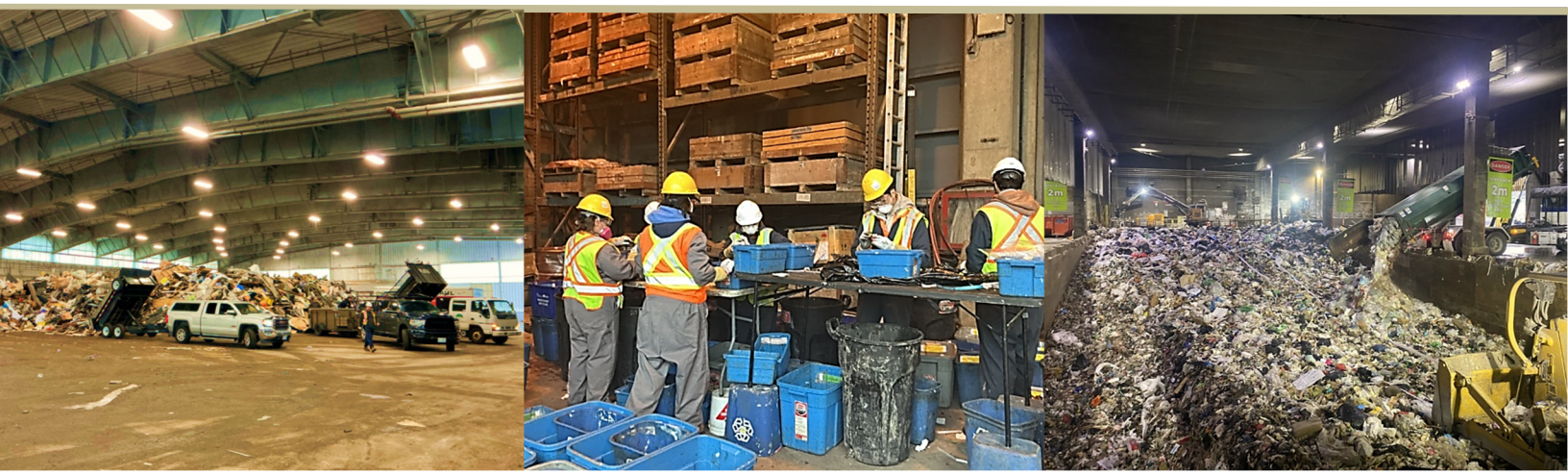
Metro Vancouver
2025 Full-Scale Waste Composition Study



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EXECUTIVE SUMMARY

Tetra Tech Canada Inc. (Tetra Tech) was retained by Metro Vancouver to conduct the 2025 full-scale waste composition study, which aims to characterize waste in the region based on sampling at four waste management facilities in Metro Vancouver in November 2025.

Sampling was completed at United Boulevard Recycling and Waste Centre (United Blvd), North Surrey Recycling and Waste Centre (North Surrey), Metro Vancouver Waste-to-Energy Centre (WTE) and Vancouver South Transfer Station (VSTS). Waste was characterized from a variety of waste sectors, including Single-Family (SF), Multi-Family (MF), Commercial/Institutional (CI), and Small Loads (SL).

Regional Average Composition and Disposal Rate

Overall, 97 samples with a total weight of 9,695 kg were assessed to determine the composition. Results are presented by primary category. The overall composition of the garbage stream is a weighted average calculated using the waste composition study results and prorating that composition with the approximate tonnage breakdown from each sector disposed of in 2024 in Metro Vancouver. This is a snapshot of the types and relative quantities of materials that were discarded by the community at this time of the year.

Table E-1 summarizes the composition by sector of the waste characterized during the study, as well as the combined regional average composition. The combined regional average composition is calculated as a weighted average based on the amount of waste disposed by each sector.

Table E-1: 2025 Waste Composition Results

Primary Category	Combined Regional Average (n=97)	By Sector			
		SF (n=26)	MF (n=23)	CI (n=31)	SL (n=17)
Disposed Tonnage	**994,795**	**136,955**	**267,127**	**459,000**	**131,712**
Paper	21%	17%	21%	27%	8%
Plastic	20%	23%	21%	22%	11%
Compostable Plastic	<1%	<1%	<1%	<1%	<1%
Compostable Organics	25%	24%	28%	25%	20%
Non-Compostable Organics	9%	6%	5%	6%	36%
Metals	3%	3%	3%	3%	4%
Glass	2%	2%	3%	2%	1%
Building Material	4%	3%	1%	2%	18%
Electronic Waste	1%	2%	1%	2%	1%
Household Hazardous	1%	1%	1%	2%	1%
Household Hygiene	10%	19%	16%	8%	<1%
Bulky Objects	1%	<1%	1%	2%	<1%
Fines	1%	1%	1%	1%	<1%

Note:
Percentages and tonnages are rounded to the nearest whole number and may not add to 100% or total tonnage.

Figure E-1 summarizes the historical comparison of the regional annual per capita disposal rate.

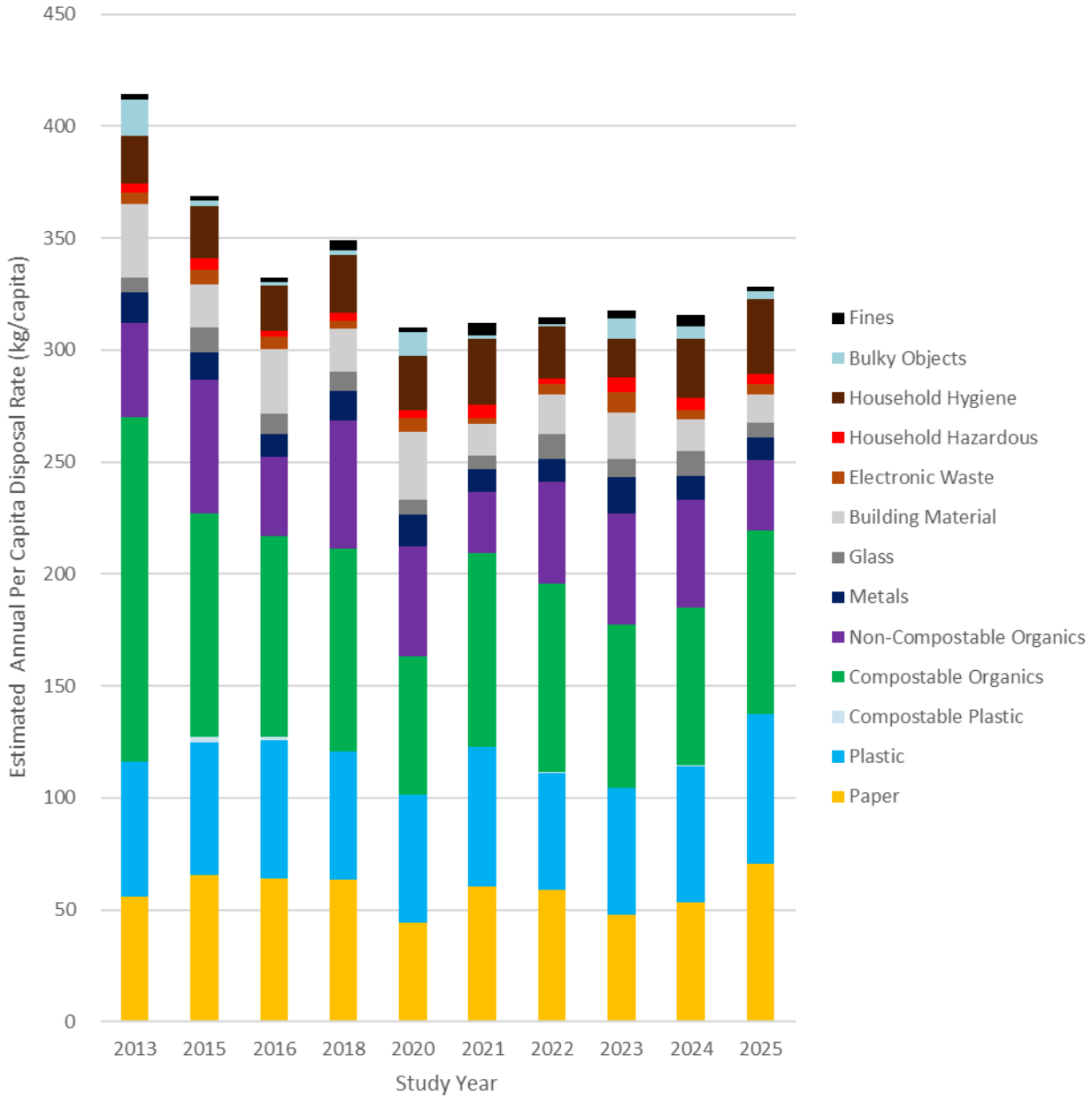


Figure E-1: Historical Comparison of the Regional Annual Per Capita Disposal Rate

Summary of Findings

The following is a summary of notable changes in the regional garbage stream composition when compared to previous studies:

- There is an increase in the paper category (21% in 2025 versus 17% in 2024 and 14% in 2023). The increase can be attributed to increases in other compostable (food-soiled) paper and non-compostable/non-recyclable paper in the 2025 samples.
- There is a consistent increase in plastics from (17% in 2022, rising one percent per year to 20% in 2025) and in 2025 the plastics primarily composed of flexible plastics, synthetic textiles and rigid packaging.
- There is a slight increase in the compostable organics category (25% in 2025 versus 22% in 2024 and 23% in 2023). The increase can be attributed to increases in small yard waste, avoidable food waste in the 2025 samples. Generally, the proportion of compostable organics in the garbage stream has fluctuated, ranging between 22% and 28% for the studies completed between 2021 and 2025.
  - Small yard waste is defined as yard waste that is less than 15 cm in diameter or 1 m long. Examples include branches, leaves, and potted plants.
- There is a decrease in the non-compostable organics category (9% in 2025 versus 15% in 2024 and 2023). The decrease can be attributed to less treated or painted wood from the CI sector in the 2025 samples.

Notable changes in the estimated amount of SUIs disposed in the garbage stream include the following:

- **Retail bags**: decreased in 2025 compared to the per capita disposal rates found during previous studies, primarily due to decreases in the number of plastic bags disposed. However, the decrease in plastic bags is partially offset by increases in the amount of paper bags and single-use fabric bags found in the waste stream.
- **Straws**: higher in 2025 compared to the per capita disposal rates found during previous studies. In 2025, data indicates that straw counts were influenced by samples with high numbers of straws.
- **Utensils**: per capita disposal rates decreased in 2025 compared to 2024 results. The number of utensils in the garbage stream is relatively high in 2024 and 2025 compared to previous studies. Increases in the number of both wooden and plastic utensils were observed in 2024 and 2025.
- **Takeout Containers**: The number of takeout containers in the garbage stream in 2025 remained at similar levels compared to the amount observed in 2024. The proportion of paper takeout containers to plastic takeout containers appears to fluctuate over time. Foam takeout containers substantially reduced since 2018.
- **Cups**: increased in 2025 compared to per capita disposal rates found during previous studies. Paper (lined with plastic) cups remain more prevalent in waste stream than plastic cups. The number of foam cups disposed has clearly declined since 2018.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
BC	British Columbia
C&D	Construction and Demolition
CI	Commercial/Institutional
HDPE	High-Density Polyethylene
kg/capita	Kilograms per Capita
LDPE	Low-Density Polyethylene
MF	Multi-Family
North Surrey	North Surrey Recycling and Waste Centre
PPE	Personal Protective Equipment
SF	Single-Family
SL	Small Loads
SUI	Single-Use Item
Tetra Tech	Tetra Tech Canada Inc.
United Blvd	United Boulevard Recycling and Waste Centre
VSTS	Vancouver South Transfer Station
WTE	Metro Vancouver Waste-to-Energy Centre

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Metro Vancouver and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Metro Vancouver, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

NOTE TO THE READER

The samples collected and characterized for this study are “snapshots” in time, meaning the reported quantities are estimates and only represent the conditions for the period in which they were collected. Annual variability, weather, and other factors can affect the amount and composition of waste and divertibles generated by the various sectors at any given time. Even with combined educational, regulatory, and financial initiatives, the reader should not assume that it is necessarily easy, practical, or economical to recover a substantial portion of a disposed material from a mixed waste stream or at its source.

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by Metro Vancouver to conduct the 2025 full-scale waste composition study, which aims to characterize waste in the region based on sampling at four waste management facilities in Metro Vancouver in November 2025. Sampling was completed at the following locations:

- United Boulevard Recycling and Waste Centre (United Blvd) in Coquitlam, British Columbia (BC).
- North Surrey Recycling and Waste Centre (North Surrey) in Surrey, BC.
- Metro Vancouver Waste-to-Energy Facility (WTE) in Burnaby, BC.
- Vancouver South Transfer Station (VSTS) in Vancouver, BC.

The purpose of this study was to:

- Characterize the materials in the garbage stream disposed from various waste sectors at the four waste management facilities in Metro Vancouver over a four-week sampling period in November 2025.
- Compare the waste composition results to previous waste composition studies.
- Provide current data on the municipal solid waste (MSW) being disposed in Metro Vancouver and develop a better understanding of the composition and disposal rates of MSW within Metro Vancouver.
- Calculate the average regional composition for the MSW generated in Metro Vancouver based on the waste composition data and tonnage data.

Waste was characterized from a variety of waste sectors as follows:

- **Single-Family (SF)**: typically curbside collected waste from SF households.
- **Multi-Family (MF)**: typically residential waste collected from MF properties (e.g., apartments, townhomes).
- **Commercial/Institutional (CI)**: typically waste from commercial and institutional sources (e.g., businesses, restaurants, schools) serviced by private service providers.
- **Small Loads (SL)**: waste that is self-hauled to waste management facilities and hand-unloaded for disposal. May include materials that are too large to be curbside collected, as well as waste from small businesses.

This study aims to collect data on the composition and generation rates of the garbage stream received at the waste management facilities in Metro Vancouver, as well as provide data to support the solid waste management plan. Previous full-scale waste composition studies have been completed for Metro Vancouver in 2010, 2011, 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, and 2024. The sampling plan for the 2025 study was based on previous studies and developed in conjunction with Metro Vancouver.

1.1 Background

Metro Vancouver encompasses BC's Lower Mainland region, providing essential solid waste management services and planning for approximately 3 million people across 21 municipalities, one electoral area, and one treaty First Nation. In 2024, nearly 1 million tonnes of garbage were disposed at regional waste management facilities across the four waste sectors (i.e., SF, MF, CI, and SL).

Solid waste management in Metro Vancouver is guided by the sustainability principles laid out in the regional solid waste management plan, which was approved in 2011. Metro Vancouver is currently undergoing the process of updating its solid waste management plan. Regional solid waste management facilities include a waste-to-energy facility and six recycling and waste centres. Metro Vancouver's facilities provide solid waste management services in conjunction with the VSTS and the Vancouver Landfill, which are owned and operated by the City of Vancouver. These facilities service the public sector, providing residents and businesses with waste diversion and waste disposal services.

1.2 Samples Characterized

The study involved characterizing the garbage stream received at the four waste management facilities: United Blvd, North Surrey, WTE, and VSTS. Sorting was conducted for one week at each facility. Table 1-1 summarizes the distribution of samples at each facility and the weight of the samples sorted.

