</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>0.1%</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.1%</td>
<td>0.1%</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.2%</td>
<td>0.2%</td>
<td>133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td></td>
<td>61,642</td>
<td>Sample Count</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Self-haul Composition by Vehicle Type

Wastes are self-hauled to Seattle’s transfer stations in a variety of vehicles that can be categorized into two primary subpopulations: passenger vehicles and trucks. Passenger vehicles include cars, station wagons, and sport utility vehicles (all without trailers); all others (mostly pick-up trucks, vans, and vehicles with trailers) are classified as trucks.

Figure 4 provides an overview of waste disposed by both vehicle types. This figure illustrates that Construction Debris accounted for a relatively large percentage of the total tonnage both for passenger vehicles and trucks, about 50% and 62%, respectively. Construction Debris includes components such as clean dimension lumber, contaminated wood, and carpet. Furniture, Appliances, & Electronics were prevalent both in passenger vehicle and truck waste, composing approximately 13% and 12% of the total tonnage respectively.

Figure 4. Composition Summary: by Vehicle Type (August 1, 2017 to July 31, 2018)

4.1.4 Passenger Vehicles

Twenty-one passenger vehicle samples were characterized during the 2017-18 study year. Passenger vehicles disposed 3,621 tons of self-haul waste during this time. The composition estimates for this subpopulation were applied to the 3,621 tons to estimate the amount of waste disposed for each component category. As shown in Table 13, the top ten components sum to more than 60% of the total tonnage. Carpet was the largest component, accounting for approximately 12% of the total. New painted wood, mattresses, contaminated wood, and textiles/clothing were other large components of waste disposed by passenger vehicles (each accounting for more than 5%, by weight). The full composition results for passenger vehicles are listed in Table 15.
4.1.5 Trucks

A total of 161 self-haul truck loads were sampled during this study period. Trucks disposed 94,242 tons of self-haul waste during the 2017-18 study period. The composition estimates for this subpopulation were applied to the 94,242 tons to estimate the amount of waste disposed for each component category. As shown in Table 14, clean dimension lumber, new painted wood, and contaminated wood were the three largest materials, accounting for nearly 28% of material disposed. The top ten components accounted for approximately 60% of the total waste disposed by self-haul trucks in the 2017-18 study year. Please see Table 16 to view the full composition results for self-haul trucks.

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpet</td>
<td>11.6%</td>
<td>11.6%</td>
<td>421</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>10.0%</td>
<td>21.6%</td>
<td>363</td>
</tr>
<tr>
<td>Mattresses</td>
<td>6.8%</td>
<td>28.4%</td>
<td>246</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>6.1%</td>
<td>34.6%</td>
<td>222</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>5.7%</td>
<td>40.2%</td>
<td>206</td>
</tr>
<tr>
<td>Other Construction</td>
<td>5.4%</td>
<td>45.6%</td>
<td>195</td>
</tr>
<tr>
<td>Furniture</td>
<td>4.8%</td>
<td>50.4%</td>
<td>173</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.6%</td>
<td>54.0%</td>
<td>129</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.3%</td>
<td>57.3%</td>
<td>120</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>3.2%</td>
<td>60.5%</td>
<td>116</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60.5%</strong></td>
<td><strong>2,190</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 14. Top Ten Components: Trucks
(August 1, 2017 to July 31, 2018)

4.1.6 Comparisons between Vehicle Types

New painted wood, contaminated wood, furniture, carpet, other construction, mixed metals/material and mattresses were top ten components shared between passenger vehicles and trucks. Textiles/clothing, durable plastic products, and other ferrous were among the top ten components for passenger vehicles, but not for trucks. On the other hand, clean dimension lumber, clean engineered wood, and other treated wood were top ten components for trucks, but not for passenger vehicles.
Table 15. Composition by Weight: Passenger Vehicles
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
<th>Material Percent</th>
<th>Est. Tons</th>
<th>Material Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>3.8%</td>
<td>136</td>
<td>Furniture, Appliances, and Electronics</td>
<td>12.9%</td>
<td>466</td>
<td></td>
</tr>
<tr>
<td>Plain CCC/Kraft</td>
<td>1.0%</td>
<td>36</td>
<td>Mattresses</td>
<td>6.8%</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td>Waxed CCC</td>
<td>0.0%</td>
<td>0</td>
<td>Small Appliances</td>
<td>0.0%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>2</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>1</td>
<td>Audio/Visual Equipment</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>1.7%</td>
<td>60</td>
<td>CTR Monitors</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Polycasted Containers</td>
<td>0.0%</td>
<td>0</td>
<td>CTR Televisions</td>
<td>0.0%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>2</td>
<td>Other Electronics</td>
<td>1.3%</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>1</td>
<td>Construction Debris</td>
<td>49.8%</td>
<td>1,802</td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.9%</td>
<td>33</td>
<td>Clean Dimension Lumber</td>
<td>2.8%</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>8.4%</td>
<td>305</td>
<td>Clean Engineered Wood</td>
<td>0.9%</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>4</td>
<td>Pallets</td>
<td>2.0%</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.1%</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.1%</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubes</td>
<td>0.2%</td>
<td>8</td>
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<td>Tires</td>
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<td>Fines and Misc Materials</td>
<td>3.4%</td>
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<tr>
<td>Sand/Soil/Dirt</td>
<td>2.9%</td>
<td>3.0%</td>
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</tr>
<tr>
<td>Miscellaneous Fines</td>
<td>0.2%</td>
<td>0.2%</td>
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<tr>
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<td>0.1%</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Inorganics</td>
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<td>0.2%</td>
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<tr>
<td>Totals</td>
<td>100%</td>
<td>3,621</td>
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<td></td>
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</tbody>
</table>

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

Seattle Public Utilities
2017/18 Self-haul Waste Stream Composition Study
Page 20
Table 16. Composition by Weight: Trucks  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.4%</td>
<td>3,188</td>
<td>Furniture, Appliances, and Electronics</td>
<td>11.9%</td>
<td>11,237</td>
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<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>16</td>
<td>Furniture</td>
<td>7.8%</td>
<td>7,307</td>
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<tr>
<td>Plain CCC/Kraft</td>
<td>2.0%</td>
<td>1,921</td>
<td>Mattresses</td>
<td>3.2%</td>
<td>3,020</td>
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<td>Waxed OCC</td>
<td>0.0%</td>
<td>0</td>
<td>Small Appliances</td>
<td>0.4%</td>
<td>415</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>31</td>
<td>Cell Phones</td>
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<td>High-grade Paper</td>
<td>0.0%</td>
<td>26</td>
<td>Audio/Visual Equipment</td>
<td>0.2%</td>
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<td>0.5%</td>
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<td>CRT Monitors</td>
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<td>CRT Televisions</td>
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<td>Other Electronics</td>
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<tr>
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<td>Construction Debris</td>
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<td>Clean Dimension Lumber</td>
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<tr>
<td>Plastic</td>
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<td>6,375</td>
<td>Clean Engineered Wood</td>
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<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>48</td>
<td>Pallets</td>
<td>2.7%</td>
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<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>14</td>
<td>Other Untreated Wood</td>
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<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>10</td>
<td>New Painted Wood</td>
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<td>Old Painted Wood</td>
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<tr>
<td>Tubes</td>
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<td>Creosote-treated Wood</td>
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<td>Other Treated Wood</td>
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<td>Contaminated Wood</td>
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<td>New Gypsum Scrap</td>
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<td>Fiberglass Insulation</td>
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<td>Concrete</td>
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<td>Other Aggregates</td>
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<td>Rock</td>
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<td>1,308</td>
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<td>Pesticides/Herbicides</td>
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<td>Other Nonferrous</td>
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<td>Pesticides/Herbicides</td>
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<td>Pesticides/Herbicides</td>
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<td>0</td>
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<td>Empty Aerosol Cans</td>
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<td>Pesticides/Herbicides</td>
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<td>Limbs and Grass</td>
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<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Prunings</td>
<td>0.0%</td>
<td>45</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Food</td>
<td>1.8%</td>
<td>1,721</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Organics</td>
<td>2.5%</td>
<td>2,313</td>
<td>Totals</td>
<td>100%</td>
<td>94,242</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.2%</td>
<td>714</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>0.9%</td>
<td>849</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.2%</td>
<td>174</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>13</td>
<td>Totals</td>
<td>100%</td>
<td>94,242</td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Self-haul Composition by Season

As shown in Figure 5, **Construction Debris** accounted for a substantial portion of the self-haul sub-stream during every season of the 2017-18 study year. As a proportion of total disposal, **Construction Debris** disposal was most prevalent in the winter, at 67%. **Furniture, Appliances, & Electronics** was also a large proportion of the waste stream, from 7% in Winter to nearly 16% in Autumn.

**Figure 5. Composition Summary: by Season**
4.1.7 Spring

A total of 60 self-haul samples were taken during the spring months of March, April and May 2018. Self-haul vehicles disposed of 25,968 tons waste during this season. The composition estimates for this subpopulation were applied to the 25,968 tons to estimate the amount of waste disposed for each component category. As shown in Table 17, the top ten components summed to approximately 61% of the total spring tonnage. **Contaminated wood** was the largest single component, accounting for about 12% of the total, by weight. **Clean dimension lumber, new painted wood, carpet, and clean engineered wood** were each above 5% of composition. Table 21 lists the full composition results for the spring.

**Table 17. Top Ten Components: Spring**
(March, April, May 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contaminated Wood</td>
<td>12.3%</td>
<td>12.3%</td>
<td>3,184</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>8.7%</td>
<td>21.0%</td>
<td>2,262</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>7.8%</td>
<td>28.8%</td>
<td>2,036</td>
</tr>
<tr>
<td>Carpet</td>
<td>6.3%</td>
<td>35.1%</td>
<td>1,625</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>6.2%</td>
<td>41.3%</td>
<td>1,620</td>
</tr>
<tr>
<td>Mattresses</td>
<td>4.4%</td>
<td>45.7%</td>
<td>1,139</td>
</tr>
<tr>
<td>Pallets</td>
<td>4.1%</td>
<td>49.8%</td>
<td>1,059</td>
</tr>
<tr>
<td>Furniture</td>
<td>3.9%</td>
<td>53.6%</td>
<td>1,005</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.7%</td>
<td>57.3%</td>
<td>955</td>
</tr>
<tr>
<td>Demo Gypsum Scrap</td>
<td>3.6%</td>
<td>60.9%</td>
<td>932</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60.9%</strong></td>
<td></td>
<td><strong>15,817</strong></td>
</tr>
</tbody>
</table>

4.1.8 Summer

During the summer months of July and August 2017 and June 2018, 29 self-haul loads were sampled. Self-haul vehicles disposed 26,816 tons of waste during that time. The composition estimates were applied to the 26,816 tons to estimate the amount of waste disposed for each component category. Table 18 contains a list of the top ten components, which summed to about 68% of the total summer tonnage. **Clean dimension lumber, furniture, and new painted wood** each accounted for more than 10% of the self-hauled waste disposed in the summer. Refer to Table 22 for the complete summer composition results.

**Table 18. Top Ten Components: Summer**
(July and August 2017, June 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>17.3%</td>
<td>17.3%</td>
<td>4,637</td>
</tr>
<tr>
<td>Furniture</td>
<td>13.0%</td>
<td>30.3%</td>
<td>3,486</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>10.4%</td>
<td>40.7%</td>
<td>2,796</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>5.0%</td>
<td>45.7%</td>
<td>1,341</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>4.9%</td>
<td>50.6%</td>
<td>1,308</td>
</tr>
<tr>
<td>Food</td>
<td>4.3%</td>
<td>54.9%</td>
<td>1,157</td>
</tr>
<tr>
<td>Demo Gypsum Scrap</td>
<td>3.8%</td>
<td>58.7%</td>
<td>1,012</td>
</tr>
<tr>
<td>Concrete</td>
<td>3.4%</td>
<td>62.1%</td>
<td>914</td>
</tr>
<tr>
<td>Creosote-treated Wood</td>
<td>3.1%</td>
<td>65.2%</td>
<td>835</td>
</tr>
<tr>
<td>Asphalt Shingles</td>
<td>3.0%</td>
<td>68.2%</td>
<td>791</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68.2%</strong></td>
<td></td>
<td><strong>18,275</strong></td>
</tr>
</tbody>
</table>
4.1.9 Autumn

A total of 57 self-haul loads were sampled during autumn months (September, October and November 2017). Self-haul loads during autumn amounted to 23,634 tons of waste. The composition estimates for this subpopulation were applied to the 23,634 tons to estimate the amount of waste disposed for each component category. As shown in Table 19, new painted wood, and contaminated wood each accounted for more than 10% of the waste disposed of during autumn. When combined, the top ten components accounted for approximately 67% of the total, by weight. Table 23 lists the detailed composition results for samples taken from September to November 2017.

Table 19. Top Ten Components: Autumn
(September, October, November 2017)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Painted Wood</td>
<td>12.6%</td>
<td>12.6%</td>
<td>2,983</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>11.6%</td>
<td>24.2%</td>
<td>2,747</td>
</tr>
<tr>
<td>Furniture</td>
<td>9.5%</td>
<td>33.7%</td>
<td>2,237</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>7.2%</td>
<td>40.9%</td>
<td>1,696</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>6.3%</td>
<td>47.2%</td>
<td>1,491</td>
</tr>
<tr>
<td>Carpet</td>
<td>5.7%</td>
<td>52.9%</td>
<td>1,347</td>
</tr>
<tr>
<td>Mattresses</td>
<td>4.5%</td>
<td>57.4%</td>
<td>1,074</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.7%</td>
<td>61.1%</td>
<td>866</td>
</tr>
<tr>
<td>Old Painted Wood</td>
<td>3.4%</td>
<td>64.5%</td>
<td>801</td>
</tr>
<tr>
<td>Other Construction</td>
<td>2.9%</td>
<td>67.4%</td>
<td>679</td>
</tr>
<tr>
<td>Total</td>
<td>67.4%</td>
<td></td>
<td>15,921</td>
</tr>
</tbody>
</table>

4.1.10 Winter

For the winter season, December of 2017 and January and February of 2018, a total of 36 samples were taken from self-haul loads. Self-haul vehicles disposed 21,445 tons waste during the winter season. The composition estimates for this subpopulation were applied to the 21,445 tons to estimate the amount of waste disposed for each component category. Table 20 lists the top ten components of waste disposed during the winter, which summed to approximately 62% of the total, by weight. Other treated wood, with over 10%, was the largest material, followed by other construction, carpet, contaminated wood, and clean engineered wood. Please see Table 24 for a list of the detailed composition results.
Table 20. Top Ten Components: Winter
(December 2017 and January and February 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Treated Wood</td>
<td>10.4%</td>
<td>10.4%</td>
<td>2,230</td>
</tr>
<tr>
<td>Other Construction</td>
<td>9.4%</td>
<td>19.8%</td>
<td>2,026</td>
</tr>
<tr>
<td>Carpet</td>
<td>8.3%</td>
<td>28.2%</td>
<td>1,782</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>6.7%</td>
<td>34.9%</td>
<td>1,438</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>5.9%</td>
<td>40.8%</td>
<td>1,268</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>5.0%</td>
<td>45.8%</td>
<td>1,067</td>
</tr>
<tr>
<td>Old Painted Wood</td>
<td>4.4%</td>
<td>50.2%</td>
<td>953</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>4.4%</td>
<td>54.6%</td>
<td>938</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>4.3%</td>
<td>58.9%</td>
<td>931</td>
</tr>
<tr>
<td>Other Glass</td>
<td>3.5%</td>
<td>62.4%</td>
<td>759</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62.4%</strong></td>
<td><strong>13,391</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.1.11 Comparisons among Seasons

*Clean dimension lumber, clean engineered wood, and new painted wood* were top ten components across all four seasons. *Furniture* was a top ten component in all seasons except for winter, while *carpet* and *contaminated wood* were top ten components in all seasons except for summer. *Durable plastic products* were in the top 10 in spring and winter, *mattresses* in spring and autumn, and *demolition gypsum scrap* in spring and summer. *Other construction* was a top 10 material item in autumn and winter, while *mixed metals/materials* made the top ten in summer and autumn.
<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.7%</td>
<td></td>
<td>950</td>
<td>9.6%</td>
<td></td>
<td>2,481</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>5</td>
<td>3.9%</td>
<td>3.1%</td>
<td>1,005</td>
</tr>
<tr>
<td>Plain CCC/Kraft</td>
<td>2.1%</td>
<td>0.9%</td>
<td>543</td>
<td>4.4%</td>
<td>3.2%</td>
<td>1,139</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>0.2%</td>
<td>0.4%</td>
<td>61</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>9</td>
<td>0.5%</td>
<td>0.5%</td>
<td>134</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.9%</td>
<td>0.5%</td>
<td>243</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.2%</td>
<td>0.2%</td>
<td>50</td>
<td>0.5%</td>
<td>0.4%</td>
<td>142</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.1%</td>
<td>0.1%</td>
<td>13</td>
<td>64.3%</td>
<td>6.4%</td>
<td>16,694</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.3%</td>
<td>0.2%</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>8.6%</td>
<td></td>
<td>2,246</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2</td>
<td>0.1%</td>
<td>0.3%</td>
<td>32</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>2.0%</td>
<td>1.6%</td>
<td>516</td>
</tr>
<tr>
<td>Tubes</td>
<td>0.3%</td>
<td>0.2%</td>
<td>70</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>2.8%</td>
<td>4.3%</td>
<td>724</td>
<td>2.3%</td>
<td>1.8%</td>
<td>608</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>12.3%</td>
<td>4.7%</td>
<td>3,184</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>3.3%</td>
<td>2.6%</td>
<td>849</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4</td>
<td>3.6%</td>
<td>3.0%</td>
<td>932</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4</td>
<td>6.3%</td>
<td>3.3%</td>
<td>1,023</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>0.1%</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Film</td>
<td>0.4%</td>
<td>0.2%</td>
<td>108</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.0%</td>
<td>0.1%</td>
<td>12</td>
<td>0.0%</td>
<td>0.1%</td>
<td>10</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.6%</td>
<td>0.8%</td>
<td>207</td>
<td>0.3%</td>
<td>0.4%</td>
<td>75</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.7%</td>
<td>1.4%</td>
<td>955</td>
<td>2.2%</td>
<td>1.9%</td>
<td>576</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>0.3%</td>
<td>0.3%</td>
<td>91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>0.8%</td>
<td></td>
<td>209</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>0.1%</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.2%</td>
<td>0.2%</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.5%</td>
<td>0.5%</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>5.5%</td>
<td></td>
<td>1,552</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
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| Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
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<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
<th>Material</th>
<th>Est. Percent</th>
<th>Est. Tons</th>
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<tbody>
<tr>
<td>Paper</td>
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<td>976</td>
<td>Furniture, Appliances, and Electronics</td>
<td>15.3%</td>
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<td>Furniture</td>
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<td>Plain OCC/Kraft</td>
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<td>553</td>
<td>Mattresses</td>
<td>1.7%</td>
<td>466</td>
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<td>Small Appliances</td>
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<td>High-grade Paper</td>
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<td>Audio/Visual Equipment</td>
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<td></td>
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<td>Construction Debris</td>
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<td>Clean Engineered Wood</td>
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<td>#1 PET Bottles</td>
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<td>0.2%</td>
<td>Pallets</td>
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<td>#2 HDPE Natural Bottles</td>
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<td>5</td>
<td>Other Untreated Wood</td>
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<tr>
<td>#2 HDPE Colored Bottles</td>
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<td>6</td>
<td>New Painted Wood</td>
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<td>2,796</td>
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<td>0</td>
<td>Old Painted Wood</td>
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<td>Tub</td>
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<td>Creosote-Treated Wood</td>
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<td>Expanded Poly. Non-food</td>
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<td>New Gypsum Scrap</td>
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<td>Demo Gypsum Scrap</td>
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<td>0.1%</td>
<td>Felt Carpet Pad</td>
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<td>Fiberglass Insulation</td>
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<td>Concrete</td>
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<td>Asphalt Paving</td>
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<td>Other Aggregates</td>
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<td>Foam Carpet Padding</td>
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<td>Asphalt Shingles</td>
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<td>1.2%</td>
<td>Other Asphal Roofing</td>
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<td>Other Construction</td>
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<td>Pesticides/Herbicides</td>
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<td>Other Glass</td>
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<td>Other Dry-cell Batteries</td>
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<td>Other Dry-cell Batteries</td>
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<td>Aluminum Foil/Containers</td>
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<td>Wet-cell Batteries</td>
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<td>Other Aluminum</td>
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<td>Gasoline/Kerosene</td>
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<tr>
<td>Other Nonferrous</td>
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<td>Steel Food Cans</td>
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<td>Empty Aerosol Cans</td>
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<td>Explosives</td>
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<td>Other Ferrous</td>
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<td>Medical Wastes</td>
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<td>Oil filters</td>
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<td>Other Potentially Harmful Waste</td>
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<td>Other Cleaners/Chemicals</td>
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<td>Leaves and Grass</td>
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<td>0.4%</td>
<td>Personal Care/Cosmetics</td>
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</tr>
<tr>
<td>Prunings</td>
<td>0.1%</td>
<td>0.0%</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0</td>
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<td>Miscellaneous Inorganics</td>
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<td>0.1%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.1%</td>
<td>0.2%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rubber Products</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.1%</td>
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</tr>
<tr>
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</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Table 23. Composition by Weight: Autumn
(September, October, November 2017)

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<th>Material</th>
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<th>+ / -</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
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<tr>
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<td>0.0%</td>
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<td>3</td>
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<td>0.0%</td>
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<tr>
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<tr>
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<tr>
<td>Other Bottles</td>
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<tr>
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<td>0.0%</td>
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</tr>
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</tr>
<tr>
<td>Other Ferrous</td>
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<td>0.8%</td>
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<td>Oil filters</td>
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<td></td>
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</tr>
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<td>Leaves and Grass</td>
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<td>Fines and Misc Materials</td>
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Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Table 24. Composition by Weight: Winter
(December 2017 and January and February 2018)

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<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Tons</th>
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<td>0.0%</td>
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<tr>
<td>Plain CCC/Kraft</td>
<td>2.6%</td>
<td>1.4%</td>
<td>434</td>
<td>2.7%</td>
<td>2.3%</td>
<td>586</td>
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<td>Waxed CCC</td>
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<tr>
<td>Grocery/Shopping Bags</td>
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</tr>
<tr>
<td>Compostable/Soiled</td>
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<tr>
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<td>317</td>
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<td>0.7%</td>
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<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Textiles/Loos and Gras</td>
<td>1.3%</td>
<td>2.2%</td>
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<td>0.2%</td>
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<tr>
<td>Other Fats/Ink</td>
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<td>0.0%</td>
<td>0.0%</td>
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<tr>
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</tr>
<tr>
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<tr>
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<td>0.9%</td>
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<td>0.5%</td>
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<td>2.1%</td>
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<td>2.1%</td>
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<td>0.2%</td>
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<tr>
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<td>316</td>
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<tr>
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<tr>
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<td>0.0%</td>
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<tr>
<td>Other Ferrous</td>
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</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Self-haul Composition by Generator Type, by Site

This subsection provides a brief overview of the wastes self-hauled by residential and non-residential generators to the NRDS and SRDS.

As shown in Figure 6, Construction Debris accounted for over 57% of the total for residential and non-residential waste at both the NRDS and the SRDS. Construction Debris includes components such as clean dimension lumber, new painted wood, and demo gypsum scrap.

Figure 6. Composition Summary: by Generator Type, by Site
(August 1, 2017 to July 31, 2018)
4.1.12 Residential Generators, by Site

4.1.12.1 North Recycling and Disposal Station (NRDS)

A total of 70 samples were taken from residential loads at the NRDS. As shown in Table 25, the top ten components from these loads summed to more than 63% of the total, and *new painted wood* and *contaminated wood* were the two most prevalent components, at 15% and 11%, respectively. Table 29 lists detailed composition results for the residential waste disposed at the NRDS.

Table 25. Top Ten Components: Residential at NRDS (August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Painted Wood</td>
<td>14.5%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>11.1%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>7.5%</td>
<td>33.1%</td>
</tr>
<tr>
<td>Furniture</td>
<td>6.1%</td>
<td>39.1%</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>4.5%</td>
<td>43.7%</td>
</tr>
<tr>
<td>Carpet</td>
<td>4.2%</td>
<td>47.9%</td>
</tr>
<tr>
<td>Other Construction</td>
<td>4.2%</td>
<td>52.1%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.8%</td>
<td>55.9%</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>3.7%</td>
<td>59.6%</td>
</tr>
<tr>
<td>Mattresses</td>
<td>3.7%</td>
<td>63.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>63.2%</td>
<td></td>
</tr>
</tbody>
</table>

4.1.12.2 South Recycling and Disposal Station (SRDS)

A total of 67 samples were taken from residential loads at the SRDS. As Table 26 details, the top ten components in the loads were 62% of the total materials in the loads, by weight. *Furniture* and *new painted wood* were the top two components, each with about 10%. Table 30 lists detailed composition results for the residential waste disposed at the SRDS.

Table 26. Top Ten Components: Residential at SRDS (August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>9.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>9.6%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>6.7%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Carpet</td>
<td>6.6%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Clean Dimension Lumber</td>
<td>6.2%</td>
<td>38.9%</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>5.9%</td>
<td>44.8%</td>
</tr>
<tr>
<td>Other Treated Wood</td>
<td>4.5%</td>
<td>49.3%</td>
</tr>
<tr>
<td>Mattresses</td>
<td>4.3%</td>
<td>53.6%</td>
</tr>
<tr>
<td>Ceramics</td>
<td>4.1%</td>
<td>57.7%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.9%</td>
<td>61.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61.6%</td>
<td></td>
</tr>
</tbody>
</table>
4.1.13 Non-Residential Generators, by Site

4.1.13.1 North Recycling and Disposal Station (NRDS)

A total of 20 samples were taken from non-residential loads at the NRDS. Table 27 lists the top ten components in the loads, which sum to about 71% of the total. Clean dimension lumber accounted for approximately 15% of the total, by weight. Table 31 lists detailed composition results for the non-residential waste disposed at the NRDS.

Table 27. Top Ten Components: Non-residential at NRDS
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>14.5%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Pallets</td>
<td>9.6%</td>
<td>24.1%</td>
</tr>
<tr>
<td>Other Construction</td>
<td>8.1%</td>
<td>32.2%</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>6.8%</td>
<td>39.0%</td>
</tr>
<tr>
<td>Furniture</td>
<td>6.5%</td>
<td>45.5%</td>
</tr>
<tr>
<td>Mattresses</td>
<td>6.2%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>5.9%</td>
<td>57.6%</td>
</tr>
<tr>
<td>Carpet</td>
<td>5.4%</td>
<td>63.1%</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>4.8%</td>
<td>67.9%</td>
</tr>
<tr>
<td>Asphalt Shingles</td>
<td>3.5%</td>
<td>71.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71.4%</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.1.13.2 South Recycling and Disposal Station (SRDS)

A total of 25 samples were taken from non-residential loads at the SRDS. As shown in Table 28, the top ten components accounted for a combined total of 68% of the tonnage. Clean dimension lumber was the single largest component of this waste, with 15%. Table 32 lists detailed composition results for the non-residential waste disposed at the SRDS.

Table 28. Top Ten Components: Non-residential at SRDS
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>14.5%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>14.2%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Demo Gypsum Scrap</td>
<td>7.5%</td>
<td>36.2%</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>6.1%</td>
<td>42.3%</td>
</tr>
<tr>
<td>Carpet</td>
<td>5.6%</td>
<td>47.9%</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>4.5%</td>
<td>52.4%</td>
</tr>
<tr>
<td>Concrete</td>
<td>4.2%</td>
<td>56.6%</td>
</tr>
<tr>
<td>Pallets</td>
<td>4.2%</td>
<td>60.8%</td>
</tr>
<tr>
<td>Food</td>
<td>3.7%</td>
<td>64.5%</td>
</tr>
<tr>
<td>Old Painted Wood</td>
<td>3.5%</td>
<td>68.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.1.14 Comparisons among Generator Types and Sites

Four material categories, contaminated wood, clean dimension lumber, clean engineered wood and carpet, were top ten components for both residential and non-residential generators at both sites.
### Table 29. Composition by Weight: Residential at NRDS (August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Percent</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>6.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubes</td>
<td>0.4%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expanded Poly, Non-food</td>
<td>0.3%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expanded Poly, Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigid Poly, Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Film</td>
<td>0.4%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.2%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.3%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.5%</td>
<td>1.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>1.1%</td>
<td>0.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>2.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.5%</td>
<td>0.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>2.1%</td>
<td>2.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>7.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>3.7%</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.8%</td>
<td>1.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>1.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.1%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prunings</td>
<td>0.2%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>0.7%</td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Organics</td>
<td>3.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.9%</td>
<td>1.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>1.0%</td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.2%</td>
<td>0.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.5%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
### Table 30. Composition by Weight: Residential at SRDS
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Percent</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.2%</td>
<td></td>
<td>Furniture, Appliances, and Electronics</td>
<td>15.6%</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Furniture</td>
<td>9.8%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>1.9%</td>
<td>0.7%</td>
<td>Mattresses</td>
<td>4.3%</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Small Appliances</td>
<td>0.9%</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Cell Phones</td>
<td>0.0%</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Audio/Visual Equipment</td>
<td>0.1%</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.5%</td>
<td>0.4%</td>
<td>CRT Monitors</td>
<td>0.0%</td>
</tr>
<tr>
<td>Polycasted Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>CRT Televisions</td>
<td>0.0%</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Other Electronics</td>
<td>0.5%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.6%</td>
<td>0.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>5.8%</td>
<td></td>
<td>Construction Debris</td>
<td>57.7%</td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Clean Dimension Lumber</td>
<td>6.2%</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Clean Engineered Wood</td>
<td>5.9%</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Pallets</td>
<td>2.5%</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubes</td>
<td>0.4%</td>
<td>0.2%</td>
<td>Crates</td>
<td>0.0%</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.2%</td>
<td>0.2%</td>
<td>Other Untreated Wood</td>
<td>0.1%</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Contaminated Wood</td>
<td>6.7%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>New Gypsum Scrap</td>
<td>0.1%</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Demo Gypsum Scrap</td>
<td>0.1%</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.1%</td>
<td>0.0%</td>
<td>Carpet</td>
<td>6.6%</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Felt Carpet Pad</td>
<td>0.5%</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Fiberglass Insulation</td>
<td>0.1%</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.0%</td>
<td>Concrete</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other Film</td>
<td>0.6%</td>
<td>0.4%</td>
<td>Asphalt Paving</td>
<td>0.1%</td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Other Aggregates</td>
<td>0.7%</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.2%</td>
<td>0.2%</td>
<td>Rock</td>
<td>0.0%</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.6%</td>
<td>1.2%</td>
<td>Asphalt Shingles</td>
<td>1.2%</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>0.4%</td>
<td>0.3%</td>
<td>Other Asphaltic Roofing</td>
<td>0.0%</td>
</tr>
<tr>
<td>Glass</td>
<td>1.2%</td>
<td></td>
<td>Ceramics</td>
<td>4.1%</td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Cement Fiber Board</td>
<td>0.0%</td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Single-ply Roofing Membranes</td>
<td>0.0%</td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Ceiling Tiles</td>
<td>0.0%</td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Other Construction</td>
<td>3.6%</td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFls</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.3%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.8%</td>
<td>0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>6.8%</td>
<td></td>
<td>Potentially Harmful Wastes</td>
<td>1.8%</td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Dried Latex Paint</td>
<td>0.0%</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Liquid Latex Paint</td>
<td>0.4%</td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Solvent-based Adhesives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>0.2%</td>
<td>Asbestos</td>
<td>0.0%</td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Motor Oil/Diesel Oil</td>
<td>0.1%</td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Explosives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.5%</td>
<td>0.9%</td>
<td>Other Dry-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Wet-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>3.9%</td>
<td>1.4%</td>
<td>Solvent-based Adhesives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>2.9%</td>
<td></td>
<td>Gasoline/Kerosene</td>
<td>0.0%</td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>1.4%</td>
<td>1.1%</td>
<td>Other Ferrous</td>
<td>0.0%</td>
</tr>
<tr>
<td>Prunings</td>
<td>0.2%</td>
<td>0.2%</td>
<td>Motor Oil/Diesel Oil</td>
<td>0.1%</td>
</tr>
<tr>
<td>Food</td>
<td>1.3%</td>
<td>1.0%</td>
<td>Asbestos</td>
<td>0.0%</td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Explosives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Organics</td>
<td>3.1%</td>
<td></td>
<td>Other Organic Solvent</td>
<td>0.0%</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>1.6%</td>
<td>1.0%</td>
<td>Medical Wastes</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>0.9%</td>
<td>0.5%</td>
<td>Other Cleaners/Chemicals</td>
<td>0.0%</td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Pharmaceuticals/Vitamins</td>
<td>0.0%</td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Personal Care/Cosmetics</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.3%</td>
<td>0.3%</td>
<td>Reliably Harmful Waste</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fines and Misc Materials</td>
<td>2.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand/Sand/Dirt</td>
<td>1.9%</td>
<td>1.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-distinct Fines</td>
<td>0.1%</td>
<td>0.0%</td>
<td>Miscellaneous Organics</td>
<td>0.1%</td>
</tr>
<tr>
<td>Miscellaneous Inorganics</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Count</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
### Table 31. Composition by Weight: Non-Residential at NRDS  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Paper</th>
<th>5.0%</th>
<th>Furniture, Appliances, and Electronics</th>
<th>12.7%</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>0.0%</td>
<td>Furniture</td>
<td>6.5%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.5%</td>
<td>1.4%</td>
<td></td>
<td></td>
<td>Mattresses</td>
<td>6.2%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>Small Appliances</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>Audio/Visual Equipment</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.7%</td>
<td>0.6%</td>
<td></td>
<td></td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td>Other Electronics</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>1.6%</td>
<td>1.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plastic</th>
<th>5.6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 PET Bottles</td>
<td>0.1%</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tub</td>
<td>0.2%</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.0%</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.0%</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
</tr>
<tr>
<td>Other Film</td>
<td>0.7%</td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.2%</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.1%</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>3.1%</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glass</th>
<th>2.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.6%</td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.1%</td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
</tr>
<tr>
<td>Flat Glass</td>
<td>1.5%</td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metal</th>
<th>4.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.1%</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.2%</td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.7%</td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

| Compostable Organics                           | 0.8% |
| Leaves and Grass                               | 0.0% | 0.0% |
| Prunings                                       | 0.0% | 0.0% |
| Food                                           | 0.8% | 0.7% |
| Fats, Oils, Grease                             | 0.0% | 0.0% |

| Other Organics | 0.7% |
| Textiles/Clothing                               | 0.4% | 0.3% |
| Mixed Textiles                                  | 0.1% | 0.1% |
| Disposable Diapers                              | 0.1% | 0.1% |
| Animal By-products                              | 0.0% | 0.0% |
| Rubber Products                                 | 0.0% | 0.0% |
| Tires                                          | 0.0% | 0.0% |