Table 1-1: Sample Distribution by Facility

Sector	Number of Samples					Total Weight of Sorted Samples (kg)	Average Weight per Sample (kg)
	United Blvd	North Surrey	WTE	VSTS	Total		
	November 3 to 8, 2025	November 10 to 15, 2025	November 17 to 21, 2025	November 24 to 29, 2025			
SF	5	9	2	10	**26**	2,666	103
MF	7	3	7	6	**23**	2,338	102
CI	9	7	9	6	**31**	3,182	103
SL	8	6	0	3	**17**	1,509	89
Total	**29**	**25**	**18**	**25**	**97**	**9,695**	**100**

Table 1-2 summarizes the amount of waste disposed from each waste sector in 2024, as well as the population assigned to each sector. The total population of Metro Vancouver was assumed to be the sum of the SF and MF populations. It should be noted that the estimates for the 2025 study were calculated using the tonnage data collected in 2024. Tetra Tech understands that the estimated tonnages for each study have historically been calculated based on the tonnage data collected in the year prior to the study, due to the time needed to compile the tonnage data.

Table 1-2: Annual Disposed Tonnages and Population by Sector (2024)[1]

Sector	Tonnage Disposed[2]	Population
SF	136,955	1,633,189
MF	267,127	1,398,572
CI	459,000	1,526,875[3]
SL	131,712	-
Total	**994,795**	**3,031,761**

Note:
[1] Data provided by Metro Vancouver.
[2] Tonnages are rounded to the nearest whole number and may not add to the total tonnage.
[3] The CI sector population is an estimate of the number of employees in the CI sector and is not included in the calculation for the total population of Metro Vancouver.

2.0 METHODOLOGY

This section outlines the methodology used by Tetra Tech to select and characterize the collected samples. Tetra Tech's sampling methodology is based on the **Canadian Council of Ministers of the Environment's Recommended Waste Characterization Methodology for Direct Waste Analysis Studies in Canada**[1]

Samples were sorted at each facility by Tetra Tech staff who were trained on proper health and safety procedures. Personal protective equipment, including face masks, safety glasses, gloves, steel toe boots, and hi-vis vests, were worn by all Tetra Tech staff according to Tetra Tech's Health and Safety Plan. At each facility, site-specific safety orientations were completed before any sorting took place. Safety meetings were also conducted at the beginning of each day to review and identify key concerns and hazards.

Photos were taken during the sorting event to provide visual information of what occurred during the waste composition study and support recorded data. Appendix B includes selected photographs from the waste composition study.

2.1 Sample Collection and Characterization

Tetra Tech's field lead worked with each facility's site staff to notify them of the trucks arriving at the facility and the sector the waste was coming from. When a target waste sector (i.e., SF, MF, CI, and SL) was identified, the truck was directed to the designated tipping area for sampling.

At United Blvd, North Surrey, and WTE, Tetra Tech's field lead would notify the tipping floor attendants that the next truck(s) to arrive from the target sectors (i.e., SF, MF, CI, and SL) should be diverted to a designated tipping area for sampling. The selected trucks would then tip their loads at the designated tipping area near Tetra Tech's sorting area. The field lead would communicate directly with the truck driver and record the date, time, sector, truck identification (e.g., hauler, vehicle license plate number), truck volume, and other information about the load (e.g., municipality of origin, type of building or business). A duplicate scale ticket for the load would also be requested from the scale house.

At VSTS, the sample collection process was different from the above because the sorting area was not located near the tipping floor area due to space constraints and safety considerations. As a result, Tetra Tech's field lead worked with the scale house attendant to notify them when a truck from the target sectors (i.e., SF, MF, CI, and SL) arrived on site. The scale house attendant would obtain information about the selected load from the truck driver. This information was communicated to Tetra Tech's field lead via radio. The scale house attendant also notified the tipping floor staff of the selected truck and directed the load to the designated tipping area. A loader operator would then retrieve a portion of the load and transport it to Tetra Tech's sorting area.

Once the load was tipped at the designated area or the portion of the load was brought to Tetra Tech's sorting area, Tetra Tech staff would collect samples to be sorted. For loads from the SF, MF, and CI sectors, as well as SL loads over 100 kg, Tetra Tech staff would collect one sample that is approximately 100 kg from the load. Field staff collected the sample in a uniform manner across and around the pile to obtain a representative sample. For SL loads that weighed less than 100 kg, the whole load would be collected for sampling.

After the sample was collected, it was weighed and labelled with the sample identification number prior to sorting. The team would sort the material into the agreed-upon categories and weigh the sorted materials. After the samples were sorted, single-use items (SUIs) would be separated out, weighed, and then counted.

[1] Canadian Council of Ministers of the Environment. 1999. *Recommended Waste Characterization Methodology for Direct Waste Analysis Studies in Canada*. Prepared under contract by SENES Consultants Limited.

2.2 Material Categories

The material category list was provided by Metro Vancouver and is based on the list used during previous Metro Vancouver full-scale waste composition studies. Materials were characterized into 13 primary categories and 177 subcategories. Primary categories included:

- Paper
- Plastic
- Compostable Plastic
- Compostable Organics
- Non-Compostable Organics
- Metals
- Glass
- Building Material
- Electronic Waste
- Household Hazardous
- Household Hygiene
- Bulky Objects
- Fines

Some material categories that are of interest for Metro Vancouver's waste diversion efforts were also assigned functional groups, as follows:

- **Construction and demolition (C&D)**: typical materials generated by construction, demolition, or renovation activities (e.g., wood, gypsum and drywall, masonry).
- **Personal protective equipment (PPE)**: items used for protection from diseases (e.g., masks, gloves, disinfectant wipes).
- **SUIs**: items that are considered non-reusable (e.g., cups, takeout containers, straws, utensils, and retail bags).
- **Textiles**: items made of fabric (e.g., clothing, footwear, household textiles).

The material categories and functional groups are listed in Appendix C.

2.3 Data Analysis and Statistical Evaluation

Data analysis was performed using Tetra Tech's waste composition spreadsheet tool. Data was compiled into material categories by weight. To calculate percent composition by weight, the weights for each material category were summed within the sector and divided by the total weights of all samples within the sector. The overall regional composition was calculated as a weighted average using the average composition by sector and multiplying that with the estimated tonnages of waste for that sector. Standard deviations and 90% confidence intervals were also calculated for primary categories by waste sector.

Data was also further analyzed to calculate the composition by functional group. The overall regional composition by functional group was also calculated as weighted averages by using the average composition by sector and the estimated tonnages of waste for that sector. It should be noted that the overall regional composition by functional group was calculated as mathematical averages in previous studies (i.e., all samples were equally weighted in the average calculation).

2.3.1 Single-Use Item Analysis

The box-and-whiskers plot method was used to determine outliers for SUI counts. The box-and-whiskers plot displays the spread of the middle 50% of data and therefore allows identification of outliers. Outliers were identified for SF and MF SUI counts, which tend to have SUIs found in every sample and therefore allow outliers to be more easily identified. Outliers were not identified for CI SUI counts as the data was more variable.

After excluding the outliers from the SF and MF SUI counts, unit weights were calculated for each SUI category using the weight and count data for each year. A five-year average unit weight was then calculated for each SUI

category using the weight and count data collected over the last five years (i.e., 2021 to 2025). The number of SUIs disposed per capita (unit/capita) was calculated from the counts, weights, five-year average unit weights, regional disposal tonnages, and population data. The collected data was also combined to provide a regional total for SUI.

SUI outliers were not removed from the analysis of the waste composition and functional categories, as the outliers do not significantly impact results due to the low weight of SUI materials.

In terms of the analysis for scaling SUIs, results in 2024 used an aggregate scaling methodology whereas the results presented in this report used a sector-level scaling which scales each sector independently and preserves the differences in sampling rates and material distribution.

3.0 WASTE COMPOSITION RESULTS

The following section summarizes the waste composition results of the garbage stream from the SF, MF, CI, and SL sectors sampled at the four waste management facilities in November 2025. Details of the waste composition results for all material categories and sectors are presented in Appendix D. This is a snapshot of the types and relative quantities of the garbage stream that were discarded at the four waste management facilities at this time of the year.

3.1 Single-Family Sector Waste Composition

Figure 3-1 illustrates the average composition by weight of the SF loads characterized during this study. The largest material categories from this sector were compostable organics (24%), plastic (23%), household hygiene (19%), and paper (17%). These four primary categories represented 83% of the overall weight of the samples from this sector.

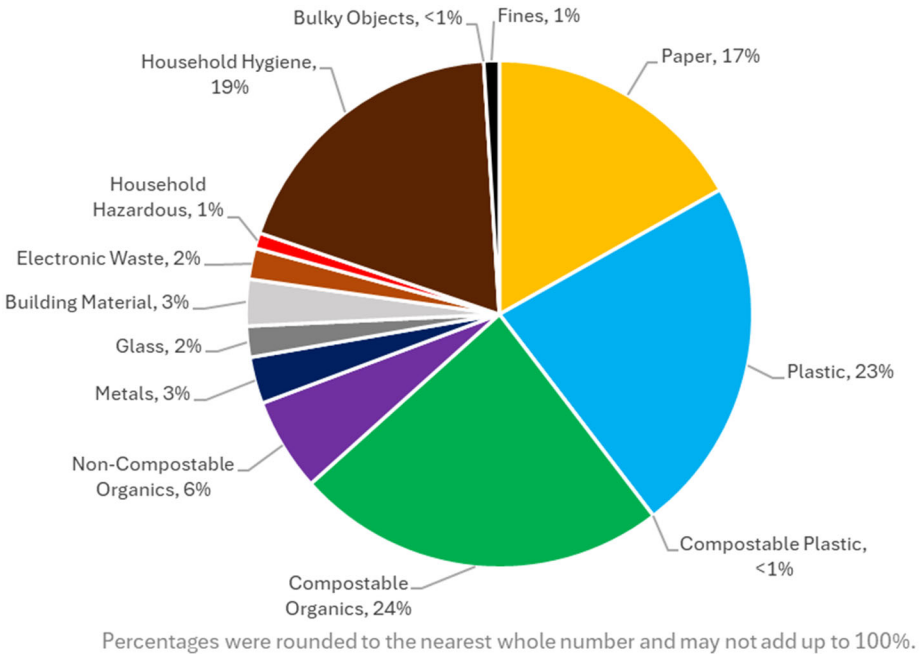


Figure 3-1: SF Sector Waste Composition

The primary categories were broken down as follows:

- **Compostable organics:** mainly included avoidable food waste (13.1%), yard and garden waste (5.7%), and unavoidable food waste (4.3%). These secondary categories were further subdivided into tertiary categories, including the following: small yard waste (5.7%), avoidable food waste – plate scrapings and unfinished meals (5.4%), unavoidable food waste (4.3%), and avoidable food waste – whole fruits and vegetables (3.2%).
- **Plastic:** mainly consisted of flexible plastics (10.2%), synthetic textiles (6.2%), other plastic (3.2%), and rigid non-beverage plastic packaging (2.9%). These secondary categories were further subdivided into tertiary categories, including the following: other flexible plastic packaging (5.1%), synthetic textiles – clothing and accessories (3.4%), synthetic textiles – household (2.1%), high-density polyethylene (HDPE) and low-density polyethylene (LDPE) consumables packaging bags and film (1.7%), garbage bags (1.7%), and durable plastic products (1.6%).
- **Household hygiene:** primarily composed of biological waste (17.6%), which were further subdivided into the following major tertiary categories: diapers (11.1%) and pet waste (5.0%).
- **Paper:** mainly included other paper (11.1%), fine, office, and envelopes (2.1%), and boxboard (2.1%). These secondary categories were further subdivided into tertiary categories, including the following: other compostable (food-soiled) paper (7.4%), boxboard – cereal boxes and other box packaging (2.1%), non-compostable/non-recyclable paper (1.7%), and other fine office paper or envelopes (1.5%).

Table 3-1 summarizes the composition of the SF sector garbage stream and associated 90% confidence intervals. The calculated confidence intervals for the SF sector were generally between 1% to 2% (with the exception of compostable organics which was ±4%), indicating that there was relatively low variability between SF samples during this study.

Table 3-1: SF Sector Waste Composition

Primary Category	Percent Composition (n=26)	90% Confidence Interval
Paper	17%	±1%
Plastic	23%	±2%
Compostable Plastic	<1%	-
Compostable Organics	24%	±4%
Non-Compostable Organics	6%	±1%
Metals	3%	±1%
Glass	2%	-
Building Material	3%	±1%
Electronic Waste	2%	±1%
Household Hazardous	1%	-
Household Hygiene	19%	±2%
Bulky Objects	<1%	-
Fines	1%	-

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0%.

3.2 Multi-Family Sector Waste Composition

Figure 3-2 illustrates the average composition by weight of the MF loads characterized during this study. The largest material categories from this sector were compostable organics (28%), paper (21%), plastic (21%), and household hygiene (16%). These four primary categories represented 86% of the overall weight of the samples from this sector.

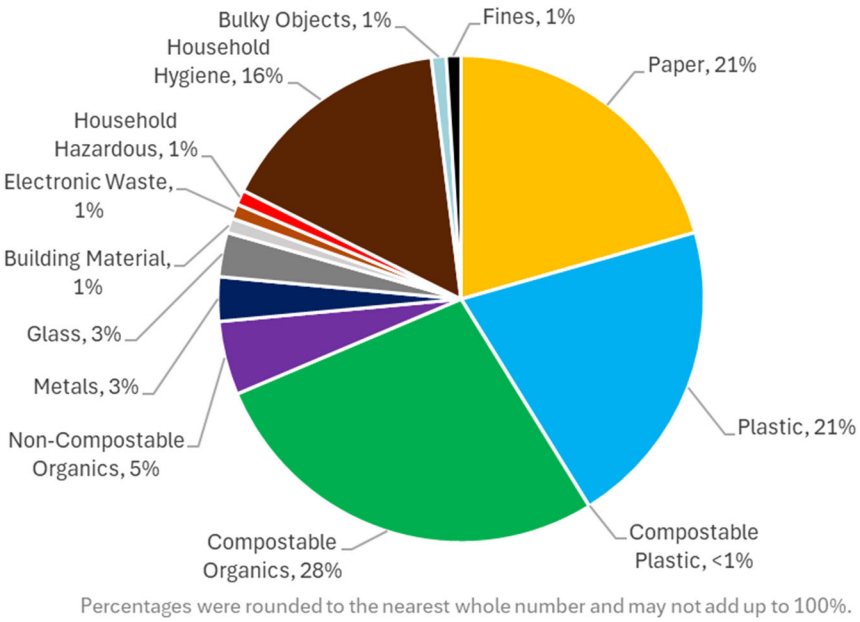


Figure 3-2: MF Sector Waste Composition

The primary categories were broken down as follows:

- **Compostable organics:** mainly included avoidable food waste (19.4%) and unavoidable food waste (7.6%). These secondary categories were further subdivided into tertiary categories, including the following: avoidable food waste – plate scrapings and unfinished meals (8.4%), unavoidable food waste (7.6%), and avoidable food waste – whole fruits and vegetables (5.0%)
- **Paper:** mainly included other paper (13.5%), boxboard (2.9%), old corrugated cardboard (2.5%), and fine, office, and envelopes (1.7%). These secondary categories were further subdivided into tertiary categories, including the following: other compostable (food-soiled) paper (8.8%), boxboard – cereal boxes and other box packaging (2.9%), clean recyclable old corrugated cardboard (2.4%), non-compostable/non-recyclable paper (1.9%), and other fine office paper or envelopes (1.2%).
- **Plastic:** mainly consisted of flexible plastics (8.2%), synthetic textiles (5.1%), rigid non-beverage plastic packaging (3.9%), and other plastic (2.7%). These secondary categories were further subdivided into tertiary categories, including the following: other flexible plastic packaging (3.7%), synthetic textiles – clothing and accessories (2.7%), synthetic textiles – household (2.1%), garbage bags (2.0%), and HDPE and LDPE consumables packaging bags and film (1.7%).
- **Household hygiene:** primarily composed of biological waste (14.1%), which were further subdivided into the following tertiary categories: diapers (7.9%) and pet waste (4.5%).