<table>
<thead>
<tr>
<th>Potentially Harmful Wastes</th>
<th>0.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried Latex Paint</td>
<td>0.0%</td>
</tr>
<tr>
<td>Liquid Latex Paint</td>
<td>0.0%</td>
</tr>
<tr>
<td>Solvent-based Adhesives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Water-based Adhesives</td>
<td>0.3%</td>
</tr>
<tr>
<td>Oil-based Paint/Thinners</td>
<td>0.1%</td>
</tr>
<tr>
<td>Caustic Cleaners</td>
<td>0.0%</td>
</tr>
<tr>
<td>Pesticides/Herbicides</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rechargeable Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Dry-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Wet-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Gasoline/Kerosene</td>
<td>0.0%</td>
</tr>
<tr>
<td>Motor Oil/Diesel Oil</td>
<td>0.0%</td>
</tr>
<tr>
<td>Asbestos</td>
<td>0.0%</td>
</tr>
<tr>
<td>Explosives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Medical Wastes</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Cleaners/Chemicals</td>
<td>0.0%</td>
</tr>
<tr>
<td>Pharmaceuticals/Vitamins</td>
<td>0.0%</td>
</tr>
<tr>
<td>Personal Care/Cosmetics</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fines and Misc Materials</th>
<th>0.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand/Soil/Dirt</td>
<td>0.1%</td>
</tr>
<tr>
<td>Non-distinct Fines</td>
<td>0.1%</td>
</tr>
<tr>
<td>Miscellaneous Organics</td>
<td>0.5%</td>
</tr>
<tr>
<td>Miscellaneous Inorganics</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Totals</th>
<th>100%</th>
</tr>
</thead>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
Table 32. Composition by Weight: Non-Residential at SRDS
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Percent</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>3.3%</td>
<td></td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>Newspapers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Furniture</td>
<td>2.9%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.6%</td>
<td>1.5%</td>
<td>Mattresses</td>
<td>0.0%</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Small Appliances</td>
<td>0.0%</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Cell Phones</td>
<td>0.0%</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Audio/Visual Equipment</td>
<td>0.7%</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.3%</td>
<td>0.2%</td>
<td>CRT Monitors</td>
<td>0.0%</td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>CRT Televisions</td>
<td>0.0%</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Other Electronics</td>
<td>0.6%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.3%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Plastic</strong></td>
<td><strong>12.0%</strong></td>
<td></td>
<td><strong>82.0%</strong></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Other Untreated Wood</td>
<td>0.1%</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>New Painted Wood</td>
<td>1.7%</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Old Painted Wood</td>
<td>3.5%</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Creosote-treated Wood</td>
<td>0.2%</td>
</tr>
<tr>
<td>Tubs</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Other Treated Wood</td>
<td>2.3%</td>
</tr>
<tr>
<td>Expanded Poly, Non-food</td>
<td>4.5%</td>
<td>7.1%</td>
<td>Contaminated Wood</td>
<td>14.2%</td>
</tr>
<tr>
<td>Expanded Poly, Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td>New Gypsum Scrap</td>
<td>2.9%</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.8%</td>
<td>1.2%</td>
<td>Demo Gypsum Scrap</td>
<td>7.5%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
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<td>Carpet</td>
<td>5.6%</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
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<td>0.0%</td>
<td>Felt Carpet Pad</td>
<td>0.9%</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
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<td>0.0%</td>
<td>Fiberglass Insulation</td>
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</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
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<td>0.0%</td>
<td>Concrete</td>
<td>4.2%</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.5%</td>
<td>0.7%</td>
<td>Asphalt Paving</td>
<td>0.1%</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Other Aggregates</td>
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</tr>
<tr>
<td>Other Film</td>
<td>0.5%</td>
<td>0.2%</td>
<td>Rock</td>
<td>0.0%</td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Asphalt Shingles</td>
<td>0.1%</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.9%</td>
<td>1.2%</td>
<td>Other Asphaltic Roofing</td>
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</tr>
<tr>
<td>Durable Plastic Products</td>
<td>1.4%</td>
<td>1.5%</td>
<td>Ceramics</td>
<td>0.5%</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>3.2%</td>
<td>4.5%</td>
<td>Cement Fiber Board</td>
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<tr>
<td><strong>Glass</strong></td>
<td><strong>0.2%</strong></td>
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<td><strong>20.2%</strong></td>
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</tr>
<tr>
<td>Clear Bottles</td>
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<td>0.1%</td>
<td>Single-ply Roofing Membranes</td>
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</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Ceiling Tiles</td>
<td>0.0%</td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.1%</td>
<td>Other Construction</td>
<td>2.5%</td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
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<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
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<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
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</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metal</strong></td>
<td><strong>3.4%</strong></td>
<td></td>
<td><strong>11.0%</strong></td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Dried Latex Paint</td>
<td>0.0%</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
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<td>0.0%</td>
<td>Liquid Latex Paint</td>
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</tr>
<tr>
<td>Other Aluminum</td>
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<td>0.1%</td>
<td>Solvent-based Adhesives</td>
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</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Water-based Adhesives</td>
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</tr>
<tr>
<td>Steel Food Cans</td>
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<td>0.0%</td>
<td>Oil-based Paint/Thinner</td>
<td>0.0%</td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
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<td>0.0%</td>
<td>Caustic Cleaners</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other Ferrous</td>
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<td>0.5%</td>
<td>Pesticides/Herbicides</td>
<td>0.0%</td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Rechargeable Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>2.7%</td>
<td>3.6%</td>
<td>Other Dry-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Compostable Organics</strong></td>
<td><strong>3.7%</strong></td>
<td></td>
<td><strong>6.7%</strong></td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
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<td>0.0%</td>
<td>Wet-cell Batteries</td>
<td>0.0%</td>
</tr>
<tr>
<td>Prunings</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Gasoline/Kerosene</td>
<td>0.0%</td>
</tr>
<tr>
<td>Food</td>
<td>3.7%</td>
<td>5.9%</td>
<td>Motor Oil/Diesel Oil</td>
<td>0.0%</td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Asbestos</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Other Organics</strong></td>
<td><strong>1.1%</strong></td>
<td></td>
<td><strong>1.3%</strong></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Explosives</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>1.5%</td>
<td>1.0%</td>
<td>Medical Wastes</td>
<td>0.0%</td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.0%</td>
<td>0.1%</td>
<td>Other Cleaners/Chemicals</td>
<td>0.0%</td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Personal Care/Cosmetics</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.
5  Self-haul Composition by Generator Subtype

The 2017-18 study also collected samples of waste from five additional self-haul load subtypes representing targeted industry groups or organizations. Some of these loads were selected through the normal random selection process; however, to achieve the sample goals, some of these loads were targeted for sampling—ignoring the random selection process. The five targeted generator subtypes were:

- Construction contractors
- Charities/thrift stores (Goodwill, Salvation Army etc.)
- Junk Haulers (property cleanup companies such as 1-800-Junk-Be-Gone, Got Junk, etc.)
- Seattle Housing Authority
- University of Washington

Generator Subtype Findings

The following subsection details the waste composition findings for five targeted generator subtypes.

5.1.1 Construction Contractors

While it was not possible to estimate tons of self-hauled from Construction Contractors, the study captured 42 samples from this generator subtype. Figure 7 shows the composition of waste disposed. Logically, Construction Debris accounts for the largest share of material, with 83%.

![Figure 7. Composition Summary: Construction Contractors](image)

Table 33 lists the top ten components of waste disposed from Construction Contractors self-haulers. The top ten materials account for about 72% of the total, by weight. Clean dimension lumber is the single largest material with 20%, followed by contaminated wood with 9% and carpet with 8%. Please see Table 34 for a list of the detailed composition results.
Table 33. Top Ten Components: Construction Contractors  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Dimension Lumber</td>
<td>20.1%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>9.2%</td>
<td>29.3%</td>
</tr>
<tr>
<td>Carpet</td>
<td>7.8%</td>
<td>37.1%</td>
</tr>
<tr>
<td>Other Construction</td>
<td>7.4%</td>
<td>44.5%</td>
</tr>
<tr>
<td>Clean Engineered Wood</td>
<td>7.0%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Demo Gypsum Scrap</td>
<td>5.6%</td>
<td>57.1%</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>4.9%</td>
<td>62.0%</td>
</tr>
<tr>
<td>Concrete</td>
<td>3.8%</td>
<td>65.9%</td>
</tr>
<tr>
<td>New Gypsum Scrap</td>
<td>3.1%</td>
<td>69.0%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.6%</td>
<td>71.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71.5%</strong></td>
<td><strong>71.5%</strong></td>
</tr>
</tbody>
</table>
Table 34. Composition by Weight: Construction Contractors  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Percent</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
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<td>1.8%</td>
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</tr>
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<td>Newspaper</td>
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<td>0.0%</td>
<td>1.7%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.6%</td>
<td>0.9%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Waxed OCC</td>
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<td>0.0%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
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</tr>
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<td>Polystyrene Containers</td>
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</tr>
<tr>
<td>Compostable/Soiled</td>
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</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
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<td>Non-Comp. Single-use Food Service</td>
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</tr>
<tr>
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</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
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<td>#2 HDPE Colored Bottles</td>
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<tr>
<td>Other Bottles</td>
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</tr>
<tr>
<td>Tubing</td>
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</tr>
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<td>Expanded Poly. Non-food</td>
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</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
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<td>0.7%</td>
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</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
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<td>Non-Comp. Single-use Food Service</td>
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</tr>
<tr>
<td>Other Rigid Packaging</td>
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</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
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</tr>
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<tr>
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<td>Textiles/Clothing</td>
<td>0.2%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.3%</td>
<td>0.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potentially Harmful Wastes</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried Latex Paint</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid Latex Paint</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solvent-based Adhesives</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water-based Adhesives</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-based Paint/Thinners</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caustic Cleaners</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides/Herbicides</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rechargeable Batteries</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other Dry-cell Batteries</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet-cell Batteries</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline/Kerosene</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Oil/Diesel Oil</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asbestos</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosives</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Wastes</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Cleaners/Chemicals</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmaceuticals/Vitamins</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Care/Cosmetics</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Potentially Harmful Waste</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fines and Misc Materials</td>
<td>0.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand/Soil/Dirt</td>
<td>0.2%</td>
<td>0.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-distinct Fines</td>
<td>0.1%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Organics</td>
<td>0.3%</td>
<td>0.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Inorganics</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Charities and Thrift Stores self-hauled 8,235 tons of waste to the Seattle transfer stations during the study year. The study captured seven samples of waste from this generator subtype. Figure 8 shows the composition of waste disposed. As shown, Other Organics (25%) is the largest component, followed by Construction Debris (22%), and Plastic (16%).

Figure 8. Composition Summary: Charities and Thrift Stores

Table 35 lists the top ten components of waste disposed from Charities and Thrift Stores, which sum to approximately 75% of the total, by weight. Mixed textiles was the single largest material with 13%, followed by durable plastic products at 12% and textiles/clothing at 11%. Please see Table 36 for a list of the detailed composition results.

Table 35. Top Ten Components: Charities and Thrift Stores
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed Textiles</td>
<td>13.2%</td>
<td>13.2%</td>
<td>1,091</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>11.6%</td>
<td>24.8%</td>
<td>953</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>10.7%</td>
<td>35.5%</td>
<td>882</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>7.5%</td>
<td>43.0%</td>
<td>619</td>
</tr>
<tr>
<td>Ceramics</td>
<td>7.3%</td>
<td>50.3%</td>
<td>598</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>6.6%</td>
<td>56.9%</td>
<td>542</td>
</tr>
<tr>
<td>Other Glass</td>
<td>5.1%</td>
<td>62.0%</td>
<td>420</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>5.1%</td>
<td>67.0%</td>
<td>417</td>
</tr>
<tr>
<td>Miscellaneous Organics</td>
<td>4.1%</td>
<td>71.2%</td>
<td>341</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>4.1%</td>
<td>75.3%</td>
<td>338</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>75.3%</strong></td>
<td><strong>6,200</strong></td>
<td></td>
</tr>
</tbody>
</table>
Table 36. Composition by Weight: Charities and Thrift Stores
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
<th>Material Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>7.9%</td>
<td></td>
<td>652</td>
<td>Furniture, Appliances, and Electronics</td>
<td>1.9%</td>
<td>155</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.0%</td>
<td>0.1%</td>
<td>4</td>
<td>Furniture</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>0.5%</td>
<td>0.3%</td>
<td>42</td>
<td>Mattresses</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Small Appliances</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.4%</td>
<td>0.5%</td>
<td>31</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.1%</td>
<td>0.0%</td>
<td>10</td>
<td>Audio/Visual Equipment</td>
<td>1.3%</td>
<td>104</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>5.1%</td>
<td>3.9%</td>
<td>417</td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycarbonate Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>Other Electronics</td>
<td>0.6%</td>
<td>51</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>Construction Debris</td>
<td>21.8%</td>
<td>1,796</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>1.8%</td>
<td>0.3%</td>
<td>145</td>
<td>Clean Dimension Lumber</td>
<td>0.4%</td>
<td>35</td>
</tr>
<tr>
<td>Plastic</td>
<td>16.3%</td>
<td></td>
<td>1,346</td>
<td>Clean Engineered Wood</td>
<td>0.0%</td>
<td>3</td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3</td>
<td>Pallets</td>
<td>0.1%</td>
<td>7</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Crates</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Other Untreated Wood</td>
<td>0.4%</td>
<td>35</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>New Painted Wood</td>
<td>3.1%</td>
<td>259</td>
</tr>
<tr>
<td>Tubs</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0</td>
<td>Old Painted Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.1%</td>
<td>0.0%</td>
<td>12</td>
<td>Creosote-treated Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Other Treated Wood</td>
<td>3.1%</td>
<td>252</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Contaminated Wood</td>
<td>6.6%</td>
<td>542</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>New Gypsum Scrap</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Demo Gypsum Scrap</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.5%</td>
<td>0.3%</td>
<td>44</td>
<td>Carpet</td>
<td>0.2%</td>
<td>19</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Felt Carpet Pad</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>0.1%</td>
<td>5</td>
<td>Rock</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0</td>
<td>Asbestos Paving</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Film</td>
<td>0.2%</td>
<td>0.1%</td>
<td>13</td>
<td>Other Aggregates</td>
<td>0.6%</td>
<td>46</td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.0%</td>
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</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>11.6%</td>
<td>3.1%</td>
<td>953</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>3.7%</td>
<td>1.9%</td>
<td>301</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>7.8%</td>
<td></td>
<td>643</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>0.0%</td>
<td>9</td>
<td></td>
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</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.6%</td>
<td>0.7%</td>
<td>47</td>
<td></td>
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</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
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</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
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</tr>
<tr>
<td>Flat Glass</td>
<td>2.0%</td>
<td>0.0%</td>
<td>168</td>
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</tr>
<tr>
<td>Automotive Glass</td>
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<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>5.1%</td>
<td>3.6%</td>
<td>420</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>12.4%</td>
<td></td>
<td>1,018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.3%</td>
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<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>0.0%</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.4%</td>
<td>0.0%</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>4.1%</td>
<td>0.6%</td>
<td>338</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>7.5%</td>
<td>6.5%</td>
<td>619</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>0.0%</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prunings</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Organics</td>
<td>25.3%</td>
<td></td>
<td>2,079</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>10.7%</td>
<td>0.9%</td>
<td>882</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>13.2%</td>
<td>6.5%</td>
<td>1,091</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>1.3%</td>
<td>1.0%</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td></td>
<td>8,235</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Count</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

While it was not possible to estimate tons of waste self-hauled by Junk Haulers, the study captured 19 samples from this generator subtype. Figure 9 shows the composition of waste disposed. As shown, Construction Debris accounts for 44% of the material, by weight. The next largest proportion of the waste is comprised of Furniture, Appliances & Electronics with 35%.