Table 3-2 summarizes the composition of the MF sector garbage stream and associated 90% confidence intervals. The calculated confidence intervals for the MF sector were generally between 1% to 2%, with the exception of household hygiene at ±4% and compostable organics at ±3%. The relatively low confidence intervals indicated that there was relatively low variability between MF samples during this study.

Table 3-2: MF Sector Waste Composition

Primary Category	Percent Composition (n=23)	90% Confidence Interval
Paper	21%	±2%
Plastic	21%	±2%
Compostable Plastic	<1%	-
Compostable Organics	28%	±3%
Non-Compostable Organics	5%	±2%
Metals	3%	±1%
Glass	3%	±1%
Building Material	1%	±1%
Electronic Waste	1%	-
Household Hazardous	1%	-
Household Hygiene	16%	±4%
Bulky Objects	1%	±1%
Fines	1%	-

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0%.

3.3 Commercial/Institutional Sector Waste Composition

Figure 3-3 illustrates the average composition by weight of the CI loads characterized during this study. The largest material categories from this sector were paper (27%), compostable organics (25%), and plastic (22%). These three primary categories represented 74% of the overall weight of the samples from this sector.

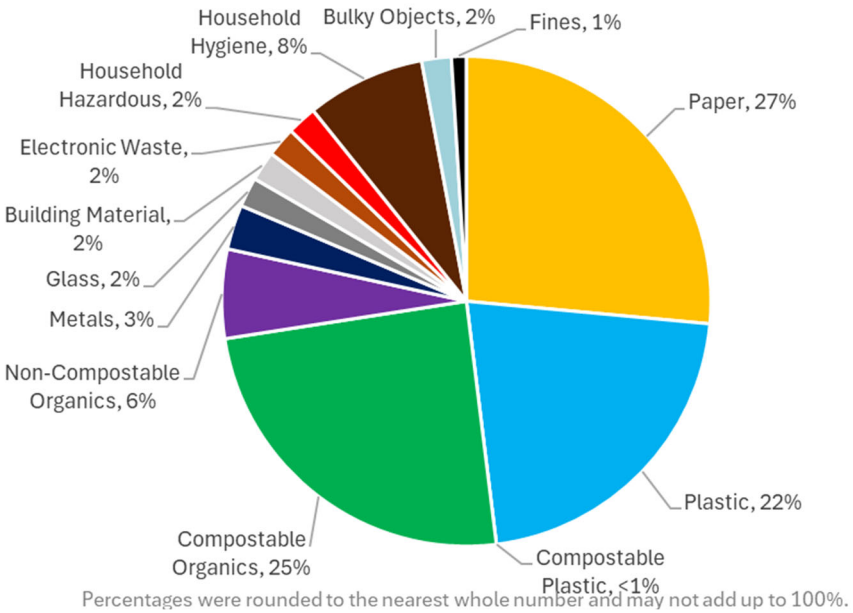


Figure 3-3: CI Sector Waste Composition

The primary categories were broken down as follows:

- **Paper:** mainly included other paper (16.8%), old corrugated cardboard (4.5%), boxboard (2.6%), and fine, office, and envelopes (2.4%). These secondary categories were further subdivided into tertiary categories, including the following: other compostable (food-soiled) paper (8.6%), non-compostable/non-recyclable paper (4.9%), clean recyclable old corrugated cardboard (4.0%), boxboard – cereal boxes and other box packaging (2.6%), and other fine office paper or envelopes (2.0%).
- **Compostable organics:** mainly included avoidable food waste (14.3%), unavoidable food waste (4.6%), and yard and garden waste (4.4%). These secondary categories were further subdivided into tertiary categories, including the following: avoidable food waste – plate scrapings and unfinished meals (5.6%), unavoidable food waste (4.6%), small yard waste (4.2%), avoidable food waste – whole fruits and vegetables (3.6%), and avoidable food waste – baked goods (2.2%).
- **Plastic:** mainly consisted of flexible plastics (9.0%), synthetic textiles (4.3%), rigid non-beverage plastic packaging (4.1%), and other plastic (3.9%). These secondary categories were further subdivided into tertiary categories, including the following: other flexible plastic packaging (3.4%), durable plastic products (2.4%), HDPE and LDPE consumables packaging bags and film (2.3%), garbage bags (2.2%), synthetic textiles – household (1.6%), and synthetic textiles – clothing and accessories (1.5%).

Table 3-3 summarizes the composition of the CI sector garbage stream and associated 90% confidence intervals. The calculated confidence intervals for the CI sector were highest for the paper, plastic, and compostable organics primary categories, indicating high variability in those material types compared to other material types in CI sector garbage.

Table 3-3: CI Sector Waste Composition

Primary Category	Percent Composition (n=31)	90% Confidence Interval
Paper	27%	±5%
Plastic	22%	±3%
Compostable Plastic	<1%	-
Compostable Organics	25%	±3%
Non-Compostable Organics	6%	±2%
Metals	3%	±1%
Glass	2%	±2%
Building Material	2%	±1%
Electronic Waste	2%	±1%
Household Hazardous	2%	±1%
Household Hygiene	8%	±2%
Bulky Objects	2%	±1%
Fines	1%	-

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0%.

The composition of the CI sector garbage tends to be variable when comparing between different studies. The composition depends on the types of loads that are characterized during the study. The CI sector garbage stream can come from a variety of sources (e.g., grocery stores, offices, clothing stores, hardware stores, restaurants, etc.), which affects the sample composition. Changes observed include the following:

- There is an increase in the paper category (27% in 2025 versus 19% in 2024 and 15% in 2023). The increase was mainly attributed to increases in other compostable (food-soiled) paper, other fine office paper or envelopes, and boxboard – cereal boxes and other box packaging in the 2025 samples.
- There is a decrease in the non-compostable organics category (6% in 2025 versus 18% in 2024 and 22% in 2023). The decrease was mainly attributed to decreases in treated or painted wood in the 2025 samples. Generally, the proportion of non-compostable organics in the CI garbage stream has fluctuated, ranging between 6% and 22% for the studies completed between 2013 and 2025.

3.4 Small Load Sector Waste Composition

Figure 3-4 illustrates the average composition by weight of the SL loads characterized during this study. The largest material categories from this sector were non-compostable organics (36%), compostable organics (20%), building material (18%), and plastic (11%). These four primary categories represented 85% of the overall weight of the samples from this sector.

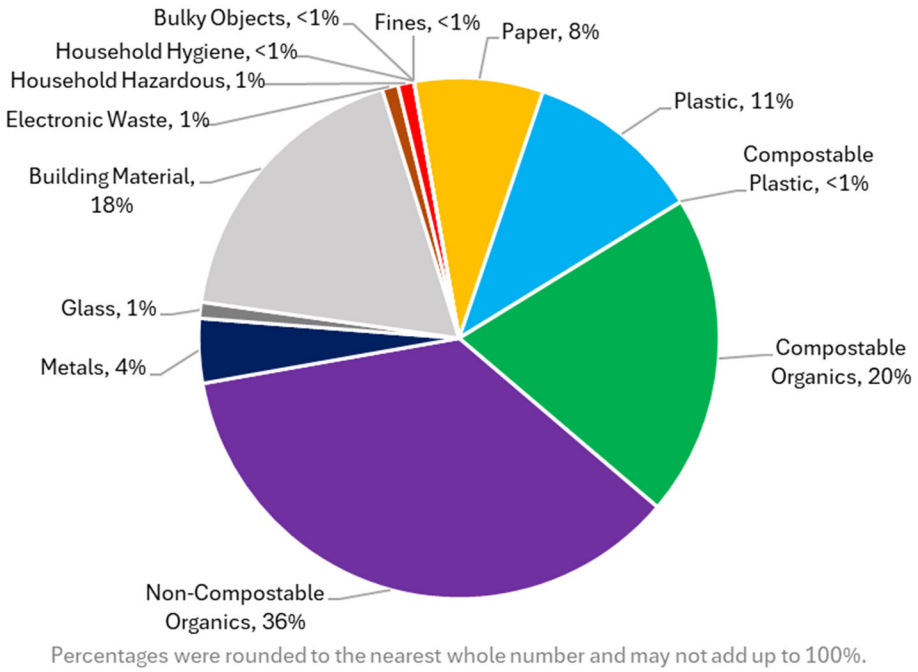


Figure 3-4: SL Sector Waste Composition

The primary categories were broken down as follows:

- **Non-compostable organics:** mainly included treated or painted wood (35.3%), which were further subdivided into the following tertiary categories: treated or painted wood – finished wood (27.6%), treated or painted wood – pressure treated wood (4.2%), and treated or painted wood – finished wood furniture (3.4%).
- **Compostable organics:** mainly included clean wood (16.6%), which were further subdivided into the following tertiary categories: other clean wood (12.3%), and clean wood pallets (3.8%).
- **Building material:** mainly included masonry (9.0%), carpet waste (3.4%), other inorganics (3.1%), and rigid asphalt (2.3%).
- **Plastic:** mainly consisted of flexible plastics (3.5%), synthetic textiles (3.4%), and other plastic (3.1%). These secondary categories were further subdivided into tertiary categories, including the following: synthetic textiles – household (2.3%), durable plastic products (1.8%), other plastic film (1.3%), and other/mixed plastics (1.3%).

Table 3-4 summarizes the composition of the SL sector garbage stream and associated 90% confidence intervals. The calculated confidence intervals for the SL sector were relatively high compared to the other sectors, indicating that there was generally more variability between SL samples.

Table 3-4: SL Sector Waste Composition

Primary Category	Percent Composition (n=17)	90% Confidence Interval
Paper	8%	±6%
Plastic	11%	±5%
Compostable Plastic	<1%	-
Compostable Organics	20%	±12%
Non-Compostable Organics	36%	±12%
Metals	4%	±2%
Glass	1%	±1%
Building Material	18%	±11%
Electronic Waste	1%	-
Household Hazardous	1%	±1%
Household Hygiene	<1%	±1%
Bulky Objects	<1%	±1%
Fines	<1%	-

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0%.

3.5 Regional Average Waste Composition Results

Figure 3-5 illustrates the regional waste composition by weight for all sectors characterized during this study. The largest material categories of the regional waste stream were compostable organics (25%), paper (21%), plastic (20%), household hygiene (10%), and non-compostable organics (9%). These five primary categories represented 85% of the overall weight of the samples characterized during this study.

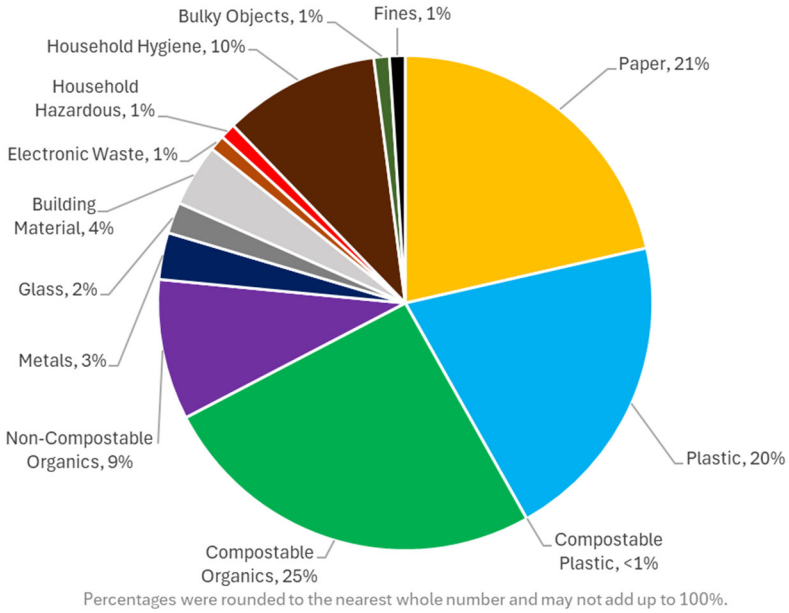


Figure 3-5: Regional Average Waste Composition

The primary categories were broken down as follows:

- **Compostable organics:** mainly included avoidable food waste (14.0%), unavoidable food waste (4.8%), yard and garden waste (3.1%), and clean wood (2.8%). These secondary categories were further subdivided into tertiary categories, including the following: avoidable food waste – plate scrapings and unfinished meals (5.6%), unavoidable food waste (4.8%), avoidable food waste – whole fruits and vegetables (3.5%), small yard waste (3.1%), and other clean wood (2.1%).
- **Paper:** mainly included other paper (13.3%), old corrugated cardboard (3.3%), boxboard (2.5%), and fine, office, and envelopes (1.9%). These secondary categories were further subdivided into tertiary categories, including the following: other compostable (food-soiled) paper (7.5%), non-compostable/non-recyclable paper (3.1%), clean recyclable old corrugated cardboard (3.0%), boxboard – cereal boxes and other box packaging (2.5%), and other fine office paper or envelopes (1.5%).
- **Plastic:** mainly consisted of flexible plastics (8.2%), synthetic textiles (4.6%), rigid non-beverage plastic packaging (3.5%), and other plastic (3.4%). These secondary categories were further subdivided into tertiary categories, including the following: other flexible plastic packaging (3.4%), synthetic textiles – clothing and accessories (1.9%), synthetic textiles – household (1.9%), garbage bags (1.8%), durable plastic products (1.8%), and HDPE and LDPE consumables packaging bags and film (1.8%).
- **Household hygiene:** primarily composed of biological waste (8.7%), which were further subdivided into the following tertiary categories: diapers (5.2%) and pet waste (2.6%).

- **Non-compostable organics:** mainly included treated or painted wood (6.8%) and other non-compostable organics (1.9%). These secondary categories were further subdivided into tertiary categories, including the following: treated or painted wood – finished wood (5.5%) and composite organic materials (1.6%).
  - Compared to the previous studies, There is a decrease in the non-compostable organics category (9% in 2025 versus 15% in 2024 and 2023). The decrease can be attributed to less treated or painted wood from the CI sector in the 2025 samples. Generally, the composition of the CI garbage stream tends to be more variable because the loads from the CI sector can come from a variety of sources (e.g., grocery stores, offices, clothing stores, hardware stores, restaurants, etc.), which affects the sample composition.

Table 3-5 summarizes the weighted average composition of the regional garbage stream and associated 90% confidence intervals. The calculated confidence intervals were 3% or less, indicating that there was relatively low variability overall between samples.

Table 3-5: Regional Average Waste Composition

Primary Category	Percent Composition (n=97)	90% Confidence Interval
Paper	21%	±2%
Plastic	20%	±2%
Compostable Plastic	<1%	-
Compostable Organics	25%	±3%
Non-Compostable Organics	9%	±3%
Metals	3%	±1%
Glass	2%	±1%
Building Material	4%	±2%
Electronic Waste	1%	-
Household Hazardous	1%	-
Household Hygiene	10%	±2%
Bulky Objects	1%	-
Fines	1%	-

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0%.

4.0 RESULTS COMPARISON

The following section summarizes the estimated disposal rates from the results of the study.

4.1 Residential Sectors

Table 4-1 summarizes the estimated per capita waste disposal rates for the SF and MF sectors and the material categories. The combined residential disposal rates were also calculated based on a weighted average of the SF and MF waste composition results and the amount of waste disposed of each respective sector.

Table 4-1: Residential Waste Disposal (kg/capita)

Parameter	SF			MF			Combined Residential		
Annual Disposed Tonnage (tonnes)	136,955			267,127			404,082		
Population	1,633,189			1,398,572			3,031,761		
Primary Category	**Percent Composition**	**Per Capita Disposal Rate (kg/capita)**	**90% Confidence Interval (kg/capita)**	**Percent Composition**	**Per Capita Disposal Rate (kg/capita)**	**90% Confidence Interval (kg/capita)**	**Percent Composition**	**Per Capita Disposal Rate (kg/capita)**	**90% Confidence Interval (kg/capita)**
Paper	17%	14.3	±0.2	21%	40.8	±0.9	20%	26.5	±0.3
Plastic	23%	19.3	±0.4	21%	39.7	±0.9	22%	28.7	±0.5
Compostable Plastic	<1%	<0.1	-	<1%	0.1	-	<1%	0.1	-
Compostable Organics	24%	19.7	±0.7	28%	54.3	±1.6	27%	35.7	±0.8
Non-Compostable Organics	6%	5.4	±0.1	5%	9.2	±0.1	5%	7.1	±0.1
Metals	3%	2.4	-	3%	5.5	-	3%	3.8	-
Glass	2%	1.4	-	3%	5.3	-	2%	3.2	-
Building Material	3%	2.1	-	1%	1.6	-	1%	1.9	-
Electronic Waste	2%	2.1	-	1%	1.3	-	1%	1.7	-
Household Hazardous	1%	0.8	-	1%	1.0	-	1%	0.9	-
Household Hygiene	19%	15.5	±0.4	16%	29.6	±1.1	17%	22.0	±0.5
Bulky Objects	<1%	0.1	-	1%	1.4	-	1%	0.7	-
Fines	1%	0.7	-	1%	1.2	-	1%	0.9	-
Total	**100%**	**83.9**		**100%**	**191.0**		**100%**	**133.3**	

Note:
Percentages are rounded to the nearest whole number and may not add to 100%. Per capita disposal rates are rounded to the nearest 0.1 kg/capita and may not add to the total per capita disposal rate. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0.0 kg/capita.

4.2 All Waste Disposal

Table 4-2 summarizes the estimated annual waste disposal (in tonnes) for the sectors characterized during the study. Each primary category's annual disposed tonnage was calculated using the composition data and the estimated annual disposed tonnage of each sector for the 2024 reference year.

Table 4-2: Estimated Waste Disposal by Primary Category

Parameter	SF			MF			CI			SL			Regional		
Annual Disposed Tonnage (tonnes)	136,955			267,127			459,000			131,712			994,795		
Population	1,633,189			1,398,572			1,526,875			-			3,031,761		
Primary Category	**Percent Composition**	**Annual Disposed Tonnage (tonnes)**	**90% Confidence Interval (tonnes)**	**Percent Composition**	**Annual Disposed Tonnage (tonnes)**	**90% Confidence Interval (tonnes)**	**Percent Composition**	**Annual Disposed Tonnage (tonnes)**	**90% Confidence Interval (tonnes)**	**Percent Composition**	**Annual Disposed Tonnage (tonnes)**	**90% Confidence Interval (tonnes)**	**Percent Composition**	**Annual Disposed Tonnage (tonnes)**	**90% Confidence Interval (tonnes)**
Paper	17%	23,368	±270	21%	57,115	±1,215	27%	122,613	±6,106	8%	10,528	±627	21%	213,623	±4,784
Plastic	23%	31,449	±662	21%	55,457	±1,323	22%	101,701	±3,089	11%	14,284	±692	20%	202,891	±3,400
Compostable Plastic	<1%	51	-	<1%	114	-	<1%	216	-	<1%	17	-	<1%	399	-
Compostable Organics	24%	32,209	±1,139	28%	75,961	±2,226	25%	114,014	±3,594	20%	26,570	±3,312	25%	248,754	±6,595
Non-Compostable Organics	6%	8,774	±112	5%	12,854	±200	6%	25,290	±536	36%	47,133	±5,851	9%	94,051	±2,765
Metals	3%	3,945	±23	3%	7,707	±46	3%	14,896	±160	4%	4,756	±90	3%	31,303	±161
Glass	2%	2,360	±9	3%	7,456	±52	2%	9,442	±144	1%	929	±8	2%	20,188	±111
Building Material	3%	3,498	±47	1%	2,280	±17	2%	8,714	±125	18%	23,756	±2,600	4%	38,248	±849
Electronic Waste	2%	3,406	±30	1%	1,771	±7	2%	8,505	±85	1%	698	±3	1%	14,379	±62
Household Hazardous	1%	1,310	±3	1%	1,383	±2	2%	8,844	±71	1%	1,632	±22	1%	13,168	±48
Household Hygiene	19%	25,374	±629	16%	41,420	±1,526	8%	34,797	±703	<1%	576	±8	10%	102,167	±1,707
Bulky Objects	<1%	110	-	1%	1,954	±15	2%	7,329	±70	<1%	633	±6	1%	10,026	±39
Fines	1%	1,099	±2	1%	1,657	±3	1%	2,640	±4	<1%	201	-	1%	5,597	±5
Total	**100%**	**136,955**		**100%**	**267,127**		**100%**	**459,000**		**100%**	**131,712**		**100%**	**994,795**	

Note:
Percentages and tonnages are rounded to the nearest whole number and may not add to 100% or total tonnage. A dash for the confidence interval indicates that the 90% confidence interval rounded to ±0 tonnes. The CI sector population is not included in the calculation for the total population of Metro Vancouver.

The following figures (Figure 4-1 to 4-5) show historical comparisons of the estimated annual disposed tonnages by sector during each full-scale waste composition study. Sampling for the full-scale waste composition study has typically occurred in the fall, though there may be variability between each study due to various factors (e.g., proximity to holidays and weather conditions).

Figure 4-1 shows the historical comparison of the annual disposed tonnages for the SF sector.

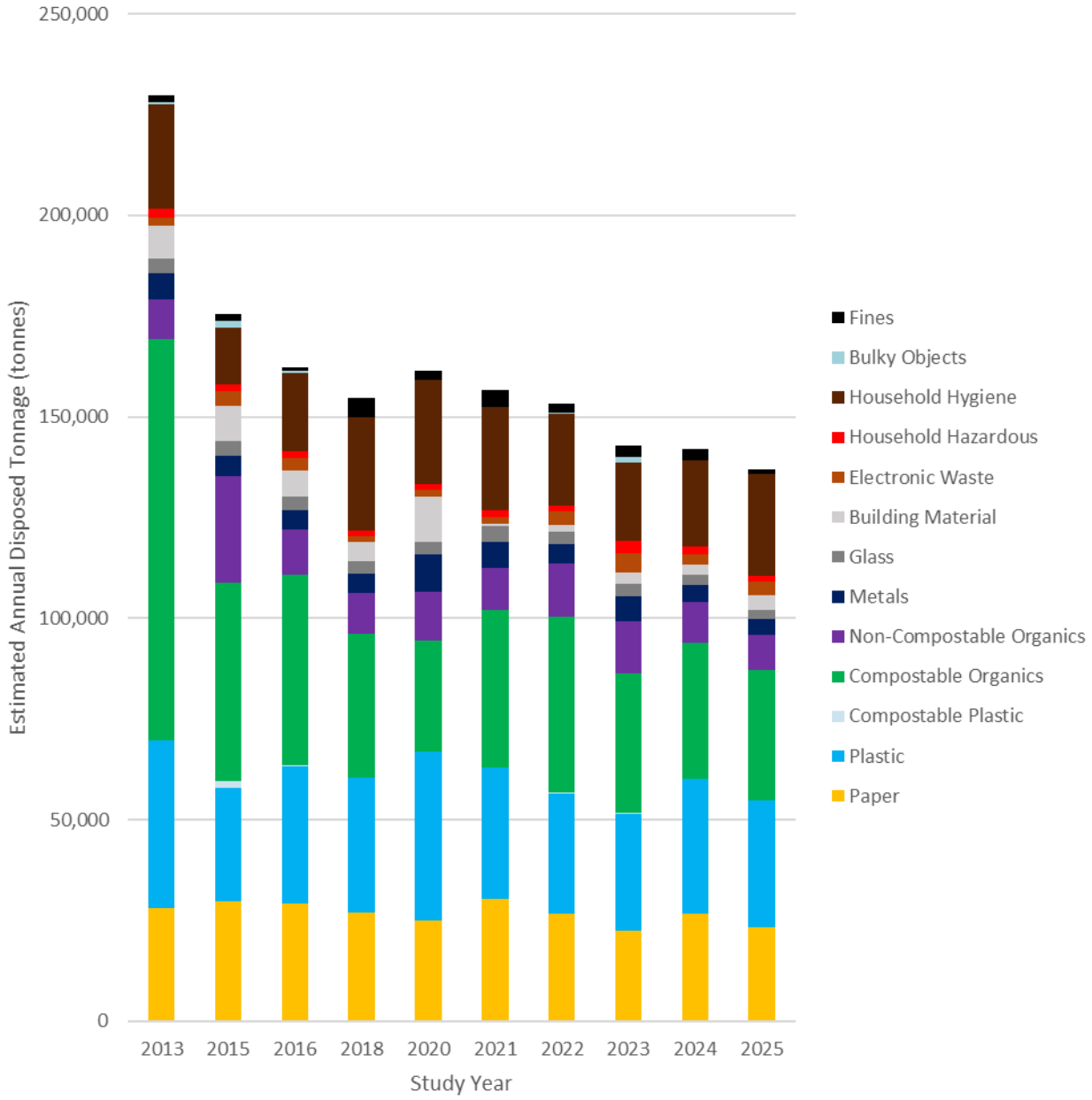


Figure 4-1: Historical Comparison of Estimated Annual Disposed Tonnages for the SF Sector

Figure 4-2 shows the historical comparison of the annual disposed tonnages for the MF sector.

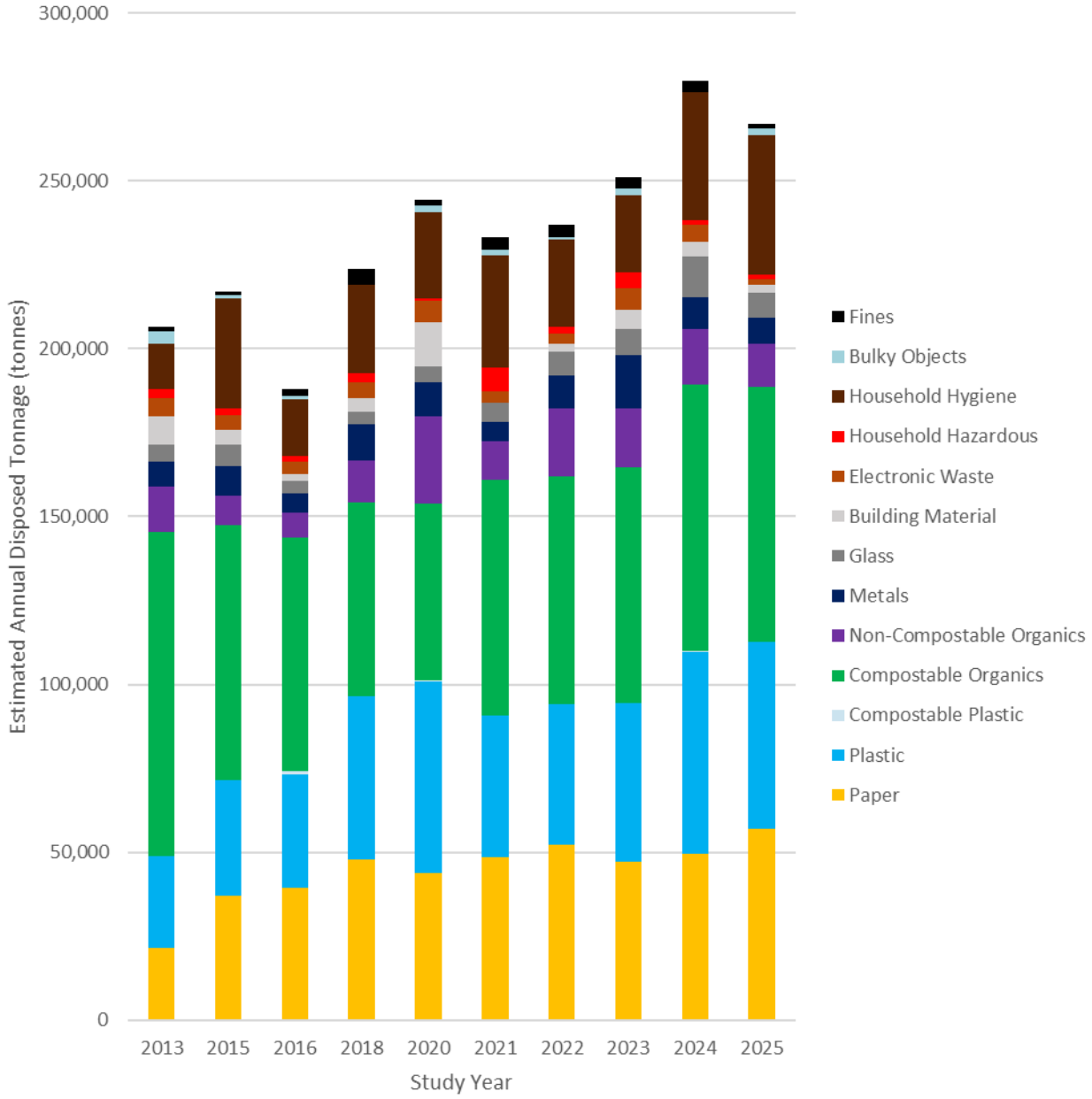


Figure 4-2: Historical Comparison of Estimated Annual Disposed Tonnages for the MF Sector

Figure 4-3 shows the historical comparison of the annual disposed tonnages for the CI sector. In general, there has been fluctuations in the annual disposed tonnages for the CI sector, with notable decreases that coincided with the years that were most impacted by the COVID-19 pandemic (2020 and 2021). The estimated tonnages for the 2025 study show the highest total annual disposed tonnage for the CI sector since 2013.