![Figure 9. Composition Summary: Junk Haulers](image)

Table 37 lists the top ten components of waste disposed from Junk Haulers. The top ten materials account for about 76% of the total, by weight. Furniture was the single largest material with 17%, followed by mattresses with 16%. Please see Table 38 for a list of the detailed composition results.

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>17.0%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Mattresses</td>
<td>15.6%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Concrete</td>
<td>13.8%</td>
<td>46.5%</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>6.9%</td>
<td>53.4%</td>
</tr>
<tr>
<td>Pallets</td>
<td>5.1%</td>
<td>58.5%</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>4.5%</td>
<td>63.0%</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>3.5%</td>
<td>66.5%</td>
</tr>
<tr>
<td>Crates</td>
<td>3.5%</td>
<td>70.0%</td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.8%</td>
<td>72.8%</td>
</tr>
<tr>
<td>Prunings</td>
<td>2.7%</td>
<td>75.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>75.5%</strong></td>
<td></td>
</tr>
</tbody>
</table>
Table 38. Composition by Weight: Junk Haulers  
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Furniture, Appliances, and Electronics</th>
<th>Est. Percent</th>
<th>+ / -</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paper</strong></td>
<td>2.4%</td>
<td>0.1%</td>
<td>Furniture</td>
<td>17.0%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Mattresses</td>
<td>15.6%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Plain OCCS</td>
<td>1.3%</td>
<td>0.7%</td>
<td>Small Appliances</td>
<td>1.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.1%</td>
<td>0.1%</td>
<td>Audio/Visual Equipment</td>
<td>0.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.0%</td>
<td>0.0%</td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>0.6%</td>
<td>0.4%</td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Polycorated Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Other Electronics</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.2%</td>
<td>0.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Plastic</strong></td>
<td>3.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tubs</td>
<td>0.1%</td>
<td>0.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expanded Poly, Non-food</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expanded Poly, Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Film</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.2%</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.0%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>1.9%</td>
<td>1.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>0.8%</td>
<td>0.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glass</strong></td>
<td>1.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.2%</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>1.3%</td>
<td>1.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metal</strong></td>
<td>3.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>2.8%</td>
<td>3.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>2.1%</td>
<td>1.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compostable Organics</strong></td>
<td>3.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prunings</td>
<td>2.7%</td>
<td>4.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>0.4%</td>
<td>0.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Organics</strong></td>
<td>4.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>3.5%</td>
<td>2.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>1.2%</td>
<td>0.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The Seattle Housing Authority self-hauled 5,793 tons of waste to the Seattle transfer stations during the study year. The study captured seven samples of waste from this generator subtype. Figure 10 shows the composition of waste disposed. As shown, Compostable Organics with 30% and Other Organics at 22% were the two largest portions of the waste stream.

Figure 10. Composition Summary: Seattle Housing Authority

Table 39 lists the top ten components of waste disposed from the Seattle Housing Authority. Together, these ten materials account for about 75% of the total, by weight. Food was the single largest material with 30%, followed by disposable diapers with 12%. Please see Table 40 for a list of the detailed composition results.

Table 39. Top Ten Components: Seattle Housing Authority
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>29.6%</td>
<td>29.6%</td>
<td>1,716</td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>12.2%</td>
<td>41.9%</td>
<td>709</td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>5.5%</td>
<td>47.3%</td>
<td>316</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>5.0%</td>
<td>52.4%</td>
<td>292</td>
</tr>
<tr>
<td>Other Film</td>
<td>4.8%</td>
<td>57.1%</td>
<td>276</td>
</tr>
<tr>
<td>Contaminated Wood</td>
<td>4.2%</td>
<td>61.4%</td>
<td>246</td>
</tr>
<tr>
<td>Furniture</td>
<td>4.2%</td>
<td>65.5%</td>
<td>241</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>3.8%</td>
<td>69.3%</td>
<td>220</td>
</tr>
<tr>
<td>Animal By-products</td>
<td>2.9%</td>
<td>72.3%</td>
<td>170</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.7%</td>
<td>74.9%</td>
<td>156</td>
</tr>
<tr>
<td>Total</td>
<td>74.9%</td>
<td></td>
<td>4,341</td>
</tr>
</tbody>
</table>
### Table 40. Composition by Weight: Seattle Housing Authority (August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>16.0%</td>
<td></td>
<td>924</td>
<td>6.3%</td>
<td></td>
<td>364</td>
</tr>
<tr>
<td>Newspaper</td>
<td>1.1%</td>
<td>0.7%</td>
<td>67</td>
<td>4.2%</td>
<td>4.8%</td>
<td>241</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.7%</td>
<td>0.5%</td>
<td>156</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Waxed OCC</td>
<td>0.2%</td>
<td>0.0%</td>
<td>7</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.5%</td>
<td>0.4%</td>
<td>30</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>\</td>
<td>0.8%</td>
<td>1.1%</td>
<td>45</td>
<td>0.4%</td>
<td>0.0%</td>
<td>22</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>3.8%</td>
<td>0.5%</td>
<td>220</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycoated Containers</td>
<td>0.1%</td>
<td>0.0%</td>
<td>7</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>5.0%</td>
<td>1.2%</td>
<td>292</td>
<td>1.8%</td>
<td>2.0%</td>
<td>102</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.2%</td>
<td>0.2%</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.9%</td>
<td>0.3%</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>0.8%</td>
<td>0.0%</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>11.0%</td>
<td></td>
<td>637</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>1.2%</td>
<td>0.3%</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.4%</td>
<td>0.1%</td>
<td>25</td>
<td>0.3%</td>
<td>0.4%</td>
<td>20</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.4%</td>
<td>0.3%</td>
<td>20</td>
<td>0.3%</td>
<td>0.4%</td>
<td>17</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.1%</td>
<td>0.1%</td>
<td>7</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Tube</td>
<td>0.5%</td>
<td>0.3%</td>
<td>28</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.3%</td>
<td>0.1%</td>
<td>16</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.2%</td>
<td>0.1%</td>
<td>13</td>
<td>4.2%</td>
<td>5.5%</td>
<td>246</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2</td>
<td>2.6%</td>
<td>4.4%</td>
<td>150</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.2%</td>
<td>0.1%</td>
<td>11</td>
<td>0.4%</td>
<td>0.6%</td>
<td>23</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.7%</td>
<td>0.1%</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.5%</td>
<td>0.1%</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.2%</td>
<td>0.1%</td>
<td>11</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Film</td>
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<td>0.5%</td>
<td>276</td>
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</tr>
<tr>
<td>Plastic Pipe</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>1.1%</td>
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<td>62</td>
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</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>0.4%</td>
<td>0.2%</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>1.8%</td>
<td></td>
<td>105</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.5%</td>
<td>0.1%</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.4%</td>
<td>0.6%</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.3%</td>
<td>0.2%</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.5%</td>
<td>0.2%</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>3.3%</td>
<td></td>
<td>194</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.3%</td>
<td>0.1%</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.2%</td>
<td>0.1%</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.1%</td>
<td>0.0%</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Food Cans</td>
<td>0.4%</td>
<td>0.1%</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empty Aerosol Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ferrous</td>
<td>0.2%</td>
<td>0.1%</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>2.1%</td>
<td>2.2%</td>
<td>124</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compostable Organics</td>
<td>39.3%</td>
<td></td>
<td>1,755</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.7%</td>
<td>0.9%</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prunings</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>29.6%</td>
<td>1.7%</td>
<td>1,716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fines and Misc Materials</td>
<td>0.8%</td>
<td></td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles/Clothing</td>
<td>5.5%</td>
<td>2.1%</td>
<td>316</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Textiles</td>
<td>1.0%</td>
<td>0.1%</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>12.2%</td>
<td>1.0%</td>
<td>709</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal By-products</td>
<td>2.9%</td>
<td>0.1%</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber Products</td>
<td>0.1%</td>
<td>0.0%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100%</td>
<td></td>
<td>5,793</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The University of Washington self-hauled 2,328 tons of waste to the Seattle transfer stations during the study year. The study captured five samples of waste from this generator subtype. Figure 11 shows the composition of waste disposed. As shown, Compostable Organics and Paper were the two largest portions of the waste stream, each comprising 23%.

Figure 11. Composition Summary: University of Washington

Table 41 lists the top ten components of waste disposed from the University of Washington, which summed to approximately 81% of the total, by weight. Food was the single largest material with 23%, followed by medical wastes with 16%. Please see Table 42 for a list of the detailed composition results.

Table 41. Top Ten Components: University of Washington
(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>Cum. Percent</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>23.0%</td>
<td>23.0%</td>
<td>536</td>
</tr>
<tr>
<td>Medical Wastes</td>
<td>16.1%</td>
<td>39.1%</td>
<td>374</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>11.6%</td>
<td>50.7%</td>
<td>269</td>
</tr>
<tr>
<td>Other Film</td>
<td>9.2%</td>
<td>59.9%</td>
<td>215</td>
</tr>
<tr>
<td>New Painted Wood</td>
<td>7.4%</td>
<td>67.3%</td>
<td>172</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>4.4%</td>
<td>71.7%</td>
<td>103</td>
</tr>
<tr>
<td>Small Appliances</td>
<td>3.5%</td>
<td>75.2%</td>
<td>82</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>2.2%</td>
<td>77.4%</td>
<td>51</td>
</tr>
<tr>
<td>Disposable Diapers</td>
<td>1.9%</td>
<td>79.3%</td>
<td>45</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>1.8%</td>
<td>81.1%</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>81.1%</td>
<td>1,888</td>
<td></td>
</tr>
</tbody>
</table>
### Table 42. Composition by Weight: University of Washington

(August 1, 2017 to July 31, 2018)

<table>
<thead>
<tr>
<th>Material</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
<th>Est. Percent</th>
<th>+ / -</th>
<th>Est. Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paper</strong></td>
<td>22.9%</td>
<td></td>
<td>533</td>
<td>4.5%</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>Newspaper</td>
<td>0.2%</td>
<td>0.1%</td>
<td>5</td>
<td>Furniture</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Plain CCC/Kraft</td>
<td>2.2%</td>
<td>0.1%</td>
<td>51</td>
<td>Mattresses</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Waxed CCC</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Small Appliances</td>
<td>3.6%</td>
<td>0</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>0.3%</td>
<td>0.1%</td>
<td>12</td>
<td>Cell Phones</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>High-grade Paper</td>
<td>0.5%</td>
<td>0.3%</td>
<td>12</td>
<td>Audio/Visual Equipment</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Mixed Low-grade Paper</td>
<td>4.4%</td>
<td>0.4%</td>
<td>103</td>
<td>CRT Monitors</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Polycarbonate Containers</td>
<td>0.2%</td>
<td>0.1%</td>
<td>5</td>
<td>CRT Televisions</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Compostable/Soiled</td>
<td>0.0%</td>
<td>0.2%</td>
<td>299</td>
<td>Other Electronics</td>
<td>1.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>1.0%</td>
<td>0.1%</td>
<td>17</td>
<td>Clean Dimension Lumber</td>
<td>1.3%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.7%</td>
<td>0.1%</td>
<td>23</td>
<td>Construction Debris</td>
<td>9.7%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Mixed/Other Paper</td>
<td>1.8%</td>
<td>0.3%</td>
<td>41</td>
<td>Clean Engineered Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Plastic</strong></td>
<td>14.0%</td>
<td></td>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#1 PET Bottles</td>
<td>0.7%</td>
<td>0.0%</td>
<td>17</td>
<td>Crates</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>#2 HDPE Natural Bottles</td>
<td>0.2%</td>
<td>0.3%</td>
<td>5</td>
<td>Other Untreated Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>#2 HDPE Colored Bottles</td>
<td>0.3%</td>
<td>0.1%</td>
<td>6</td>
<td>New Painted Wood</td>
<td>7.4%</td>
<td>0%</td>
</tr>
<tr>
<td>Other Bottles</td>
<td>0.1%</td>
<td>0.1%</td>
<td>3</td>
<td>Old Painted Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Poly</td>
<td>1.1%</td>
<td>0.1%</td>
<td>26</td>
<td>Creosote-Treated Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Non-food</td>
<td>0.1%</td>
<td>0.0%</td>
<td>3</td>
<td>Other Treated Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Expanded Poly. Food-grade</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>Contaminated Wood</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Rigid Poly. Foam Insulation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>New Gypsum Scrap</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Pot. Comp. Single-use Food Service</td>
<td>0.4%</td>
<td>0.1%</td>
<td>9</td>
<td>Demo Gypsum Scrap</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Non-Comp. Single-use Food Service</td>
<td>0.4%</td>
<td>0.0%</td>
<td>8</td>
<td>Carpet</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Rigid Packaging</td>
<td>0.6%</td>
<td>0.2%</td>
<td>15</td>
<td>Felt Carpet Pad</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Shopping/Dry Cleaning Bags</td>
<td>0.2%</td>
<td>0.0%</td>
<td>5</td>
<td>Fiberglass Insulation</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Stretch Wrap</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Concrete</td>
<td>0.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Clean Polyethylene Film</td>
<td>0.4%</td>
<td>0.3%</td>
<td>175</td>
<td>Asphalt Paving</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Film</td>
<td>9.2%</td>
<td>0.0%</td>
<td>215</td>
<td>Other Aggregates</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Plastic Pipe</td>
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<td>1</td>
<td>Rock</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Foam Carpet Padding</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Asphalt Shingles</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Durable Plastic Products</td>
<td>0.5%</td>
<td>0.0%</td>
<td>11</td>
<td>Other Asphaltic Roofing</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Plastic/Other Materials</td>
<td>0.4%</td>
<td>0.1%</td>
<td>8</td>
<td>Other Construction</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Glass</strong></td>
<td>1.5%</td>
<td></td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear Bottles</td>
<td>0.9%</td>
<td>0.9%</td>
<td>22</td>
<td>Other Construction</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Green Bottles</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Bottles</td>
<td>0.3%</td>
<td>0.0%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Glass</td>
<td>0.3%</td>
<td>0.1%</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent Tubes</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFLs</td>
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<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Glass</td>
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<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automotive Glass</td>
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<td>0.0%</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Glass</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metal</strong></td>
<td>2.0%</td>
<td></td>
<td>46</td>
<td></td>
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</tr>
<tr>
<td>Aluminum Beverage Cans</td>
<td>0.2%</td>
<td>0.0%</td>
<td>5</td>
<td>Rechargeable Batteries</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Aluminum Foil/Containers</td>
<td>0.1%</td>
<td>0.1%</td>
<td>3</td>
<td>Other Dry-cell Batteries</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other Aluminum</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Wet-cell Batteries</td>
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</tr>
<tr>
<td>Other Nonferrous</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Gasoline/Kerosene</td>
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<tr>
<td>Steel Food Cans</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1</td>
<td>Motor Oil/Diesel Oil</td>
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<tr>
<td>Empty Aerosol Cans</td>
<td>0.1%</td>
<td>0.0%</td>
<td>1</td>
<td>Asbestos</td>
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</tr>
<tr>
<td>Other Ferrous</td>
<td>0.5%</td>
<td>0.2%</td>
<td>12</td>
<td>Explosives</td>
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</tr>
<tr>
<td>Oil filters</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
<td>Medical Wastes</td>
<td>16.1%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Mixed Metals/Material</td>
<td>1.1%</td>
<td>0.5%</td>
<td>26</td>
<td>Other Cleaners/Chemicals</td>
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</tr>
<tr>
<td><strong>Compostable Organics</strong></td>
<td>23.4%</td>
<td></td>
<td>545</td>
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</tr>
<tr>
<td>Leaves and Grass</td>
<td>0.1%</td>
<td>0.0%</td>
<td>2</td>
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<tr>
<td>Prunings</td>
<td>0.2%</td>
<td>0.4%</td>
<td>6</td>
<td></td>
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</tr>
<tr>
<td>Food</td>
<td>23.0%</td>
<td>2.2%</td>
<td>536</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fats, Oils, Grease</td>
<td>0.0%</td>
<td>0.0%</td>
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<td>Sand/Soil/Dirt</td>
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<tr>
<td><strong>Other Organics</strong></td>
<td>3.2%</td>
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<td>74</td>
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<tr>
<td>Textiles/Clothing</td>
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<tr>
<td>Disposable Diapers</td>
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<td>0.7%</td>
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<tr>
<td>Animal By-products</td>
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<tr>
<td>Rubber Products</td>
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<td>0.2%</td>
<td>5</td>
<td></td>
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<tr>
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<tr>
<td><strong>Totals</strong></td>
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<td></td>
<td>2,328</td>
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<td></td>
<td>100%</td>
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</tbody>
</table>

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

Waste samples were sorted by hand into 115 waste components, which are grouped into ten broad categories.