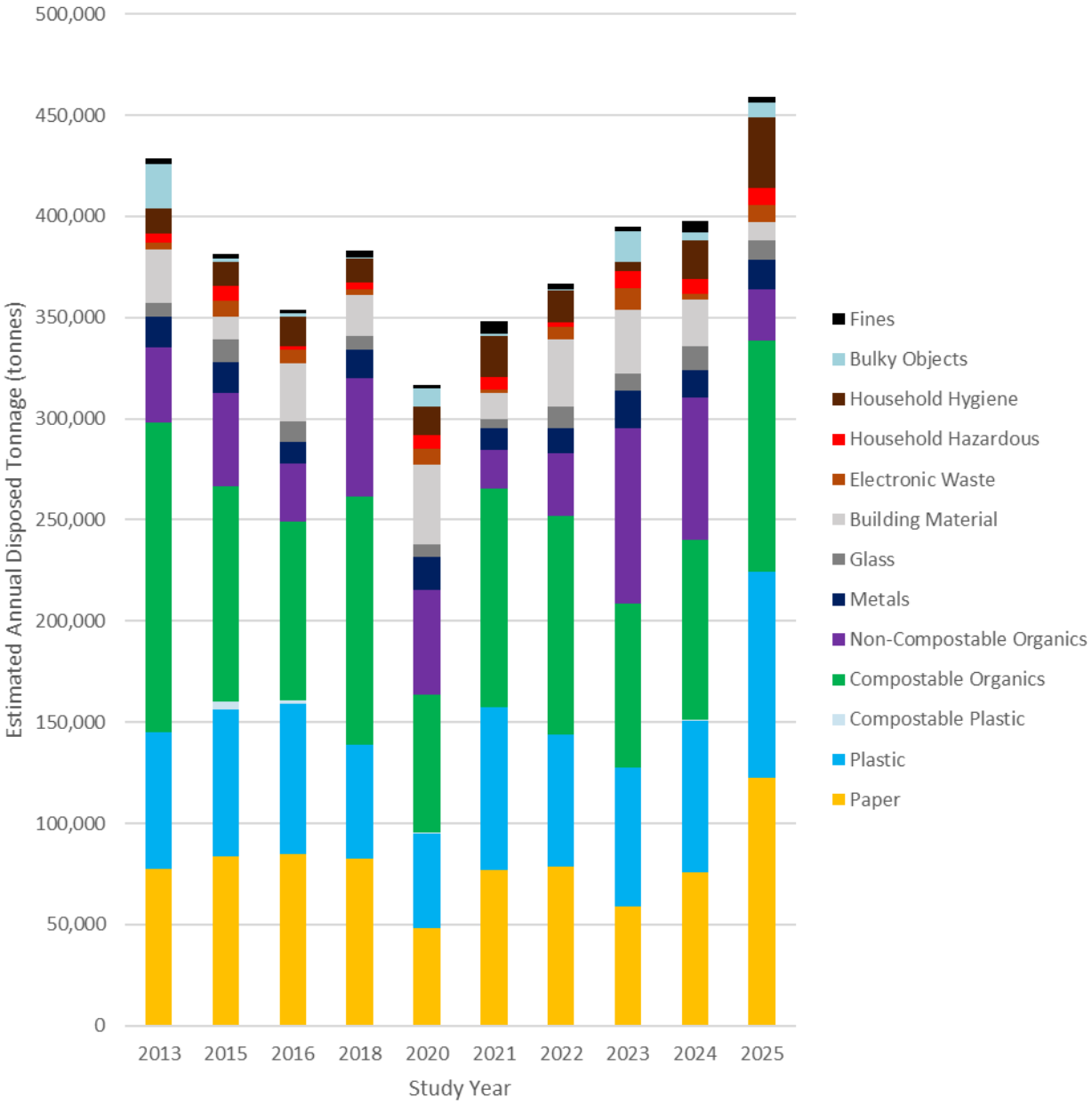


Figure 4-3: Historical Comparison of Estimated Annual Disposed Tonnages for the CI Sector

Figure 4-4 shows the historical comparison of the annual disposed tonnages for the SL sector. In general, the annual disposed tonnages for the SL sector have remained relatively constant across the different studies.

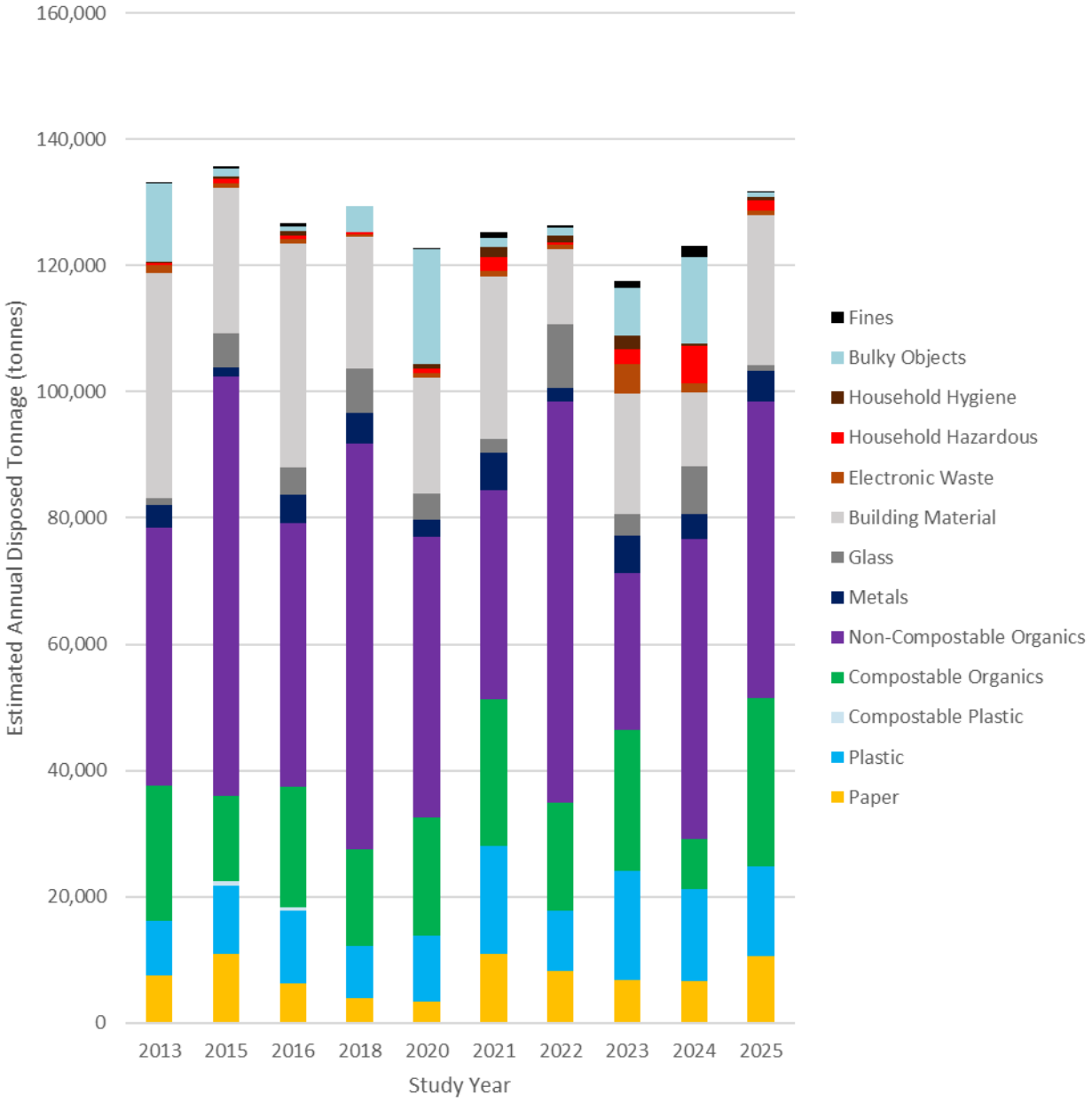


Figure 4-4: Historical Comparison of Estimated Annual Disposed Tonnages for the SL Sector

Figure 4-5 shows the historical comparisons of the estimated annual per capita disposal rate for the region, which is calculated as a weighted average based on composition and disposed tonnage data from all sectors, as well as the estimated population of Metro Vancouver.

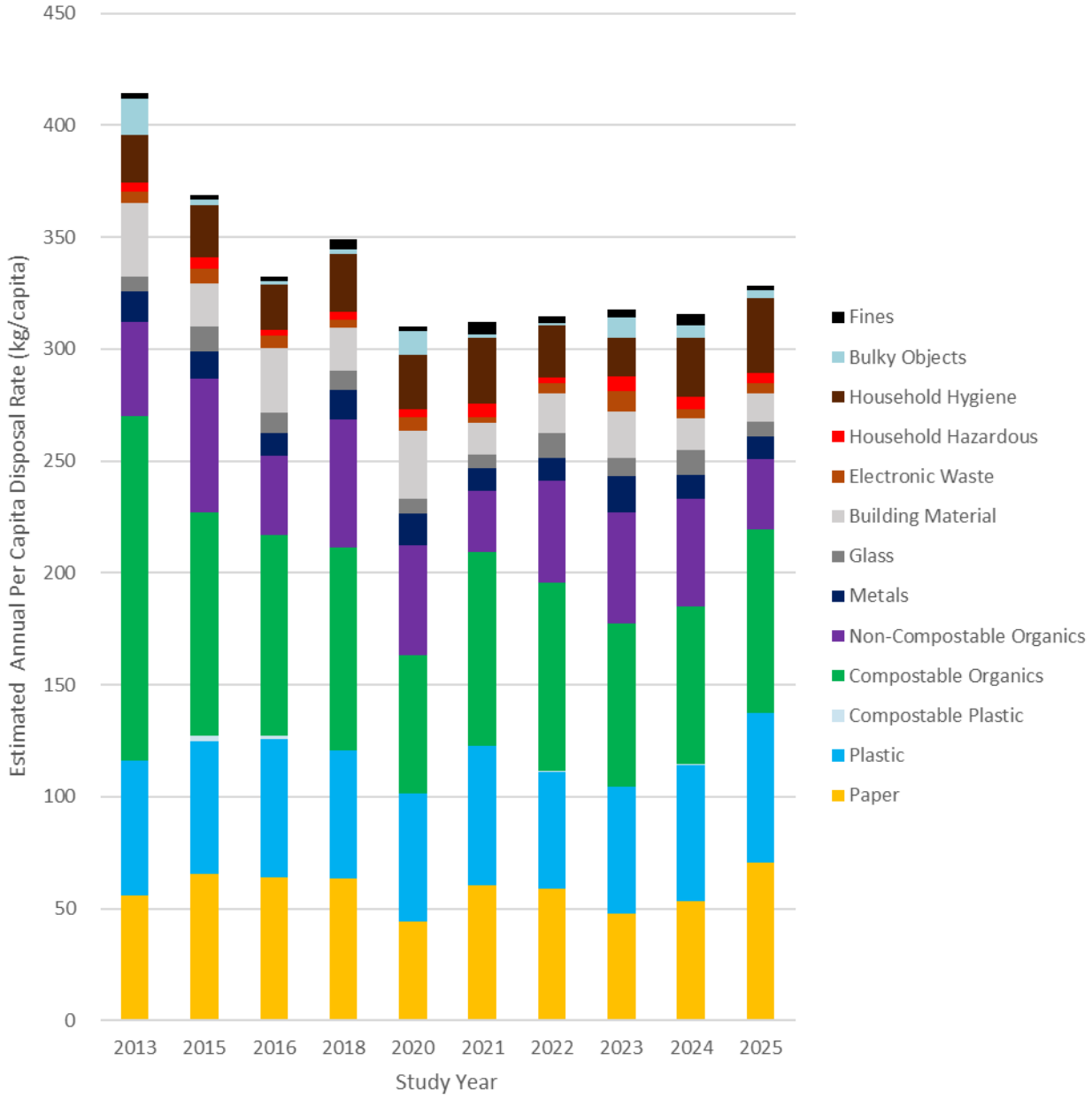


Figure 4-5: Historical Comparison of the Regional Annual Per Capita Disposal Rate

4.3 Composition by Functional Categories

Table 4-3 summarizes the waste composition results by functional categories. Not all material categories are assigned functional categories. The regional average is calculated as a weighted average based on composition and disposed tonnage data from all sectors.

Table 4-3: Functional Categories Composition

Functional Category	SF	MF	CI	SL	Regional Average
C&D	5%	2%	6%	70%	13%
PPE	<1%	1%	2%	<1%	1%
SUIs	3%	4%	4%	<1%	3%
Textiles	7%	6%	5%	3%	5%

Note:
Percentages are rounded to the nearest whole number and may not add to 100%.

The regional average composition by functional categories can be broken down as follows:

- **C&D** (13%), which included treated or painted wood – finished wood (5.5%), other clean wood (2.1%), other inorganic building materials (1.3%, e.g., insulation, linoleum, siding), and masonry without mortar (1.3%).
- **Textiles** (5%), which included synthetic textiles – clothing and accessories (1.9%) and synthetic textiles – household (1.9%).
- **SUIs** (3%), which included paper bags (0.6%), rigid plastic takeout containers (0.6%), plastic-lined paper hot cups (0.5%).
- **PPE** (1%), which included masks, gloves, and disinfectant wipes (each less than 1%).

4.4 Single-Use Item Disposal

The following section summarizes the estimated amount of SUI disposed in the garbage stream.

Figure 4-6 shows the estimated annual disposed tonnage of SUIs disposed from each sector in 2025. By tonnages, more SUIs were disposed from the CI and MF sectors than from the SF or SL sectors.

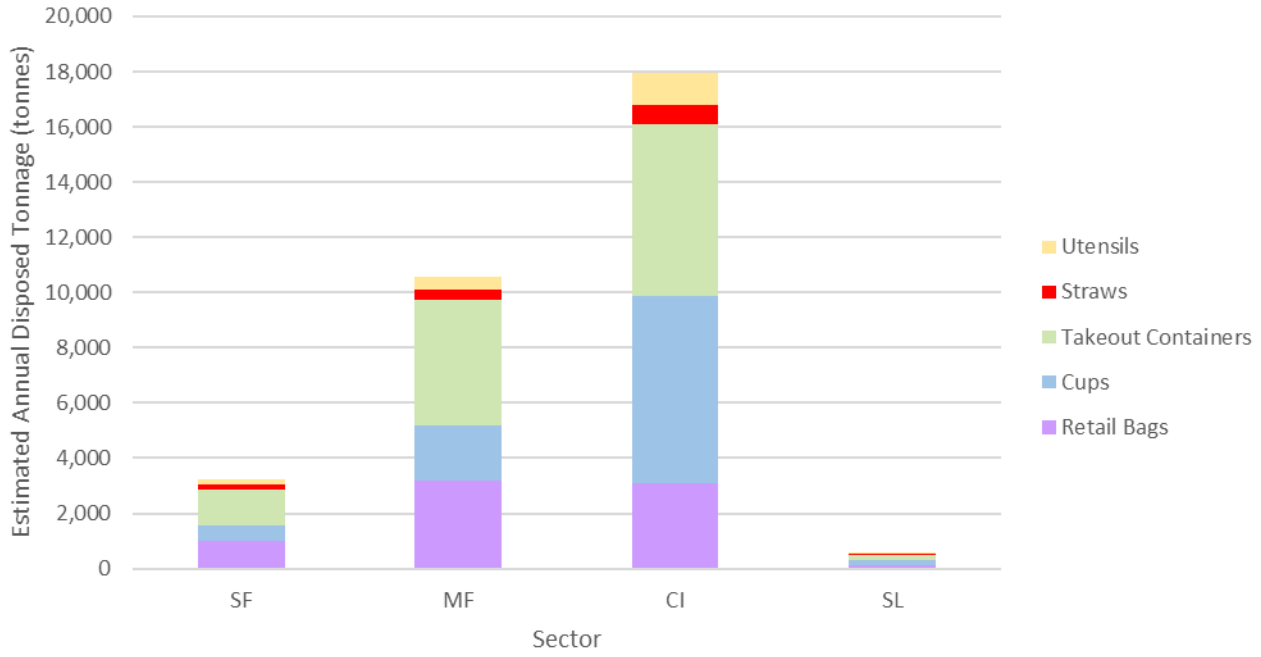


Figure 4-6: Estimated Number of SUIs Disposed by Each Sector in 2025

Figure 4-7 compares the estimated number of SUIs disposed from 2018 to 2025 in millions of units, grouped by sector.

The trends in the estimated number of SUIs disposed varied between sectors. The estimated number of SUIs disposed by the SF sector in 2025 has decreased compared to previous years, which was mainly attributed to decreased numbers of retail bags, cups, and takeout containers in the SF samples. The estimated number of SUIs disposed by the MF sector has fluctuated during different studies. The estimated number of SUIs disposed by the CI sector in 2025 has increased compared to previous years, which was mainly attributed to increased numbers of all SUIs (retail bags, takeout containers, cups, utensils, and straws) in the CI samples. The estimated number of SUIs disposed by the SL sector has fluctuated during different studies but has remained relatively low compared to other sectors.

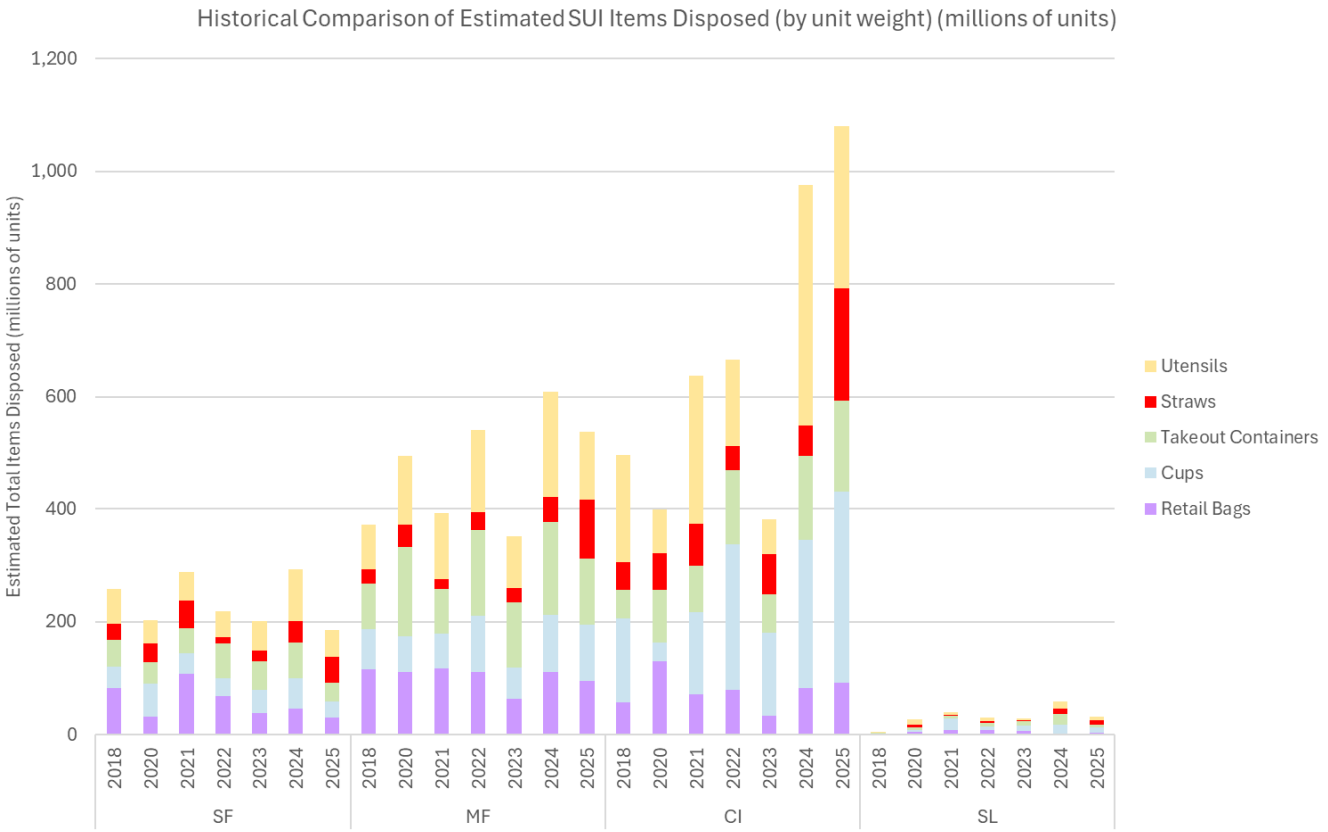


Figure 4-7: Historical Comparison of the Estimated Number of Disposed SUIs by Sector

Table 4-4 presents the regional average per capita disposal rate for SUIs from 2018 to 2025. The regional average is calculated as a weighted average based on the number of SUIs found in samples from each sector, disposed tonnage data from all sectors, and population data. To more accurately account for the contribution of each sector to the regional total, adjustments were made to historical data to align with a sector-specific methodology rather than an aggregate approach.

Table 4-4: Historical Comparison of SUI Disposal per Capita (in Units per Capita)

SUI Category	2018	2020	2021	2022	2023	2024	2025
Retail Bags	100	61	107	95	50	82	73
Cups	102	35	88	141	88	117	157
Takeout Containers	70	50	74	125	85	106	105
Straws	40	37	51	31	40	48	118
Utensils	130	47	155	125	74	230	152
Total SUIs	**443**	**231**	**476**	**518**	**337**	**583**	**605**

Note:
Disposal per capita data are rounded to the nearest whole number for each SUI category and may not add to the total.

The SUI disposal per capita has fluctuated during the different studies and observations include the following:

- **Retail bags**: decreased in 2025 compared to the per capita disposal rates found during previous studies, primarily due to decreases in the number of plastic bags disposed. However, the decrease in plastic bags is partially offset by increases in the amount of paper bags and single-use fabric bags found in the waste stream.
- **Straws**: higher in 2025 compared to the per capita disposal rates found during previous studies. In 2025, data indicates that straw counts were influenced by samples with high numbers of straws.
- **Takeout containers**: per capita disposal rates remained at similar levels compared to 2024 results
- **Utensils**: per capita disposal rates decreased in 2025 compared to 2024 results. The number of utensils in the garbage stream is relatively high in 2024 and 2025 compared to previous studies. Increases in the number of both wooden and plastic utensils were observed in 2024 and 2025.
- **Cups**: increased in 2025 compared to per capita disposal rates found during previous studies. Paper (lined with plastic) cups remain more prevalent in waste stream than plastic cups. The number of foam cups disposed has clearly declined since 2018.

4.4.1 Single-Use Item Disposal by Category

The following section shows the breakdown of individual SUI categories by material types. For the SUI categories (i.e., retail bags, straws, takeout containers, utensils, and cups), breakdowns are shown to spot notable changes compared to previous studies and to track progress on the ban of single-use plastic as applicable.

Retail Bags

Figure 4-8 compares the estimated number of retail bags (in millions of units) disposed from 2018 to 2025. Since 2021, there has been a general decreasing trend in the total number of retail bags disposed. There has also been a notable decrease in the number of plastic bags found in the garbage stream, but the decrease is partially offset by increases in the amount of paper bags and single-use fabric bags found in the waste stream.

In 2023, a province-wide Single-Use and Plastic Waste Prevention Regulation was approved by the Government of BC. Single-use plastic shopping bags were banned effective January 15, 2024.

The following considerations should be noted regarding the data on retail bags in the garbage stream:

- Single-use fabric bags were added as a category in 2025 and were not tracked as a SUI category in previous studies.
- The amount of SUIs found in the garbage stream in 2023 appears to be an outlier in the overall trend.
- The decreasing trend in retail bags is less apparent when comparing the total number of units (i.e., Figure 4-8) than when comparing per capita data (i.e., Table 4-4). This is because the population of Metro Vancouver has increased over this period of time.

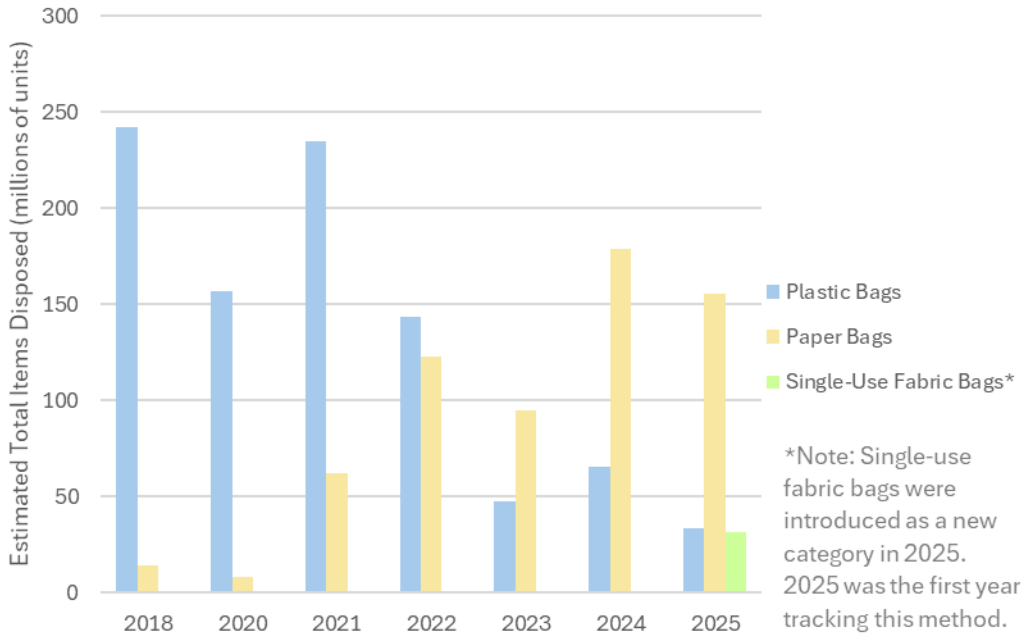


Figure 4-8: Historical Comparison of the Estimated Number of Disposed Retail Bags

Straws

Figure 4-9 compares the estimated number of straws disposed (in millions of units) from 2018 to 2025. An increased number of straws was observed in 2025. Upon further analysis, two CI samples were identified with high counts of straws, containing approximately 120 and 160 straws, respectively. Combined, the straws in these samples account for 32.9% of the total sampled straw count in the CI sector. Rather than excluding these data points, the revised 2024 methodology recognizes that such outliers may reflect genuine waste generation patterns within the CI sector. A similar spike was observed in 2024 for utensils, reinforcing this variability. These results highlight that waste from the CI sector can be highly variable, and that relatively small differences in sampling can disproportionately influence reported quantities. Further data collection in future years will be required to better assess trends.

In 2025, field staff observed that there were many plastic straws that were suspected to be compostable plastic straws, though the exact material of the straw is difficult to determine in the field. The number of paper straws have also increased between 2022 and 2025.

As of December 20, 2023, BC food service providers can only provide single-use accessories such as straws on request. Straws that are made of plastic, including those made partly of plastic and those made with compostable, biodegradable or oxo-degradable plastic were prohibited from being provided to customers.

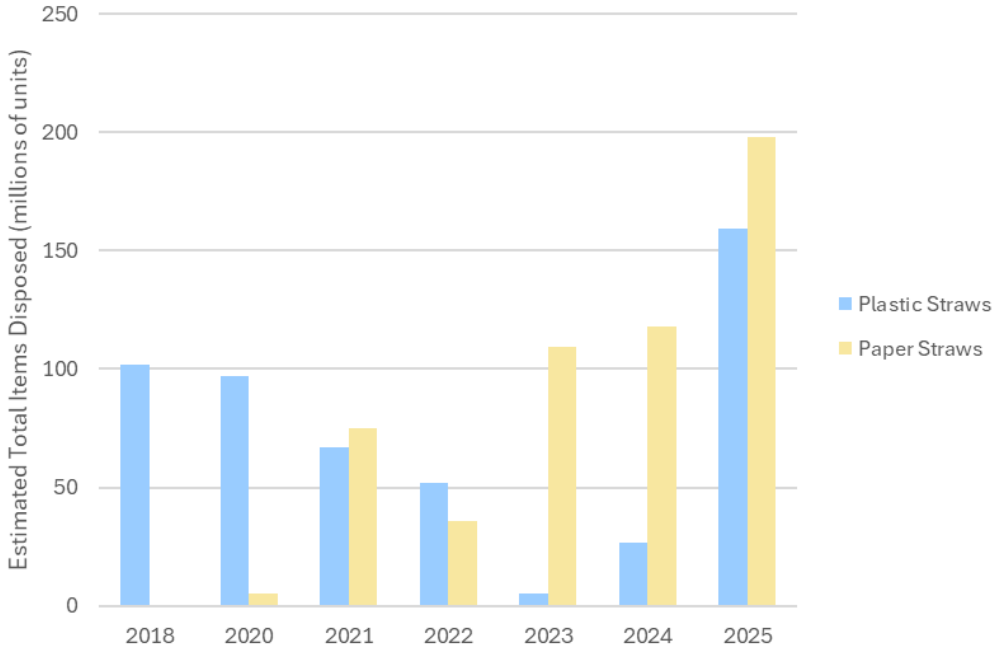


Figure 4-9: Historical Comparison of the Estimated Number of Disposed Straws

Utensils

Figure 4-10 compares the estimated number of utensils disposed (in millions of units) from 2018 to 2025. The number of utensils in the garbage stream is relatively high in 2024 and 2025 compared to previous studies. Increases in the number of both wooden and plastic utensils were observed in 2024 and 2025. Generally, more wooden utensils than plastic utensils are disposed.