Medical wastes were excluded from sorting. A list of component categories and definitions follows.

Waste Components

PAPER

1. **NEWSPAPER**: Printed ground wood newsprint. Includes advertising “slicks” (glossy paper), if found mixed with newspaper; otherwise, ad slicks are included with mixed low grade.

2. **PLAIN OCC/KRAFT PAPER**: Old unwaxed/uncoated corrugated container boxes and Kraft paper.

3. **WAXED OCC**: Old waxed/coated corrugated container boxes and Kraft paper.

4. **GROCERY/SHOPPING BAGS**: Paper grocery and shopping bags. Includes all brown paper bags and bags with non-paper handles.

5. **HIGH-GRADE PAPER**: White and lightly colored bond, rag, or stationary grade paper. This includes white or lightly colored sulfite/sulfate bond, copy papers, notebook paper, envelopes, continuous-feed sulfite/sulfate computer printouts and forms of all types, excluding carbonless paper.

6. **MIXED LOW-GRADE PAPER**: Mixed paper acceptable in Seattle’s residential curbside program. This includes junk mail; magazines; colored papers; bleached Kraft; boxboard; mailing tubes; carbonless copy paper; ground wood computer printouts; paperback books; telephone directories; spiral notebooks; and frozen/refrigerator packaging. Excludes juice concentrate cans.

7. **POLYCOATED CONTAINERS**: Polycoated milk, ice cream, and aseptic juice containers, including those with plastic spouts attached.

8. **COMPOSTABLE/SOILED PAPER**: Paper towels, waxed paper, tissues, and other papers that were soiled with food during use (e.g., pizza box inserts).

9. **POTENTIALLY COMPOSTABLE SINGLE-USE FOOD SERVICE PAPER**: Paper plates, bowls, and cups, including wax-coated paper plates, bowls and cups and items labeled “compostable.” Excludes items with visible plastic coating or lining.

10. **NON-COMPOSTABLE SINGLE-USE FOOD SERVICE PAPER**: Paper plates, bowls, and cups not labeled “compostable” and that appear to have a plastic lining or coating.
11. **MIXED/OTHER PAPER**: Predominantly paper with other materials attached (e.g. orange juice cans), and other non-recyclable papers such as carbon copy paper, hardcover books, and photographs.

**PLASTIC**

12. **PET BOTTLES**: Blow-molded polyethylene terephthalate (#1) bottles and jars excluding toxic product containers.

13. **HDPE NATURAL BOTTLES**: Blow-molded high-density translucent polyethylene (#2) bottles and jars excluding toxic product containers. Examples include milk, juice, beverage, oil, vinegar, and distilled water.

14. **HDPE COLORED BOTTLES**: Blow-molded high-density colored polyethylene (#2) bottles and jars excluding toxic product containers. Examples include liquid detergent bottles and some hair care bottles.

15. **OTHER PLASTIC BOTTLES**: Blow-molded #3-#7 plastic bottles and jars and unknown bottles. Excludes toxic product containers.

16. **TUBS**: #1-#7 tubs such as yogurt, cottage cheese, prescription vials, and margarine. Excludes toxic product containers.

17. **EXPANDED POLYSTYRENE NON-FOOD GRADE**: Includes non-food packaging and finished products made of expanded polystyrene. Excludes Styrofoam products such as cups, plates, and bowls and rigid foam insulation.

18. **EXPANDED POLYSTYRENE FOOD-GRADE**: “Styrofoam” products used to contain food such as “clamshells,” cups, plates, and bowls.

19. **RIGID POLYSTYRENE FOAM INSULATION**: rigid panels of expanded polystyrene used to insulate walls and roofs. Excludes non-polystyrene rigid foam insulation.

20. **POTENTIALLY COMPOSTABLE SINGLE-USE FOOD SERVICE PLASTICS**: Includes clamshells, cups, cup lids, and salad trays labeled “compostable.” Excludes clamshells, cups plates and bowls and other food service items made of Styrofoam.

21. **NON-COMPOSTABLE SINGLE-USE FOOD SERVICE PLASTICS**: Includes forks and spoons, clamshells, cups, cup lids, and salad trays not labeled “compostable.” Excludes clamshells, cups plates and bowls and other food service items made of Styrofoam.

22. **OTHER RIGID PACKAGING**: #1-#7 and unmarked rigid plastic packaging (excluding expanded polystyrene -- Styrofoam), such as cookie tray inserts, plastic spools, plastic frozen food trays, plastic toothpaste tubes, and disposable plant pots. Also includes toxic product containers, such as for motor oil or antifreeze.

23. **CLEAN SHOPPING/DRY CLEANER BAGS**: Labeled grocery and merchandise, dry cleaner, and newspaper polyethylene film bags that were not contaminated with food, liquid or grit during use.

24. **STRETCH WRAP**: Polyethylene pallet wrap or stretch wrap.
25. **OTHER CLEAN POLYETHYLENE FILM**: Polyethylene film and bags, other than those identified above, which were not contaminated with food, liquid, or grit during use. Includes clean plastic sheeting, clean trash bags, and mattress packaging.

26. **OTHER FILM**: Film packaging not defined above, or: was contaminated with food, liquid or grit during use; is woven together (e.g., grain bags); or that contains multiple layers of film or other materials that have been fused together (e.g., potato chip bags). This category also includes contaminated plastic sheeting, photographic negatives, shower curtains, any bags used to contain food or liquid (e.g., produce), contaminated trash bags, used garbage bags, and shopping bags used as garbage bags.

27. **PLASTIC PIPE**: pipes and fittings made of PVC (polyvinyl chloride), ABS (acrylonitrile butadiene styrene), or other rigid plastics.

28. **FOAM CARPET PADDING**: foam material used under carpet to provide insulation and padding. Most commonly made of urethane foam. Can be solid-colored or have a marbled appearance.

29. **DURABLE PLASTIC PRODUCTS**: Finished plastic products made entirely of plastic such as toys, toothbrushes, vinyl hose, plastic lawn furniture, and foam mattresses. Includes fiberglass resin products and materials, and durable plastic pots.

30. **PLASTIC/OTHER MATERIALS**: Items that are predominately plastic with other materials attached such as disposable razors, pens, lighters, toys, and 3-ring binders.

**GLASS**

31. **CLEAR BEVERAGE**: Bottles that are clear in color, including pop, liquor, wine, juice, beer, and vinegar bottles.

32. **GREEN BEVERAGE**: Bottles that are green in color, including green pop, liquor, wine, beer, and lemon juice bottles.

33. **BROWN BEVERAGE**: Bottles that are brown in color, including brown pop, beer, liquor, juice, and extract bottles.

34. **CONTAINER GLASS**: Glass containers of all colors, holding solid materials such as mayonnaise, non-dairy creamer, and facial cream.

35. **FLUORESCENT TUBES**: Fluorescent light tubes.

36. **COMPACT FLUORESCENT LIGHTS (CFL)**: small, fluorescent bulbs similar in appearance to incandescent bulbs. These bulbs typically have a spiral or tubular design.

37. **FLAT GLASS**: Clear or tinted glass that is flat. Examples include glass window panes, doors and table tops, safety glass, and architectural glass. Excludes windshields, laminated glass, or any curved glass.

38. **AUTOMOTIVE GLASS**: Windshield and side window auto glass.
39. **OTHER GLASS**: Mirrors, light bulbs (except fluorescent tubes), glassware, and blue glass bottles.

**METAL**

40. **ALUMINUM CANS**: Aluminum beverage cans (UBC) and bi-metal cans made mostly of aluminum.

41. **ALUMINUM FOIL/CONTAINERS**: Aluminum food containers, trays, and foil.

42. **OTHER ALUMINUM**: Aluminum products and scrap such as window frames, cookware.

43. **OTHER NONFERROUS**: Metals not derived from iron, to which a magnet will not adhere, and which are not significantly contaminated with other metals or materials.

44. **STEEL FOOD CANS**: Steel food containers, including bi-metal cans made mostly of steel.

45. **EMPTY AEROSOL CANS**: Empty, mixed material/metal aerosol cans. (Aerosols that still contain product are sorted according to that material—for instance, solvent-based paint.)

46. **OTHER FERROUS**: Ferrous and alloyed ferrous scrap metals to which a magnet adheres and which are not significantly contaminated with other metals or materials.

47. **OIL FILTERS**: Metal oil filters used in cars and other automobiles.

48. **MIXED METALS/MATERIALS**: Items that are predominately metal with other materials attached such as motors, insulated wire, and finished products containing a mixture of metals, or metals and other materials. White goods are banned from Seattle’s disposal. However, segments of large appliances are occasionally found; they are included in this category.

**COMPOSTABLE ORGANICS**

49. **LEAVES AND GRASS**: Non-woody plant materials from a yard or garden area, including grass clippings, leaves, weeds, and garden wastes.

50. **PRUNINGS**: Cut prunings, 6" or less in diameter, from bushes, shrubs, and trees.

51. **FOOD**: Food wastes and scraps, including bone, rinds, etc. Excludes the weight of food containers, except when container weight is not appreciable compared to the food inside. Biodegradable packaging peanuts (made from corn starch) are also included in this category. Excludes fats, oils, and grease.

52. **FATS, OILS, AND GREASE**: Fatty by-products of food preparation. Includes cooking oil, butter, lard, and gravy. Can be in liquid or solid form.

**OTHER ORGANICS**

53. **TEXTILES**: Rag stock fabric materials including natural and synthetic textiles such as cotton, wool, silk, woven nylon, rayon, and polyester.
54. **MIXED TEXTILES**: Non-rag stock grade textiles such as upholstered items, non-leather shoes and handbags, heavy linens, and draperies.

55. **DISPOSABLE DIAPERS**: Diapers made from a combination of fibers, synthetic, and/or natural, and made for the purpose of single use. This includes disposable baby diapers and adult protective undergarments.

56. **ANIMAL BY-PRODUCTS**: Animal carcasses not resulting from food storage or preparation, animal wastes, and kitty litter.

57. **RUBBER PRODUCTS**: Finished products and scrap materials made of natural and synthetic rubber, such as bath mats, inner tubes, rubber hoses, rubber carpet padding, and foam rubber.

58. **TIRES**: Vehicle tires of all types. Tubes are put into the rubber category.

**FURNITURE, APPLIANCES, & ELECTRONICS**

59. **FURNITURE**: Mixed-material furniture such as upholstered chairs. Furniture that is made purely of one material, such as plastic or metal, would be categorized according to that material (e.g., plastic products or other ferrous metal).

60. **MATTRESSES**: Mattresses and box springs.

61. **SMALL APPLIANCES**: Small electric appliances such as toasters, microwave ovens, power tools, curling irons, and light fixtures.

62. **CELL PHONES**: Personal digital assistants (PDA) and cell phones.

63. **AUDIO/VISUAL EQUIPMENT**: Examples include stereos, radios, tape decks, VCRs, camcorders, and digital cameras.

64. **COMPUTER MONITORS**: Computer monitors containing a cathode ray tube (CRT).

65. **TELEVISIONS**: Television sets containing a cathode ray tube (CRT).

66. **OTHER ELECTRONICS**: Computer items not containing CRTs such as processors, mice and mouse pads, keyboards, disk drives, laptops, and other video display without cathode ray tubes (CRT).

**CONSTRUCTION DEBRIS**

67. **CLEAN DIMENSION LUMBER**: Milled lumber commonly used in construction for framing and related uses, including 2 x 4’s, 2 x 6’s, that is clean (only including trace amounts of paint, nails, and other contaminants). Includes 2 x 4’s with painted ends.

68. **CLEAN ENGINEERED WOOD**: Sheets of plywood, strandboard, particleboard, and other wood created using glue that are clean (only including trace amounts of paint, nails, and other contaminants).
69. **PALLETS**: Untreated wood pallets, whole and broken.

70. **CRATES**: Untreated crates, pieces of crates, and other packaging lumber/panelboard.

71. **OTHER UNTREATED WOOD**: Compostable prunings or stumps 6" or greater in diameter.

72. **NEW PAINTED WOOD**: Lumber and wood products from new construction that have been painted so as to render them difficult to compost.

73. **OLD PAINTED WOOD**: Painted wood from demolition jobs. May be flaky and oxidized. Includes lead-based painted wood

74. **CREOSOTE-TREATED WOOD**: Lumber and wood products that have been treated with creosote so as to render them difficult to compost (with generally 50% or more of the surface area treated).

75. **OTHER TREATED WOOD**: Lumber and wood products that have been treated (other than painted or treated with creosote) so as to render them difficult to compost. This includes chemically treated lumber.

76. **CONTAMINATED WOOD**: Predominantly wood and lumber products that are mixed with other materials in such a way that they cannot easily be separated. This includes wood with metal, gypsum, concrete, or other contaminants that would not compost easily.

77. **NEW GYPSUM SCRAP**: Calcium sulfate dehydrate sandwiched between heavy layers of Kraft-type paper. Also known as drywall. This category includes new drywall that has not been painted or treated in other ways. Excludes GP DensGlass (and other brands) of exterior or roof paneling which is gypsum sandwiched between a fiberglass-reinforced coating.

78. **DEMO GYPSUM SCRAP**: Used or demolition gypsum wallboard scrap that has been painted or treated.

79. **CARPET**: General category of flooring applications and non-rag stock textiles consisting of various natural or synthetic fibers bonded to some type of backing material.

80. **FELT CARPET PAD**: Fiber carpet pads made of jute, hair, or synthetic materials, such as recycled carpet fibers. This material may be coated with latex or other resin.

81. **FIBERGLASS INSULATION**: Fiberglass building and mechanical insulation, batt or rigid.

82. **CONCRETE**: A hard material made from sand, gravel, aggregate, cement mix, and water. This category includes concrete containing steel mesh and/or reinforcement bars, or "rebar". Examples include pieces of building foundations, concrete paving, and cinder blocks.

83. **ASPHALT PAVING**: A black or brown, tar-like material mixed with aggregate used as a paving material. This category includes asphalt paving containing steel mesh and/or reinforcement bars, or "rebar."
84. **OTHER AGGREGATES**: Aggregates other than concrete and asphalt paving such as bricks, masonry tile, and clay roofing tiles.

85. **ROCK**: Rock gravel larger than 2” in diameter.

86. **ASPHALT SHINGLES**: Roofing material composed of fiberglass or organic felts saturated with asphalt and covered with inert aggregates as well as attached roofing tar and tar paper. Commonly known as three-tab roofing shingles but including older designs as well.

87. **OTHER ASPHALTIC ROOFING**: Other roofing material made with layers of felt, asphalt, aggregates, and attached roofing tar and tar paper normally used on flat/low pitched roofs usually on commercial buildings. Includes tar and gravel or “built-up roof membranes” as well as other asphaltic roofing membranes.

88. **CERAMICS**: Finished ceramic or porcelain products such as toilets, sinks, and some dishware.

89. **CEMENT FIBER BOARD**: A composite building material containing cement and wood fiber. Includes Hardiplank, Hardiboard, tile backer board, and other similar products.

90. **DRIED LATEX PAINTS**: Water-based paints and similar products that have dried. Excludes empty paint containers and paint that is outweighed by that of the container.

91. **SINGLE-PLY ROOFING MEMBRANES**: Plastic roofing membranes typically installed in gray, white, or black sheets. This category includes thermoplastic membranes, such as PVC or thermoplastic olefin (TPO), or thermoset roofing membranes, such as Ethylene Propylene Diene Monomer (EPDM) or “rubber” roofs.

92. **CEILING TILES**: Fiber or composite acoustic ceiling tiles.

93. **OTHER CONSTRUCTION DEBRIS**: Construction debris (other than wood) that cannot be classified elsewhere and mixed fine building material scraps. For example, floor sweepings from construction activities containing sawdust, nails, wire, etc. Includes GP DensGlass (and other brands) of exterior or roof paneling which is gypsum sandwiched between a fiberglass-reinforced coating.

**POTENTIALLY HARMFUL WASTES**

94. **LIQUID LATEX PAINTS**: Water-based paints and similar products in liquid form. Excludes empty paint containers and paint that is outweighed by that of the container.

95. **SOLVENT-BASED ADHESIVES/GLUES**: Oil/resin/volatile solvent-based glues and adhesives, including epoxy, rubber cement, two-part glues and sealers, and auto body fillers.

96. **WATER-BASED ADHESIVES/GLUES**: Water-based glues, caulking compounds, grouts, and Spackle.

97. **OIL-BASED PAINT/SOLVENT**: Solvent-based paints, varnishes, and similar products. Various solvents, including chlorinated and flammable solvents, paint strippers, solvents
contaminated with other products such as paints, degreasers and some other cleaners if the primary ingredient is (or was) a solvent, or alcohol such as methanol and isopropanol.

98. **CAUSTIC CLEANERS**: Caustic acids and bases whose primary purpose is to clean surfaces, unclog drains, or perform other actions.

99. **PESTICIDES/HERBICIDES**: Variety of poisons with the purpose of discouraging or killing insects, weeds, or microorganisms. Fungicides and wood preservatives, such as pentachlorophenol, are also included.

100. **RECHARGEABLE BATTERIES**: Rechargeable batteries, such as those found in cordless power tools, cell phones, laptops, digital cameras, toothbrushes, and remote control toys.

101. **OTHER DRY-CELL BATTERIES**: Dry-cell batteries of various sizes and types as commonly used in households. Includes button cell batteries, such as those found in watches and hearing aids.

102. **WET-CELL BATTERIES**: Wet-cell batteries of various sizes and types as commonly used in automobiles.

103. **GASOLINE/KEROSENE**: Gasoline, diesel fuel, and fuel oils.

104. **MOTOR OIL/DIESEL OIL**: Lubricating oils, primarily used in vehicles but including other types with similar characteristics.

105. **ASBESTOS**: Asbestos and asbestos-containing wastes (if this is the primary hazard associated with these wastes).

106. **EXPLOSIVES**: Gunpowder, unspent ammunition, picric acid, and other potentially explosive chemicals.

107. **MEDICAL WASTES**: Materials typically discarded in a health care setting such as I.V. tubing and patient drapes, specimen containers, and Petri dishes. Medical wastes that could be considered a biohazard are weighed, but not further sorted.

108. **OTHER CLEANERS/CHEMICALS**: Non-caustic cleaners, and other household chemicals.

109. **PHARMACEUTICALS AND VITAMINS**: Both prescription and over-the-counter medications and supplements in all forms, including pills, liquid medications, creams, and ointments. Does not include containers for these items, except for tubes for creams and ointments and other containers that cannot be easily separated from the product they contain. (This component category was new to the 2017-18 study period.)

110. **PERSONAL CARE/COSMETICS**: Hygiene and grooming products, including bar soap, shower gel, shampoo, conditioner, hairspray, deodorant, body powder, lotions, nail polish and remover, makeup, etc. Does not include containers for these items, except when containers cannot be easily separated from the product they contain. (This component category was new to the 2017-18 study period.)
111. OTHER POTENTIALLY HARMFUL WASTES: Other chemicals or potentially harmful wastes that do not fit into the above categories, including unidentifiable materials.

FINES AND MISCELLANEOUS MATERIALS

112. SAND/SOIL/DIRT: Sand, soil, dirt, and gravel smaller than 2” in diameter.

113. NONDISTINCT FINES: Mixed MSW fines smaller than 2” in diameter.

114. MISCELLANEOUS ORGANICS: Combustible materials including wax; bar soap; cigarette butts; scraps of leather and leather products including shoes and belts; feminine hygiene products; briquettes; fireplace, burn barrel and fire pit ash; and other organic materials not classified elsewhere.

115. MISCELLANEOUS INORGANICS: Other inorganic, non-combustible materials not classified elsewhere.

Changes to Waste Component Categories

The material types used to categorize Seattle’s waste stream have been refined over the years. Table 43 tracks these changes. (An “X” signifies that the component remains the same from the previous study period; an outline border reflects how components were split apart or grouped together.)
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Seattle Public Utilities
2017/18 Self-haul Waste Stream Composition Study

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*After 1994, characterized according to predominant metal*

*(Before 1998/99, was not characterized)*

*(After 1994, banned from disposal. Parts show up in "Mixed Metals")*
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(COMPOSTABLE and OTHER ORGANICS Combined as ORGANICS prior to 2012)
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(Prior to 1994, split among various materials; Mixed Metal, Textiles, Other Plastics, etc.)

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### Table 43. Changes to Waste Component Categories, 1988 to present (continued)

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<td>Other Cleaners/Chemicals</td>
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**FINES AND MISCELLANEOUS MATERIALS**

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<td>Sand/Soil/Dirt</td>
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<td>Moved to &quot;Fines &amp; Miscellaneous Materials&quot;</td>
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</tr>
<tr>
<td>Sand/Soil/Dirt</td>
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</tr>
<tr>
<td>Ash</td>
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</tr>
<tr>
<td>Leather</td>
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<td>x</td>
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</tr>
<tr>
<td>(Prior to 1994, mostly in &quot;Sand, Dirt, Non-distinct Fines; also in various &quot;Mixed&quot; and &quot;Other&quot; categories)</td>
<td>Misc. Organics</td>
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<td>x</td>
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<tr>
<td>(Prior to 1994, mostly in &quot;Sand, Dirt, Non-distinct Fines; also in various &quot;Mixed&quot; and &quot;Other&quot; categories)</td>
<td>Misc. Inorganics</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>(Prior to 1994, mostly in &quot;Sand, Dirt, Non-distinct Fines; also in various &quot;Mixed&quot; and &quot;Other&quot; categories)</td>
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<tr>
<td>(Prior to 1994, mostly in &quot;Sand, Dirt, Non-distinct Fines; also in various &quot;Mixed&quot; and &quot;Other&quot; categories)</td>
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</tbody>
</table>
Appendix B. Sampling Methodology

Overview
The objective of the 2017-18 Seattle Waste Composition Study is to provide statistically significant data on the composition of self-haul wastes in the City of Seattle. Self-haul wastes were last sampled in 2012. The current project follows the same basic methodology as the 2012 study. However, the component categories and definitions have been revised and are included in Waste Component Categories.

Substream Definition
For any specific geographic area, the total waste stream is composed of various substreams. A “substream” is determined by the particular generation, collection, or composition characteristics that make it a unique portion of the total waste stream. This study targets the self-haul substream, one of three main substreams in Seattle.

The self-haul substream comprises waste that is: a) generated at residences as well as businesses and institutions; and, b) hauled by the household or business that generated the waste or a non-franchised hauler. The self-haul substream is composed of four subpopulations as shown in Figure 12. Subpopulations are defined according to generator type and disposal station. All self-haul waste included in the study is disposed at one of two City-owned facilities: North Recycling and Disposal Station (NRDS) or South Recycling and Disposal Station (SRDS).

Generator types are defined as follows.
- **Self-haul Non-residential**: Waste that is hauled to NRDS or SRDS by a commercial enterprise (landscaper, contractor, etc.), including waste from residential dwellings.
- **Self-haul Residential**: Waste that is hauled to the NRDS or SRDS by a resident from the resident’s home.

Figure 12. Self-haul Subpopulations, by Generator Type and Service Area

<table>
<thead>
<tr>
<th>Disposal Station</th>
<th>Generator Type</th>
<th>Non-residential</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td>Non-residential</td>
<td>NRDS</td>
<td>Residential NRDS</td>
</tr>
<tr>
<td>SRDS</td>
<td>Non-residential</td>
<td>SRDS</td>
<td>Residential SRDS</td>
</tr>
</tbody>
</table>

---

6 The residential and commercial substreams were not included in this study. For the most recent analysis of Seattle’s residential waste stream, please see the 2014 Residential Waste Composition Study Final Report prepared for the Seattle Public Utilities by Cascadia Consulting Group, Inc. For the most recent analysis of Seattle’s commercial waste stream, please see the 2016 Commercial and Self-haul Waste Streams Composition Study prepared for the Seattle Public Utilities by Cascadia Consulting Group, Inc.
For this study, we will also target samples of waste from five additional self-haul load subtypes representing targeted industry groups/organizations. These five load subtypes are:

- Construction contractors
- Charities/thrift stores (Goodwill, Salvation Army etc.)
- Junk Haulers (property cleanup companies such as 1-800-Junk-Be-Gone, Got Junk, etc.)
- Seattle Housing Authority
- University of Washington

Details on how Cascadia will obtain samples from each of the targeted load subtypes are provided in the Load Selection subsection.

**Sample Allocation**

For this study, a total of 216 self-haul samples will be characterized. Since the proportion of self-haul tonnage transported to the North and South Stations is nearly equal (51% and 49%, respectively), half of the self-haul samples will be allocated to each facility: 108 at NRDS and 108 at SRDS. This study will not stratify samples by generator type, since data from the study will also be used to determine the relative mix of residential and commercial loads arriving at each recycling and disposal station.

**Sampling Calendar**

At least 216 self-haul samples will be sorted during this study. Due to the expense of moving the sampling crew from site to site, sorting will occur at only one facility per sampling day. Since the field crew can sort approximately 18 self-haul loads per day, 12 days of sampling will be required to meet the study's sampling goals. In order to capture any seasonal variation, the sampling events will be distributed across the 12-month study period. Sampling will occur every other month for two consecutive days each selected month, for a total of 12 days of sampling.

Working around major holidays and the sorting crew’s availability, sampling dates within each month were selected using a random number generator, and refined so that the distribution across weeks of the month and days of the week will be roughly even. Whenever possible, the sampling dates for the self-haul waste sorts will be scheduled contiguously. The sampling calendar was designed using the following steps.

1. Starting in September 2017, every other month was selected to identify six sampling events.
2. The week of the month was randomly selected using the Randbetween() function in Excel.
3. Three weekend sampling days were allocated based on 2016 tonnage data and randomly selected among the six selected sampling months (November, May, and July).
4. For remaining months (September, January, March), a starting day of Tuesday, Wednesday or Thursday was randomly selected. Monday and Friday were not eligible start days for these months since Monday and Fridays are the only weekdays possible with the weekend days.
5. Based on selected weeks of the month and weekdays, the calendar was used to find the starting date for each month (e.g., January will start on the 1st Thursday or 1/4/18).
6. Finally, a random selection method was used to select NRDS or SRDS for the first day of each sampling event. The second day was the alternate station.

The sampling calendar is shown in Table 44. The resulting allocation of waste sampling days is shown in Table 45.

### Table 44. Sampling Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Facility</th>
<th>No. of Samples</th>
<th>Day of the Week</th>
<th>Week of the Month</th>
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</thead>
<tbody>
<tr>
<td>9/6/17</td>
<td>South</td>
<td>18</td>
<td>Wednesday</td>
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<td>9/7/17</td>
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<td>11/17/17</td>
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<td>11/18/17</td>
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<td>1/4/18</td>
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<td>1/5/18</td>
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<td>2</td>
</tr>
<tr>
<td>3/14/18</td>
<td>South</td>
<td>18</td>
<td>Wednesday</td>
<td>2</td>
</tr>
<tr>
<td>5/18/18</td>
<td>South</td>
<td>18</td>
<td>Friday</td>
<td>3</td>
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<td>5/19/18</td>
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<td>7/22/18</td>
<td>South</td>
<td>18</td>
<td>Sunday</td>
<td>4</td>
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<tr>
<td>7/23/18</td>
<td>North</td>
<td>18</td>
<td>Monday</td>
<td>4</td>
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</table>

### Table 45. Distribution of Sampling Days

<table>
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<th>Week of the Month</th>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Total</th>
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<td>1</td>
<td>2</td>
<td>1</td>
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</tr>
<tr>
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<td>2</td>
<td>3</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

### Hauler and Transfer Station Participation

Staff at the City’s two transfer stations will receive the sampling schedule for the year and will be informed prior to each sampling event. We will rely on the help of transfer station staff to help select special loads as described below.

### Load Selection

Self-haul loads will be systematically selected at each facility. Systematic selection consists of taking every “nth” vehicle that enters the facility after a randomly selected start time. The sampling intervals (n) will be determined by dividing the day’s expected number of arriving vehicles by the number of samples needed on that day. This method of selecting vehicles will provide a representative number of samples for the non-residential and residential generators of
self-haul waste. The expected traffic count will be based on either the average weekday or weekend vehicle count from the same month in 2016.

In addition to the above method for randomly selecting vehicles, we will also request the help of transfer station staff to select one load from each of the below targeted generator subtypes each day for a total of 12 loads per subtype over the course of the study.

- Construction contractors
- Charities/thrift stores (Goodwill, Salvation Army etc.)
- Junk Haulers (property cleanup companies such as 1-800-Junk-Be-Gone, Got Junk, etc.)
- Seattle Housing Authority
- University of Washington

Cascadia will work with transfer station staff to ensure that all station greeters are aware of specific sampling goals for these loads. Station greeters will be provided with sample placards for each of the generator subtypes. During each sampling day, the station greeters will select one these loads by providing a sample placard to, typically, the first load of each of these five generator subtypes that they see. The greeter will then communicate with the crew that they have selected a load for sampling.

Field Procedures

The Field Supervisor will coordinate vehicle selection, sample extraction, sorting, and disposal of sorted waste with the transfer station manager.

When a vehicle selected for sampling arrives, the Field Supervisor will obtain the origin, generator, and residence type for loads originating from residential generators. For loads originating from commercial generators, the Field Supervisor will ask drivers to identify the type of business the sample load is from. Drivers will also be asked whether they have accounts at the transfer station. Table 46 lists Standard Industry Codes (SIC) by business type, which the Field Supervisor will use to categorize loads. Information collected from each driver, including SICs, will be recorded on the load’s corresponding tally sheet.
Table 46. SIC Codes, by Business Type

<table>
<thead>
<tr>
<th>Business Type</th>
<th>SIC Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction, Demolition, and Landclearing</td>
<td>15-17</td>
</tr>
<tr>
<td>Education</td>
<td>82</td>
</tr>
<tr>
<td>Health Care</td>
<td>80</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>70</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>20, 22-26, 28-36, 38-39, 372, 373, 376</td>
</tr>
<tr>
<td>Office</td>
<td>01-02, 08-09, 10, 14, 27, 48, 49, 60-67, 73, 81</td>
</tr>
<tr>
<td>Other Non-residential</td>
<td>- -</td>
</tr>
<tr>
<td>Other Services</td>
<td>7, 55, 72, 75, 76, 78-79, 84, 86, 89</td>
</tr>
<tr>
<td>Restaurant</td>
<td>58</td>
</tr>
<tr>
<td>Retail</td>
<td>52-54, 56-57, 59</td>
</tr>
<tr>
<td>Transportation</td>
<td>40-47, 371, 374, 375, 379</td>
</tr>
<tr>
<td>Wholesale</td>
<td>50, 51</td>
</tr>
<tr>
<td>Mixed Commercial Generators</td>
<td>- -</td>
</tr>
</tbody>
</table>

Large (greater than 250 pounds) loads will be entirely sorted, or a 250 pound sample will be randomly selected using a superimposed 8-cell grid and a pre-assigned random number that identifies the cell from which to extract a sample. The randomly selected cell number appears on the vehicle selection sheet. If the load is less than 250 pounds, then the next vehicle of the same generator group (residential or commercial) will also be selected. A sample will be captured from this vehicle and combined with the first load, so that the weight of the two samples equals at least 250 pounds.

The Field Supervisor will give the drivers of non-passenger vehicles a net weight card to use to record the load weight once the vehicle scales out. For passenger vehicles (which transfer station staff do not weigh), the total weight of the sample will be equal to the weight of the load if the full load is sorted. Otherwise, the Field Supervisor will estimate what percentage of the load was sorted and will estimate the weight of the load.