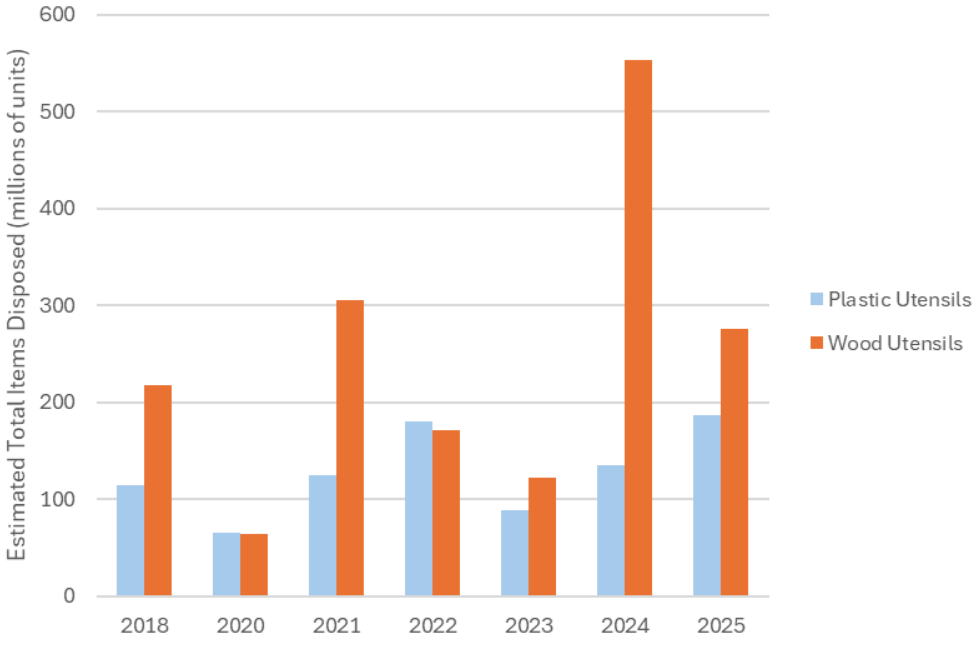


Figure 4-10: Historical Comparison of the Estimated Number of Disposed Utensils

Takeout Containers

Figure 4-11 compares the estimated number of takeout containers disposed (in millions of units) from 2018 to 2025. The number of takeout containers in the garbage stream in 2025 remained at similar levels compared to the amount observed in 2024. The proportion of paper takeout containers to plastic takeout containers appears to fluctuate over time. Foam takeout containers substantially reduced since 2018.

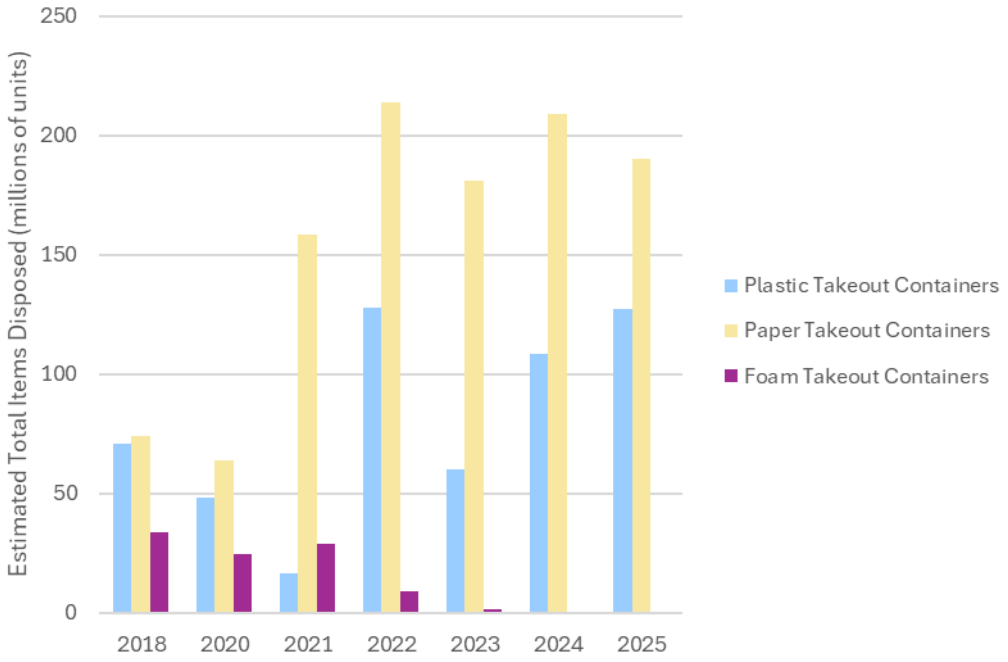


Figure 4-11: Historical Comparison of the Estimated Number of Disposed Takeout Containers

Cups

Figure 4-12 compares the estimated number of cups disposed (in millions of units) from 2018 to 2025. The number of cups in the garbage stream in 2025 increased compared to the amount observed in 2024. Paper (lined with plastic) cups remain more prevalent in the waste stream than plastic cups. The number of foam cups disposed has clearly declined since 2018.

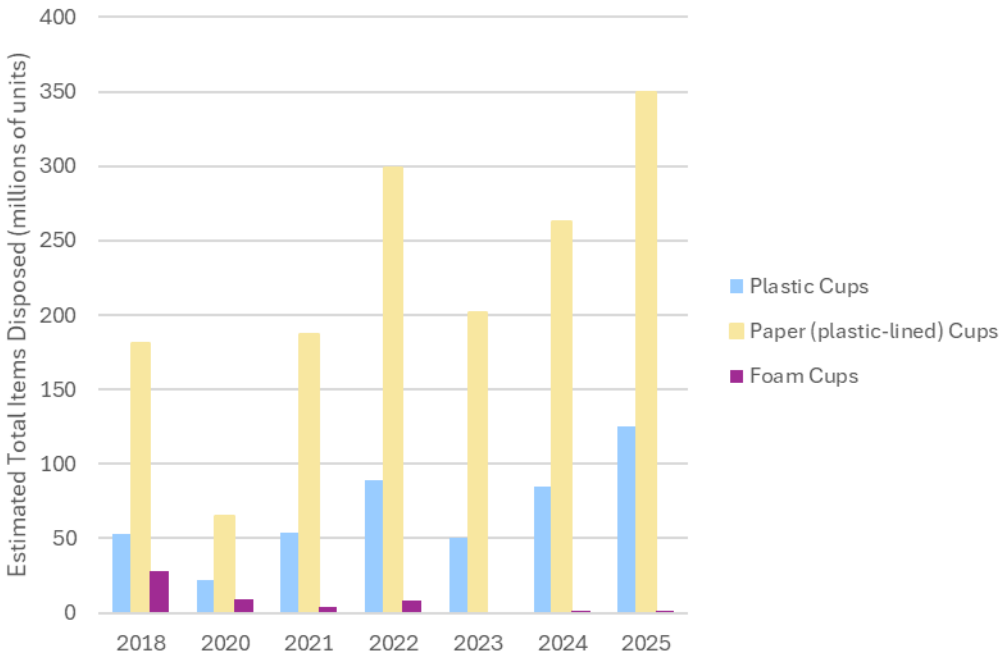


Figure 4-12: Historical Comparison of the Estimated Number of Disposed Cups

4.4.2 Outliers for Single-Use Item Analysis

Following the box-and-whiskers plot method, five SF sector samples and one MF sector sample were determined to be outliers. The SL and CI sectors do not require analysis of outliers as per the methodology that began in 2024. For further details on outlier determination, please refer to the methodology section.

Sector samples classified as outliers were not included in the SUI disposal rate results, however they were included in unit weight calculations to best determine the unit weights of tertiary categories.

5.0 LIMITATIONS OF STUDY

Limitations of this study include the following:

- **Time of year:** the study was conducted in the fall, similar to previous studies. However, the results may not be representative of the composition of the waste stream disposed in the region for the whole year. Variances may include variations in the amount and types of garbage generated due to factors such as seasonal variations in yard waste, differing weather conditions, and proximity to holidays.
- **Sectors characterized**: the full-scale waste composition study focuses on four sectors, the SF, MF, CI, and SL sector, and does not include the C&D sector. A study on the composition of waste from the C&D sector was also conducted and the results summarized in another report. The results from the C&D sector have been excluded from this report; therefore, the regional average composition presented in this report does not include the C&D sector.
- **Waste management facilities included:** the 2025 study was conducted for one week each at United Blvd., North Surrey, WTE, and VSTS. Previous studies have been conducted at different waste management facilities for different periods of time. For example, the 2024 study was conducted at North Surrey (one week), United Blvd (two weeks), and VSTS (one week), while the 2023 study was conducted at North Surrey (one week),

United Blvd (two weeks), and North Shore Recycling and Waste Centre (one week). While the waste disposed at each waste management facility is assumed to be similar, the types and amounts of waste at each regional facility may be slightly different based on the proximity to different types of commercial activities, residential neighbourhoods, and other factors. The variances may lead to slightly different estimates for the average regional waste composition.

- **Bulky Objects:** the proportion of bulky objects (e.g., large appliances, mattresses, furniture) may be underestimated due to physical limitations on field staff's ability to collect and weigh these items.

6.0 SUMMARY OF FINDINGS

The following is a summary of notable changes in the regional garbage stream composition when compared to previous studies:

- There is an increase in the paper category (21% in 2025 versus 17% in 2024 and 14% in 2023). The increase can be attributed to increases in other compostable (food-soiled) paper and non-compostable/non-recyclable paper in the 2025 samples.
- There is a consistent increase in plastics from (17% in 2022, rising one percent per year to 20% in 2025) and in 2025 the plastics primarily composed of flexible plastics, synthetic textiles and rigid packaging.
- There is a slight increase in the compostable organics category (25% in 2025 versus 22% in 2024 and 23% in 2023). The increase can be attributed to increases in small yard waste, avoidable food waste in the 2025 samples. Generally, the proportion of compostable organics in the garbage stream has fluctuated, ranging between 22% and 28% for the studies completed between 2021 and 2025.
  - Small yard waste is defined as yard waste that is less than 15 cm in diameter or 1 m long. Examples include branches, leaves, and potted plants.
- There is a decrease in the non-compostable organics category (9% in 2025 versus 15% in 2024 and 2023). The decrease can be attributed to less treated or painted wood from the CI sector in the 2025 samples.

Notable changes in the estimated amount of SUIs disposed in the garbage stream include the following:

- **Retail bags**: decreased in 2025 compared to the per capita disposal rates found during previous studies, primarily due to decreases in the number of plastic bags disposed. However, the decrease in plastic bags is partially offset by increases in the amount of paper bags and single-use fabric bags found in the waste stream.
- **Straws**: higher in 2025 compared to the per capita disposal rates found during previous studies. In 2025, data indicates that straw counts were influenced by samples with high numbers of straws.
- **Utensils**: per capita disposal rates decreased in 2025 compared to 2024 results. The number of utensils in the garbage stream is relatively high in 2024 and 2025 compared to previous studies. Increases in the number of both wooden and plastic utensils were observed in 2024 and 2025.
- **Takeout Containers**: The number of takeout containers in the garbage stream in 2025 remained at similar levels compared to the amount observed in 2024. The proportion of paper takeout containers to plastic takeout containers appears to fluctuate over time. Foam takeout containers substantially reduced since 2018.
- **Cups**: increased in 2025 compared to per capita disposal rates found during previous studies. Paper (lined with plastic) cups remain more prevalent in waste stream than plastic cups. The number of foam cups disposed has clearly declined since 2018.

7.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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APPENDIX A

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOENVIRONMENTAL

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APPENDIX B

SELECTED PHOTOGRAPHS



Photo 1: United Boulevard Recycling and Waste Centre Tipping Area

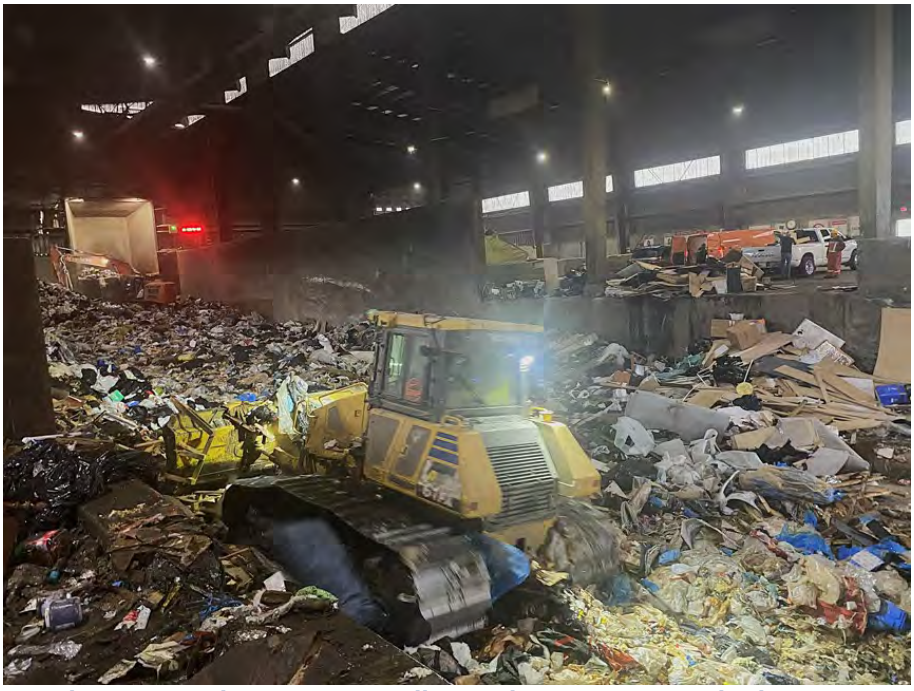


Photo 2: North Surrey Recycling and Waste Centre Tipping Area



Photo 3: Burnaby Waste-to-Energy Centre Tipping Area



Photo 4: Vancouver South Transfer Station Tipping Area



Photo 5: Garbage Load being Tipped at United Boulevard Recycling and Waste Centre



Photo 6: Field Team Collecting a Sample at North Surrey Recycling and Waste Centre

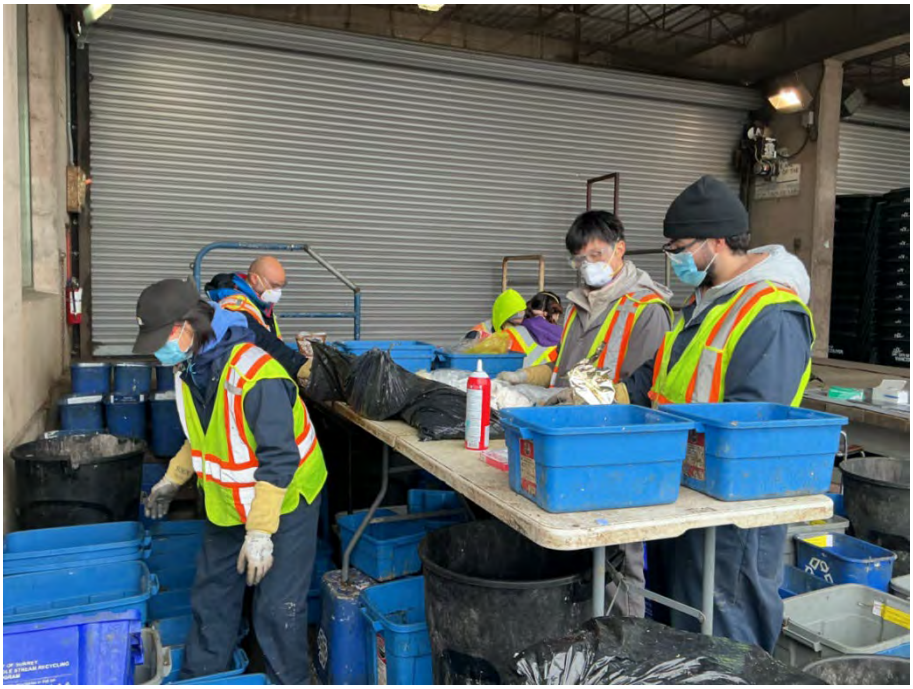


Photo 7: Field Team Sorting a Sample at Vancouver South Transfer Station



Photo 8: Field Team Recording Category Weights at Burnaby Waste-to-Energy Centre



Photo 9: Example of a Portion of a Single Family Load



Photo 10: Example of a 100 kg Single Family Sample



Photo 11: Example of a Multi-Family Load



Photo 12: Example of a 100 kg Multi-Family Sample



Photo 13: Example of a Commercial/Institutional Load



Photo 14: Example of a 100kg Commercial/Institutional Sample



Photo 15: Example of a Small Loads Sample



Photo 16: Example of a Small Loads Sample



Photo 17: Example of the Other Fine Office Paper or Envelopes Category



Photo 18: Example of the Old Corrugated Cardboard Category



Photo 19: Example of the Paper Bags Category



Photo 20: Example of the Non-Compostable, Non-Recyclable Paper



Photo 21: Example of the Flexible Plastics – Other Flexible Plastic Packaging Category