Once a sample of waste is selected, it will be placed on a tarp for sorting. Each sample will be sorted by hand into the defined component categories. (See Waste Component Categories for component definitions.). Each sample will be sorted to the greatest reasonable detail. The weights of all materials will be recorded on tally sheets; an example tally sheet is shown in Field Forms.
Appendix C. Comments on Monthly Sampling Events

For the 2017-18 study, sampling was planned every other month for two consecutive days each selected month, for a total of 12 days of sampling. This appendix summarizes sampling activities for each selected month.

September 2017

The September 2017 sampling occurred on 9/6 and 9/7. Table 47 compares the number of samples that were actually sorted to the number originally planned by date. The goal for each day was 18 samples. The sampling goal was achieved both days, however, two of the samples from 9/7 were excluded from the analysis due to missing or incorrect sample information.

Table 47. Summary of Planned vs. Actual Samples Completed by Date, September 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Station</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/6/17</td>
<td>South</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>9/7/17</td>
<td>North</td>
<td>18</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
<td>34</td>
<td>-2</td>
</tr>
</tbody>
</table>

In addition to the overall sampling target, the sampling plan targets sampling at least one vehicle from each of the following target self-haul generator categories:

- Construction contractors
- Charities/Thrift stores
- Junk Haulers
- Seattle Housing Authority
- University of Washington

On the first day of sampling (9/6), these generator-specific sampling targets were met for all categories except for University of Washington. We were told by the South Station staff that University of Washington does not haul to the South Station so the goal was adjusted for future sampling events. On the second day (9/7), only the targets for construction contractors and junk haulers were achieved. It appears that charities/thrift store loads did not arrive while the crew was on site. Seattle Housing Authority loads may not typically come to North Station. University of Washington loads are hauled to North Station, but they enter through the automated commercial door, and the crew was not alerted when one arrived. The targeted generator category sample count data is summarized in Table 48.

For future sampling events, we adjusted these targets and resolved the barrier to sampling University of Washington loads at the North Station.
Table 48. Summary of Planned vs. Actual Samples Completed by Generator Category, September 2017

<table>
<thead>
<tr>
<th>Generator Category</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction contractors</td>
<td>2</td>
<td>4</td>
<td>+2</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
<td>0</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8</strong></td>
<td><strong>8</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

**November 2017**

The November 2017 sampling occurred on 11/17 and 11/18. Table 49 compares the number of samples that were actually sorted to the number originally planned by date. The goal for each day was 18 samples. The goal was achieved both days.

Table 49. Summary of Planned vs. Actual Samples Completed by Date, November 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Station</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/17/17</td>
<td>South</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>11/18/17</td>
<td>North</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>36</strong></td>
<td><strong>36</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

In addition to general self-haul loads, the sampling plan included sampling goals for the targeted generator categories. On the first day of sampling (11/17), the generator-specific sampling targets were met for all categories except for charities/thrift stores. On the second day (11/18), the targets were met. The targeted generator category sample count data is summarized in Table 50.
Table 50. Summary of Planned vs. Actual Samples Completed by Generator Category, November 2017

<table>
<thead>
<tr>
<th>Generator Category</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction contractors</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8</strong></td>
<td><strong>7</strong></td>
<td><strong>-1</strong></td>
</tr>
</tbody>
</table>

As shown in Table 51, the total samples completed by station match the target. By generator subtype, we are meeting the targets for construction contractors, junk haulers, and Seattle Housing Authority, but not for charities/thrift stores (down by two samples) or University of Washington (down by one sample).

Table 51. Summary of Overall Sampling Progress, Through November 2017

<table>
<thead>
<tr>
<th>Samples by Generator Category</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Contractors</td>
<td>4</td>
<td>6</td>
<td>+2</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>4</td>
<td>2</td>
<td>-2</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Samples by Station</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>36</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>North</td>
<td>36</td>
<td>34</td>
<td>-2</td>
</tr>
<tr>
<td><strong>Total by Station</strong></td>
<td><strong>72</strong></td>
<td><strong>70</strong></td>
<td><strong>-2</strong></td>
</tr>
</tbody>
</table>

January 2018

Sampling took place over four days in January 2018, two planned days and two make-up days. The two additional days were necessary to catch up on the missing targeted generator samples. Table 52 compares the number of samples that were actually sorted with the number originally planned for sorting on 1/4, 1/5, 1/25 and 1/26. There was no sampling goal for 1/4 and 1/5 and the goal for 1/25 and 1/26 was 18 samples each day. The sample goals were achieved each day.
In addition to general self-haul loads, the sampling plan included sampling goals for the targeted generator categories. We collected samples from targeted generator categories across all four January sampling days (1/4, 1/5, 1/25, and 1/26). On the NRDS sampling days, Cascadia met or exceeded these generator-specific sampling targets for all categories except charities/thrift stores. On the SRDS sampling days, the targets were met or exceeded. The targeted generator category sample count data is summarized in Table 53.

Table 52. Summary of Planned vs. Actual Samples Completed by Date, January 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Station</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4/18</td>
<td>North</td>
<td>0</td>
<td>4</td>
<td>+4</td>
</tr>
<tr>
<td>1/5/18</td>
<td>South</td>
<td>0</td>
<td>4</td>
<td>+4</td>
</tr>
<tr>
<td>1/25/18</td>
<td>North</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>1/26/18</td>
<td>South</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
<td>44</td>
<td>+8</td>
</tr>
</tbody>
</table>

As shown in Table 54, the total samples completed by station exceed the target by at least two samples. By generator subtype, we are meeting or exceeding the targets for all groups other than charities/thrift stores (down by three samples).

Table 53. Summary of Actual Samples Completed by Generator Category, January 2018

<table>
<thead>
<tr>
<th>Generator Category</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction contractors</td>
<td>2</td>
<td>6</td>
<td>+4</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>2</td>
<td>3</td>
<td>+1</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
<td>2</td>
<td>+1</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>13</td>
<td>+5</td>
</tr>
</tbody>
</table>
Table 54. Summary of Overall Sampling Progress, Through January 2018

<table>
<thead>
<tr>
<th>Samples by Generator Category</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Contractors</td>
<td>6</td>
<td>12</td>
<td>+6</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>6</td>
<td>3</td>
<td>-3</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>6</td>
<td>7</td>
<td>+1</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Samples by Station</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>54</td>
<td>58</td>
<td>+4</td>
</tr>
<tr>
<td>North</td>
<td>54</td>
<td>56</td>
<td>+2</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>114</td>
<td>+6</td>
</tr>
</tbody>
</table>

March 2018

The March 2018 sampling took place over two days, 3/13 and 3/14. Table 55 compares the number of samples that were actually sorted with the number originally planned for sorting on March 13 and 14. The goal for each day was 18 samples, and that goal was achieved both days.

Table 55. Summary of Planned vs. Actual Samples Completed by Date, March 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Station</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/14/18</td>
<td>North</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>3/15/18</td>
<td>South</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
<td>36</td>
<td>0</td>
</tr>
</tbody>
</table>

In addition to general self-haul loads, the sampling plan included sampling goals for the targeted generator categories. We collected samples from targeted generator categories on both March sampling days. On the NRDS sampling days, Cascadia met or exceeded these generator-specific sampling targets for all categories except charities/thrift stores. On the SRDS sampling days, the targets were met or exceeded. The targeted generator category sample count data is summarized in Table 56.
Table 56. Summary of Actual Samples Completed by Generator Category, March 2018

<table>
<thead>
<tr>
<th>Generator Category</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction contractors</td>
<td>2</td>
<td>8</td>
<td>+6</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>2</td>
<td>4</td>
<td>+2</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>1</td>
<td>2</td>
<td>+1</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>8</td>
<td>17</td>
<td>+9</td>
</tr>
</tbody>
</table>

As shown in Table 57, the total samples completed by station exceed the target by at least two samples. By generator subtype, we are meeting or exceeding the targets for all groups other than charities/thrift stores (down by three samples).

Table 57. Summary of Overall Sampling Progress, Through March 2018

<table>
<thead>
<tr>
<th>Samples by Generator Category</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Contractors</td>
<td>8</td>
<td>20</td>
<td>+12</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>8</td>
<td>5</td>
<td>-3</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>8</td>
<td>11</td>
<td>+3</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>4</td>
<td>5</td>
<td>+1</td>
</tr>
<tr>
<td>University of Washington</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Samples by Station</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>72</td>
<td>76</td>
<td>+4</td>
</tr>
<tr>
<td>North</td>
<td>72</td>
<td>74</td>
<td>+2</td>
</tr>
<tr>
<td>Total</td>
<td>144</td>
<td>150</td>
<td>+6</td>
</tr>
</tbody>
</table>

May 2018

The May 2018 sampling occurred on 5/18 and 5/19. Table 58 compares the number of samples that were actually sorted with the number originally planned for sorting on May 18 and 19. The goal for each day was 18 samples, and that goal was achieved both days.
In addition to general self-haul loads, the sampling plan included sampling goals for the targeted generator categories. We collected samples from targeted generator categories on both May sampling days. On the SRDS sampling day, Cascadia met or exceeded these generator-specific sampling targets for all categories. On the NRDS sampling day, the targets were exceeded for construction contractors and junk haulers. We did not see any loads from charities/thrift stores, Seattle Housing Authority, or University of Washington, possibly because it was a Saturday. The targeted generator category sample count data is summarized in Table 59.

As shown in Table 60, the total samples completed by station exceed the target by at least two samples. By generator subtype, we are meeting or exceeding the targets for all groups except for charities/thrift stores (down by four samples) and University of Washington (down by one sample).
Table 60. Summary of Overall Sampling Progress, Through May 2018

<table>
<thead>
<tr>
<th>Samples by Generator Category</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Contractors</td>
<td>10</td>
<td>28</td>
<td>+18</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>10</td>
<td>6</td>
<td>-4</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>10</td>
<td>15</td>
<td>+5</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>5</td>
<td>6</td>
<td>+1</td>
</tr>
<tr>
<td>University of Washington</td>
<td>5</td>
<td>4</td>
<td>-1</td>
</tr>
</tbody>
</table>

Samples by Station

<table>
<thead>
<tr>
<th>Samples by Station</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>90</td>
<td>94</td>
<td>+4</td>
</tr>
<tr>
<td>North</td>
<td>90</td>
<td>92</td>
<td>+2</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>186</td>
<td>+6</td>
</tr>
</tbody>
</table>

July 2018

The July 2018 sampling took place over two days. Table 61 compares the number of samples that were actually sorted with the number originally planned for sorting on July 22 and 23. The goal for each day was 18 samples. That goal was achieved on the SRDS sampling day and exceeded by one sample on the NRDS sampling day.

Table 61. Summary of Planned vs. Actual Samples Completed by Date, July 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Station</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/22/2018</td>
<td>South</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>7/23/2018</td>
<td>North</td>
<td>18</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
<td>37</td>
<td>1</td>
</tr>
</tbody>
</table>

In addition to general self-haul loads, the sampling plan included sampling goals for the targeted generator categories. We collected samples from targeted generator categories on both July sampling days. At the NRDS, the targets were exceeded or met for all targeted generators except charities/thrift stores. At the SRDS, the targets were exceeded or met for all targeted generators. The targeted generator category sample count data is summarized in Table 62.
Table 62. Summary of Actual Samples Completed Generator Category, July 2018

<table>
<thead>
<tr>
<th>Generator Category</th>
<th>Target # of Samples</th>
<th>Actual # of Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction contractors</td>
<td>2</td>
<td>14</td>
<td>+12</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>2</td>
<td>4</td>
<td>+2</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>University of Washington</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8</strong></td>
<td><strong>21</strong></td>
<td><strong>+13</strong></td>
</tr>
</tbody>
</table>

As shown in Table 63, the total samples completed by station exceed the target by three samples at the NRDS and four samples at the SRDS. By generator subtype, we have met or exceeded the targets for all groups except for charities/thrift stores (down by five samples) and University of Washington (down by one sample).

Table 63. Summary of Overall Sampling Progress, Through July 2018

<table>
<thead>
<tr>
<th>Samples by Generator Category</th>
<th>Target Number</th>
<th>Actual Samples</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Contractors</td>
<td>12</td>
<td>42</td>
<td>+30</td>
</tr>
<tr>
<td>Charities/Thrift stores</td>
<td>12</td>
<td>7</td>
<td>-5</td>
</tr>
<tr>
<td>Junk Haulers</td>
<td>12</td>
<td>19</td>
<td>+7</td>
</tr>
<tr>
<td>Seattle Housing Authority</td>
<td>6</td>
<td>7</td>
<td>+1</td>
</tr>
<tr>
<td>University of Washington</td>
<td>6</td>
<td>5</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Samples by Station</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>108</td>
<td>112</td>
<td>+4</td>
</tr>
<tr>
<td>North</td>
<td>108</td>
<td>111</td>
<td>+3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
<td><strong>223</strong></td>
<td><strong>+7</strong></td>
</tr>
</tbody>
</table>
Appendix D. Waste Composition Calculations

Composition Calculations

The composition estimates represent the ratio of the components’ weight to the total waste for each noted substream. They are derived by summing each component’s weight across all of the selected records and dividing by the sum of the total weight of waste, as shown in the following equation:

\[
 r_j = \frac{\sum_i c_{ij}}{\sum_i w_i}
\]

where:
- \( c \) = weight of particular component
- \( w \) = sum of all component weights

for \( i = 1 \) to \( n \) where \( n \) = number of selected samples

for \( j = 1 \) to \( m \) where \( m \) = number of components

The confidence interval for this estimate is derived in two steps. First, the variance around the estimate is calculated, accounting for the fact that the ratio includes two random variables (the component and total sample weights). The variance of the ratio estimator equation follows:

\[
 \hat{V}_{r_j} = \left( \frac{1}{n} \right) \cdot \left( \frac{1}{w^2} \right) \cdot \left[ \frac{\sum_i (c_{ij} - r_j w_i)^2}{n-1} \right]
\]

where:
- \( \bar{w} = \frac{\sum_i w_i}{n} \)

Second, confidence intervals at the 90% confidence level are calculated for a component’s mean as follows:

\[
 r_j \pm t \cdot \sqrt{\hat{V}_{r_j}}
\]

where:
- \( t \) = the value of the t-statistic (1.645) corresponding to a 90% confidence level

For more detail, please refer to Chapter 6 “Ratio, Regression and Difference Estimation” of *Elementary Survey Sampling* by R.L. Scheaffer, W. Mendenhall and L. Ott (PWS Publishers, 1986).
Weighted Averages

The overall self-haul waste composition estimates were calculated by performing a weighted average across the relevant substreams. For the self-haul substream, the overall estimate was calculated by performing a weighted average based on the tonnage hauled each season to each site, by vehicle type.

Seattle provided the estimate of tonnage disposed by the self-haul substream for the study period August 1, 2017 to July 31, 2018. The composition estimates for each substream and subpopulation were applied to the relevant tonnages to estimate the amount of waste disposed for each component category.

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

\[ O_j = \left( p_1 \times r_{j1} \right) + \left( p_2 \times r_{j2} \right) + \left( p_3 \times r_{j3} \right) + \ldots \]

where:
- \( p \) = the proportion of tonnage contributed by the noted substream
- \( r \) = ratio of component weight to total waste weight in the noted substream

for \( j = 1 \) to \( m \)

where \( m \) = number of components

The variance of the weighted average is calculated:

\[ VarO_j = \left( p_1^2 \times \hat{V}_{r_{j1}} \right) + \left( p_2^2 \times \hat{V}_{r_{j2}} \right) + \left( p_3^2 \times \hat{V}_{r_{j3}} \right) + \ldots \]

The weighting percentages that were used to perform the composition calculations are listed below.

Table 64 to Table 72 pertain to the self-haul substream and its respective subpopulations. Weighting percentages were not used to perform composition calculations on self-haul sampling data by generator type.

Seattle Public Schools waste is collected by Waste Management, but included in SPU reports as self-haul. This waste is included in commercial substream sampling, so the tons will be subtracted from the self-haul substream totals.
<table>
<thead>
<tr>
<th>Site</th>
<th>Vehicle Type</th>
<th>Season</th>
<th>Tons of Season Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td>Passenger Car</td>
<td>Spring</td>
<td>543</td>
<td>0.55%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summer</td>
<td>617</td>
<td>0.63%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autumn</td>
<td>481</td>
<td>0.49%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Winter</td>
<td>403</td>
<td>0.41%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>Spring</td>
<td>9,405</td>
<td>9.61%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summer</td>
<td>9,356</td>
<td>9.56%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autumn</td>
<td>8,075</td>
<td>8.25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Winter</td>
<td>7,342</td>
<td>7.50%</td>
</tr>
<tr>
<td>SRDS</td>
<td>Passenger Car</td>
<td>Spring</td>
<td>432</td>
<td>0.44%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summer</td>
<td>490</td>
<td>0.50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autumn</td>
<td>365</td>
<td>0.37%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Winter</td>
<td>291</td>
<td>0.30%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>Spring</td>
<td>15,589</td>
<td>15.93%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Summer</td>
<td>16,353</td>
<td>16.71%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Autumn</td>
<td>14,713</td>
<td>15.03%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Winter</td>
<td>13,410</td>
<td>13.70%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td>97,863</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 65. Weighting Percentages: Self-haul at the NRDS

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Season</th>
<th>Tons of Season Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car</td>
<td>Spring</td>
<td>543</td>
<td>1.50%</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>617</td>
<td>1.70%</td>
</tr>
<tr>
<td></td>
<td>Autumn</td>
<td>481</td>
<td>1.33%</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>403</td>
<td>1.11%</td>
</tr>
<tr>
<td>Truck</td>
<td>Spring</td>
<td>9,405</td>
<td>25.97%</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>9,356</td>
<td>25.83%</td>
</tr>
<tr>
<td></td>
<td>Autumn</td>
<td>8,075</td>
<td>22.29%</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>7,342</td>
<td>20.27%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>36,221</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 66. Weighting Percentages: Self-haul at the SRDS

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Season</th>
<th>Tons of Season Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car</td>
<td>Spring</td>
<td>432</td>
<td>0.70%</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>490</td>
<td>0.79%</td>
</tr>
<tr>
<td></td>
<td>Autumn</td>
<td>365</td>
<td>0.59%</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>291</td>
<td>0.47%</td>
</tr>
<tr>
<td>Truck</td>
<td>Spring</td>
<td>15,589</td>
<td>25.29%</td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>16,353</td>
<td>26.53%</td>
</tr>
<tr>
<td></td>
<td>Autumn</td>
<td>14,713</td>
<td>23.87%</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>13,410</td>
<td>21.76%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>61,642</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Table 67. Weighting Percentages: Self-haul Passenger Vehicles

<table>
<thead>
<tr>
<th>Site</th>
<th>Tons Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>543</td>
<td>14.99%</td>
</tr>
<tr>
<td>Summer</td>
<td>617</td>
<td>17.05%</td>
</tr>
<tr>
<td>Autumn</td>
<td>481</td>
<td>13.28%</td>
</tr>
<tr>
<td>Winter</td>
<td>403</td>
<td>11.12%</td>
</tr>
<tr>
<td>SRDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>432</td>
<td>11.92%</td>
</tr>
<tr>
<td>Summer</td>
<td>490</td>
<td>13.53%</td>
</tr>
<tr>
<td>Autumn</td>
<td>365</td>
<td>10.09%</td>
</tr>
<tr>
<td>Winter</td>
<td>291</td>
<td>8.03%</td>
</tr>
<tr>
<td>Overall</td>
<td>3,621</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Table 68. Weighting Percentages: Self-haul Trucks

<table>
<thead>
<tr>
<th>Site</th>
<th>Tons Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>9,405</td>
<td>9.98%</td>
</tr>
<tr>
<td>Summer</td>
<td>9,356</td>
<td>9.93%</td>
</tr>
<tr>
<td>Autumn</td>
<td>8,075</td>
<td>8.57%</td>
</tr>
<tr>
<td>Winter</td>
<td>7,342</td>
<td>7.79%</td>
</tr>
<tr>
<td>SRDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>15,589</td>
<td>16.54%</td>
</tr>
<tr>
<td>Summer</td>
<td>16,353</td>
<td>17.35%</td>
</tr>
<tr>
<td>Autumn</td>
<td>14,713</td>
<td>15.61%</td>
</tr>
<tr>
<td>Winter</td>
<td>13,410</td>
<td>14.23%</td>
</tr>
<tr>
<td>Overall</td>
<td>94,242</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 69. Weighting Percentages: Self-haul in Spring

<table>
<thead>
<tr>
<th>Site</th>
<th>Vehicle Type</th>
<th>Tons Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td>Passenger Car</td>
<td>543</td>
<td>2.09%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>9,405</td>
<td>36.22%</td>
</tr>
<tr>
<td>SRDS</td>
<td>Passenger Car</td>
<td>432</td>
<td>1.66%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>15,589</td>
<td>60.03%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>25,968</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 70. Weighting Percentages: Self-haul in Summer

<table>
<thead>
<tr>
<th>Site</th>
<th>Vehicle Type</th>
<th>Tons Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td>Passenger Car</td>
<td>617</td>
<td>2.30%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>9,356</td>
<td>34.89%</td>
</tr>
<tr>
<td>SRDS</td>
<td>Passenger Car</td>
<td>490</td>
<td>1.83%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>16,353</td>
<td>60.98%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>26,816</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 71. Weighting Percentages: Self-haul in Autumn

<table>
<thead>
<tr>
<th>Site</th>
<th>Vehicle Type</th>
<th>Tons Disposed</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRDS</td>
<td>Passenger Car</td>
<td>481</td>
<td>2.03%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>8,075</td>
<td>34.17%</td>
</tr>
<tr>
<td>SRDS</td>
<td>Passenger Car</td>
<td>365</td>
<td>1.55%</td>
</tr>
<tr>
<td></td>
<td>Truck</td>
<td>14,713</td>
<td>62.25%</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>23,634</td>
<td>100%</td>
</tr>
</tbody>
</table>
Identifying statistically significant differences requires a two-step calculation. First, assuming that the two groups to be compared have the same variance, a pooled sample variance is calculated:

\[ S_{pool}^2 = \frac{\left(n_1 - 1\right) \cdot \left(n_1 \cdot \hat{V}_{r_1}\right) + \left(n_2 - 1\right) \cdot \left(n_2 \cdot \hat{V}_{r_2}\right)}{n_1 + n_2 - 2} \]

Next, the t-statistic is constructed:

\[ t = \frac{(r_1 - r_2)}{\sqrt{\frac{S_{pool}^2}{n_1} + \frac{S_{pool}^2}{n_2}}} \]

The p-value of the t-statistic is calculated based on \((n_1+n_2 - 2)\) degrees of freedom.
Appendix E. Year-to-Year Comparison Calculations

This section outlines the technical issues involved with the year-to-year comparison calculations. The calculation formulae are outlined in Waste Composition Calculations.

Background

In an ongoing effort to monitor the types and amounts of materials disposed locally, Seattle has performed several waste composition studies. This study analyzed the composition variations in the percentage of each broad material category disposed within the self-haul substream.

In order to control for population changes and other factors that may influence the total amount of waste disposed from year to year, the tests described in this appendix measure waste proportions, and not actual tonnage. For example, if newspaper accounts for 5% of a particular substream’s disposed waste each year, and that substream disposed a total of 1,000 tons of waste in one year and 2,000 tons of waste in the next, while the amount of newspaper increased from 50 to 100 tons, the percentage remained the same. Therefore, the tests would indicate that there had been no change.

The purpose of conducting these comparison tests is to identify statistically significant changes in the percentage of broad material categories of waste disposed in each substream over time. One specific example is stated as follows:

Hypothesis: “There is no statistically significant difference, between the 2012 and 2017-18 study periods, in the percentage of paper disposed in the self-haul substream.”

Statistics are then employed to look for evidence disproving the hypothesis. A “significant” result means that there is enough evidence to disprove the hypothesis, and it can be concluded that there is a true difference across study periods. “Insignificant” results indicate that either a) there is no true difference, or b) even though there may be a difference, there is not enough evidence to prove it.

The purpose of these tests is to identify changes across years. However, the study did not attempt to investigate why or how these changes occurred. The changes may be due to a variety of factors.

Statistical Considerations

The analyses are based on the component percentages, by weight, for each selected substream. As described in Waste Composition Calculations, these percentages are calculated by dividing the sum of the selected component weights by the sum of the corresponding sample weights. T-tests (modified for ratio estimation) were used to examine the year-to-year variation.

5.1.6 Normality

The distribution of some of the broad waste categories (particularly the hazardous materials) is skewed and may not follow a normal distribution. Although t-tests assume a normal distribution, they are very robust to departures from this assumption, particularly with large sample sizes. In addition, the broad waste categories are sums of several individual waste components, which improve our ability to meet the assumptions of normality.
5.1.7 Dependence

There may be dependence between waste components (if a person disposes of component A, they always dispose of component B at the same time).

There is certainly a degree of dependence between the calculated percentages. (Since the percentages sum to 100, if the percentage of component A increases, the percentage of some other component must decrease). This type of dependence is somewhat controlled by choosing only a portion of the waste categories for the analyses.

5.1.8 Multiple T-Tests

In all statistical tests, there is a chance of incorrectly concluding that a result is significant. The year-to-year comparison required conducting several t-tests, (one for each waste category within each set of substreams) each of which carries that risk. However, we were willing to accept only a 10% chance, overall, of making an incorrect conclusion. Therefore, each test was adjusted by setting the significance threshold to $\frac{0.10}{w}$ ($w = \text{the number of t-tests}$).

*The adjustment can be explained as follows:*

For each test, we set a $1 - \frac{0.10}{w}$ chance of not making a mistake, which results in a $\left(1 - \frac{0.10}{w}\right)^w$ chance of not making a mistake during all $w$ tests.

Since one minus the chance of not making a mistake equals the chance of making a mistake, by making this adjustment, we have set the overall risk of making a wrong conclusion during any one of the tests at $\left(1 - \left(1 - \frac{0.10}{w}\right)^w\right) = 0.10$.

The chance of a “false positive” for this study is restricted to 10% overall, or 1.25% for each test (10% divided by the eight tests within each substream equals 1.25%).

For more detail regarding this issue, please refer to Section 11.2 “The Multiplicity Problem and the Bonferroni Inequality" of An Introduction to Contemporary Statistics by L.H. Koopmans (Duxbury Press, 1981).
Interpreting the Calculation Results

Table 73 shows the calculation results for the self-haul substream. The comparisons are shown for all eight tests; an asterisk indicates the statistically significant differences.

For the purposes of this study, only those calculation results with a p-value of less than 1.25% are considered to be statistically significant. As described above, the threshold for determining statistically significant results (the “alpha-level”) is conservative, accounting for the fact that so many individual tests were calculated.

The t-statistic is calculated from the data; according to statistical theory, the larger the absolute value of the t-statistic, the less likely that the two populations have the same mean. The p-value describes the probability of observing the calculated t-statistic if there were no true difference between the population means.

For example, in Table 73 the proportion of Paper in the disposed self-haul substream decreased from 6.4% to 3.4% across the study periods. The t-statistic is relatively large (2.7703) and the probability (p-value) of observing that t-statistic if there had been no true difference between years is approximately 0.1%. This value is less than the study’s pre-determined threshold for statistically significant results (alpha-level of 1.25%); thus the decrease in Paper is considered to be a true difference. In contrast, the p-value corresponding to the increase in Construction Debris is very large. The chance of observing the 51.9% to 55.4% increase when the actual proportion had not changed is approximately 32.2% - much too high to be considered a true difference.

As illustrated in Table 73, Paper and Organics showed a significant change across study periods.

Table 73. Changes in Self-Haul Waste Composition: 2012 to 2017-18

<table>
<thead>
<tr>
<th>Material</th>
<th>2012</th>
<th>2017/18</th>
<th>t-Statistic</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>6.4%</td>
<td>3.4%</td>
<td>2.7703</td>
<td>0.0059 *</td>
</tr>
<tr>
<td>Plastic</td>
<td>6.2%</td>
<td>6.9%</td>
<td>0.6536</td>
<td>0.5137</td>
</tr>
<tr>
<td>Glass</td>
<td>1.6%</td>
<td>1.8%</td>
<td>0.2386</td>
<td>0.8115</td>
</tr>
<tr>
<td>Metal</td>
<td>5.6%</td>
<td>6.3%</td>
<td>0.6323</td>
<td>0.5276</td>
</tr>
<tr>
<td>Organics</td>
<td>5.2%</td>
<td>2.0%</td>
<td>2.5434</td>
<td>0.0113 *</td>
</tr>
<tr>
<td>Other Materials</td>
<td>21.6%</td>
<td>22.5%</td>
<td>0.3432</td>
<td>0.7316</td>
</tr>
<tr>
<td>CDL Wastes</td>
<td>51.9%</td>
<td>55.4%</td>
<td>0.9909</td>
<td>0.3223</td>
</tr>
<tr>
<td>Hazardous</td>
<td>1.4%</td>
<td>1.6%</td>
<td>0.2571</td>
<td>0.7972</td>
</tr>
</tbody>
</table>

Number of Samples | 226 | 182 |
Appendix F. Field Forms

The 2017-18 field forms are included in the following order:

- Self-haul vehicle selection sheet
- Sample tally sheet
# Vehicle Selection Sheet

## SEATTLE WASTE COMPOSITION STUDY

### Vehicle Selection Form

**Site:** SRDS  
**Date:** Monday, December 11, 2017

Cross off one number for each vehicle entering the station (both trucks and passenger vehicles).

When you reach the number circled, this vehicle should be asked to go to the sorting area to dump its load for sampling.

Continue for each block on the next line until the required number of vehicles is sampled.

### SELF-HAUL GARBAGE ONLY

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
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<td>41</td>
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<td>43</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>68</td>
<td>69</td>
<td>70</td>
<td>71</td>
<td>72</td>
<td>73</td>
<td>74</td>
<td>75</td>
<td>76</td>
<td>77</td>
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**NEED 18 VEHICLES - PLS. SAMPLE EVERY 7TH VEHICLE**
<table>
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<th>VEHICLE TYPE</th>
<th>A - Auto (Car or SUV)</th>
<th>P - Pickup Trucks</th>
<th>V - Van</th>
<th>T - Other Truck</th>
<th>RL - Rear Loader</th>
<th>FL - Front Loader</th>
<th>SL - Side Loader</th>
<th>ROD - Loose Roll-Off</th>
<th>ROC - Compactor Roll-Off</th>
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<table>
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<th>VEHICLE TYPE</th>
<th>A - Manufacturing</th>
<th>B - Wholesale</th>
<th>C - Retail</th>
<th>D - Restaurant</th>
<th>E - Hotels/Motel</th>
<th>F - Office</th>
<th>G - Health Care</th>
<th>H - Education</th>
<th>I - Transportation</th>
<th>J - Other Services</th>
<th>K - Mixed Businesses</th>
<th>L - CDL</th>
<th>M - Other Non-residential</th>
<th>N - Homeowner Box</th>
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| COMPANY NAME: |

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### Sample Tally Sheet (Front)

#### Tally Sheet - Page 1

<table>
<thead>
<tr>
<th>PAPER</th>
<th>PLASTIC</th>
<th>METAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>Plain OCC/Kraft</td>
<td>Steel Food Cans</td>
</tr>
<tr>
<td>Plain OCC/Kraft</td>
<td>Waxed OCC/Kraft</td>
<td>Empty Aerosol Cans</td>
</tr>
<tr>
<td>Grocery/Shopping Bags</td>
<td>High Grade</td>
<td>Other Ferrous</td>
</tr>
<tr>
<td>Mixed Low-grade</td>
<td>Polycoated Containers</td>
<td>Oil Filters</td>
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<tr>
<td>Compostable/Soiled</td>
<td>Pot Comp. Single-use Food Service</td>
<td>Filter Count:</td>
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<tr>
<td>Non Comp. Single-use Food Service</td>
<td>Non Comp. Single-use Food Service</td>
<td>Mixed/Metal/Other Material</td>
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#### GLASS

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<tr>
<th>TYPE</th>
<th>报复取决于情况。</th>
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<tbody>
<tr>
<td>Clear Bottles</td>
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<td>Brown Bottles</td>
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<td>Fluorescent Tubes</td>
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<td>Flat Glass</td>
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#### VEHICLE TYPE

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<th>Type</th>
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#### METAL

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<td>Alum. Cans</td>
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<td>Other Nonferrous</td>
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## Sample Tally Sheet (Back)

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<th>ORGANICS</th>
<th>FURNITURE, APPLIANCES, AND ELECTRONICS</th>
<th>POTENTIALLY HARMFUL WASTE</th>
<th>POTENTIALLY HARMFUL WASTE</th>
<th>MISC.</th>
<th>CAPTURE DATE</th>
<th>SAMPLE NUMBER</th>
<th>FACILITY</th>
<th>TIME</th>
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<td>SAMPLE NUMBER</td>
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Revised 12/24/16