Photo 22: Example of the Textiles (Synthetic) – Household Category



Photo 23: Example of the Rigid Beverage Containers – Rigid Plastic Cups Category



Photo 24: Example of the #1 Polyethylene Terephthalate – Other Packaging Category



Photo 25: Example of the Durable Plastic Products Category



Photo 26: Example of the Unavoidable Food Waste Category



Photo 27: Example of the Food Waste – Avoidable Whole Fruits and Vegetables Category



Photo 28: Example of the Food Waste – Avoidable Baked Goods Category



Photo 29: Example of the Wood Utensils Category



Photo 30: Example of the Textiles – Household Category



Photo 31: Example of the Non-Ferrous – Foil Trays, Wrap Category



Photo 32: Example of the Lightbulbs (Non-Hazardous) Category



Photo 33: Example of the Gypsum/Drywall Category



Photo 34: Example of the Small Appliances & Floor Care Appliances Category



Photo 35: Example of the Other Electronics Category



Photo 36: Example of the Pressurized Containers Category



Photo 37: Example of the Household Batteries (Non-Lithium Ion) Category



Photo 38: Example of the Medical/Biological – Sharps Category



Photo 39: Example of the Pharmaceuticals Category



Photo 40: Example of the Diapers Category

APPENDIX C

MATERIAL CATEGORIES

Table C-1: Material Category Descriptions

Category		Functional Category	SUI Category
01. Paper			
Fine, Office, Envelopes	Junk Mail, Flyers, Unaddressed Mail		
	Other Fine Office Paper or Envelopes		
Newsprint	Newsprint		
Old Corrugated Cardboard (OCC)	Clean Recyclable OCC		
	Plastic-lined OCC		
	Other Soiled OCC		
Boxboard	Cereal Boxes and Other Box Packaging		
Bound Paper Products	Telephone Books		
	Magazines		
	Books		
Beverage Containers - Gabletop / Drink Box / Aseptic	Dairy or Dairy Substitute		
	Non-Dairy		
Other Paper	Plastic-Lined Paper Hot Cups	SUI	Cups
	Plastic-Lined Paper Cold Cups	SUI	Cups
	Plastic-Lined Paper Cups Labeled Compostable	SUI	Cups
	Paper Bags	SUI	Retail Bags
	Paper Party Décor		
	Other Recyclable Paper		
	Other Compostable (Food-Soiled) Paper		
	Non-Compostable, Non-Recyclable Paper		
	Paper Straws	SUI	Straws
	Unlined Paper Takeout Containers	SUI	Takeout Containers
	Plastic-Lined Paper Takeout Containers	SUI	Takeout Containers
	Plastic-Lined Paper Takeout Containers, Bowls	SUI	Takeout Containers
02. Plastic			
Flexible Plastics	Re-Used Plastic Bags (HDPE & LDPE)	SUI	Retail Bags
	Empty Plastic Bags (HDPE & LDPE)	SUI	Retail Bags
	HDPE & LDPE Consumables Packaging Bags and Film		
	Other Flexible Plastic Packaging		

Category		Functional Category	SUI Category
	Garbage Bags		
	Recycling Bags		
	Conventional Plastic Freezer & Sandwich Bags		
	Deposit Beverage Pouches		
	Other Plastic Film		
	Single-Use Fabric Bags (Non-Washable)	SUI	Retail Bags
Textiles (Synthetic)	Clothing and Accessories	Textiles	
	Household	Textiles	
	Reusable Bags (Washable)	Textiles	
	Other	Textiles	
Rigid Beverage Containers	Deposit Containers - Dairy or Dairy Substitute		
	Deposit Containers – Water		
	Deposit Containers – Other		
	Rigid Plastic Cups	SUI	Cups
	Other		
Rigid (non-beverage)	#1 PETE – Bottles and Jars		
	#1 PETE – Other Packaging		
	#2 HDPE – Bottles and Jugs		
	#2 HDPE – Tubs and Lids		
	#3 PVC		
	#4 LDPE		
	#5 PP		
	#6 PS – Non-Foam		
	#6 PS – Packing Foam		
	Foam Cups	SUI	Cups
	#6 PS – Foam foodware		
	#6 PS – Other PS Foam		
	Other Foam		
	Other Uncoded		
	#7 Mixed Resin Plastic		
	Uncoded Packaging/ Containers		
	Non-Durable Plastic Food Containers		
	Foam Takeout Containers	SUI	Takeout Containers
	Rigid Plastic Takeout Containers	SUI	Takeout Containers

Category		Functional Category	SUI Category
Other	Plastic Straws	SUI	Straws
	Durable Plastic Products		
	Recyclable Durable Plastic Products		
	Coffee Pods		
	Other/Mixed Plastics		
	Plastic Utensils	SUI	Utensils
03. Compostable Plastic			
Foodware	Rigid Plastic Cups Labeled Compostable	SUI	Cups
	Plastic Takeout Containers Labeled Compostable	SUI	Takeout Containers
Film	Plastic Bags Labeled Compostable	SUI	Retail Bags
Foodware	Other Foodware Labeled Compostable	SUI	Utensils
Film	Bags and Liners		
Other Compostable Products and Packaging	Packaging, Bottles		
04. Compostable Organics			
Yard & Garden	Small Yard Waste		
	Large Yard Waste		
Food Waste – Unavoidable	Unavoidable Food Waste		
Food Waste – Avoidable	Plate Scrapings, Unfinished Meals		
	Whole Fruits and Vegetables		
	Whole Meats, Fish		
	Full/Unused Ready-Made		
	Baked Goods		
	Dairy		
	Liquids (Drinks, Oil in Package)		
	Candy and Snacks		
	Condiments and Sauces		
	Pet Food		
Clean Wood	Wood Pallets	C&D	
	Unfinished Wood Furniture	C&D	
	Wood Utensils	SUI	Utensils
	Other Wood	C&D	
Other Compostable Organics	Manure, Slaughterhouse, Animals		

Category		Functional Category	SUI Category
05. Non-Compostable Organics			
Treated or Painted Wood	Pressure Treated Wood	C&D	
	Finished Wood	C&D	
	Finished Wood Furniture	C&D	
Textiles	Natural Fiber Clothing	Textiles	
	Household	Textiles	
	Reusable bags	Textiles	
	Other	Textiles	
Rubber	Tires		
	Other Rubber		
Leather / Multiple / Composite Organic Materials	Leather		
Other Compostable Organics	Composite Organic Materials (Shoes)		
	Other		
06. Metal			
Ferrous	Food Containers		
	Spiral-Wound Containers		
	Other Ferrous		
Bimetallic	Food Containers		
Non-Ferrous (Copper, Aluminum, Brass)	Alcoholic		
	Non-Alcoholic		
	Food Containers		
	Foil Trays, Wrap		
	Other Non-Ferrous		
Non-Consumable Mixed Metals	Household		
	Machine Parts		
	Construction/Industrial		
07. Glass			
Beverage Containers	Beer		
	Other Alcohol		
	Non-Alcoholic & Non-Dairy		
	Dairy or Dairy Substitute		
Food Containers	Food Containers		
Other Glass and Ceramics	Other Glass and Ceramics		
	Light bulbs (Non-hazardous)		

Category		Functional Category	SUI Category
08. Building Material			
Gypsum / Drywall/ Plaster	Gypsum/Drywall	C&D	
Masonry	Masonry (Without Mortar)	C&D	
Rock, Sand, Dirt	Rock, Sand, Dirt	C&D	
Rigid Asphalt	Rigid Asphalt	C&D	
Carpet Waste	Carpet	C&D	
	Underlay	C&D	
Other Inorganics	Other Inorganics	C&D	
09. Electronic Waste			
Computers and Peripherals	Desktop Computers		
	Notebook Computers		
	Computer Peripherals		
	Computer Monitors		
	Printers, Scanners		
Televisions & Audio/Video Equipment	Televisions		
	Other Audio/Video		
Telephones & Telecommunications Equipment	Mobile Phones & Accessories		
	Other		
Small Appliances & Floor Care Appliances	Small Appliances & Floor Care Appliances		
Electronic Toys	Electronic Toys		
Smoke Detectors	Smoke Detectors		
Other Electronics	Other Electronics		
10. Household Hazardous			
Batteries	Lead Acid		
	Household Batteries (Non Lithium-Ion)		
	Lithium Ion Batteries		
Medical/Biological	Sharps		
	Animal Carcass		
	Other		
Household Hazardous Waste	Stains/Preservatives		
	Latex Paint		
	Oil-Based Paint		
	Paint Aerosols		

Category		Functional Category	SUI Category
	Solvents		
	Cleaners, Soaps etc.		
	Pesticides/Herbicides		
	Motor Oil		
	Oil Filters		
	Antifreeze		
	Pharmaceuticals		
	Other Petroleum Based Products		
	Other		
	Pressurized Containers		
Mercury Containing Items	Thermostats and Switches		
	Compact Fluorescent Lamp		
11. Household Hygiene			
Biological	Diapers		
	Pet Waste		
	Other (sanitary products, condoms)		
Public Health	Masks	PPE	
	Gloves	PPE	
	Wipes	PPE	
Liquid Product	Personal Care		
12. Bulky Objects			
White Goods	Large Appliances		
Furniture	Mattresses, Box Springs		
	Other Upholstered Furniture		
	Other Furniture		
13. Fines			
Fines	Fines		

Notes:
C&D = Construction and Demolition.
HDPE = High-Density Polyethylene.
LDPE = Low-Density Polyethylene.
OCC = Old Corrugated Cardboard.
PETE = Polyethylene Terephthalate.
PP = Polypropylene.
PPE = Personal Protective Equipment.
PS = Polystyrene.
PVC = Polyvinyl Chloride.
SUI – Single-Use Item

APPENDIX D

WASTE COMPOSITION RESULTS

Table D-1: Waste Composition Results

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
01. Paper	**17.1%**	**21.4%**	**26.7%**	**8.0%**	**21.5%**
Fine, Office, Envelopes – Junk Mail, Flyers, Unaddressed Mail	0.5%	0.5%	0.4%	0.0%	0.4%
Fine, Office, Envelopes – Other Fine Office Paper or Envelopes	1.5%	1.2%	2.0%	0.3%	1.5%
Newsprint	0.1%	0.0%	0.1%	0.0%	0.1%
OCC – Clean Recyclable OCC	1.0%	2.4%	4.0%	3.0%	3.0%
OCC – Plastic-lined OCC	0.0%	0.0%	0.1%	0.0%	0.0%
OCC – Other Soiled OCC	0.1%	0.2%	0.5%	0.0%	0.3%
Boxboard – Cereal Boxes and Other Box Packaging	2.1%	2.9%	2.6%	1.7%	2.5%
Bound Paper Products – Telephone Books	0.1%	0.0%	0.0%	0.0%	0.0%
Bound Paper Products – Magazines	0.2%	0.3%	0.1%	0.0%	0.2%
Bound Paper Products – Books	0.2%	0.2%	0.0%	0.1%	0.1%
Beverage Containers – Gabletop/Drink Box/Aseptic – Dairy or Dairy Substitute	0.0%	0.2%	0.0%	0.0%	0.1%
Beverage Containers – Gabletop/Drink Box/Aseptic – Non-Dairy	0.1%	0.1%	0.1%	0.0%	0.1%
Other Paper – Plastic-Lined Paper Hot Cups	0.2%	0.4%	0.9%	0.1%	0.5%
Other Paper – Plastic-Lined Paper Cold Cups	0.1%	0.1%	0.2%	0.0%	0.2%
Other Paper – Plastic-Lined Paper Cups Labeled Compostable	0.0%	0.0%	0.0%	0.0%	0.0%
Other Paper – Paper bags	0.6%	0.9%	0.5%	0.1%	0.6%
Other Paper – Paper Party Décor	0.0%	0.0%	0.0%	0.0%	0.0%
Other Paper – Other Recyclable Paper	0.5%	0.5%	0.7%	1.2%	0.7%
Other Paper – Other Compostable Paper	7.4%	8.8%	8.6%	0.8%	7.5%
Other Paper – Non-Compostable, Non-Recyclable Paper	1.7%	1.9%	4.9%	0.5%	3.1%
Other Paper – Paper Straws	0.1%	0.1%	0.1%	0.0%	0.1%
Other Paper – Unlined Paper Takeout Containers	0.2%	0.3%	0.3%	0.1%	0.3%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Other Paper – Plastic-Lined Paper Takeout Containers	0.3%	0.3%	0.3%	0.0%	0.3%
Other Paper – Plastic-Lined Paper Takeout Containers, Bowls	0.1%	0.2%	0.1%	0.0%	0.1%
02. Plastic	**23.0%**	**20.8%**	**22.2%**	**10.8%**	**20.4%**
Flexible Plastics – Re-Used Plastic Bags (HDPE & LDPE)	0.1%	0.1%	0.1%	0.0%	0.1%
Flexible Plastics – Empty Plastic Bags (HDPE & LDPE)	0.0%	0.0%	0.0%	0.0%	0.0%
Flexible Plastics – HDPE & LDPE Consumables Packaging Bags and Film	1.7%	1.7%	2.3%	0.3%	1.8%
Flexible Plastics – Other Flexible Plastic Packaging	5.1%	3.7%	3.4%	0.9%	3.4%
Flexible Plastics – Garbage Bags	1.7%	2.0%	2.2%	0.5%	1.8%
Flexible Plastics – Recycling Bags	0.0%	0.0%	0.0%	0.3%	0.1%
Flexible Plastics – Conventional Plastic Freezer & Sandwich Bags	0.4%	0.3%	0.2%	0.1%	0.2%
Flexible Plastics – Deposit Beverage Pouches	0.0%	0.0%	0.0%	0.0%	0.0%
Flexible Plastics – Other Plastic Film	1.1%	0.3%	0.9%	1.3%	0.8%
Flexible Plastics – Single-Use Fabric Bags (Non-Washable)	0.1%	0.1%	0.1%	0.0%	0.1%
Textiles (Synthetic) – Clothing and Accessories	3.4%	2.7%	1.5%	0.5%	1.9%
Textiles (Synthetic) – Household	2.1%	2.1%	1.6%	2.3%	1.9%
Textiles (Synthetic) – Reusable Bags (Washable)	0.2%	0.2%	0.2%	0.0%	0.2%
Textiles (Synthetic) – Other	0.4%	0.1%	1.0%	0.6%	0.6%
Rigid Beverage Containers – Deposit Containers – Dairy or Dairy Substitute	0.1%	0.1%	0.1%	0.0%	0.1%
Rigid Beverage Containers – Deposit Containers – Water	0.1%	0.1%	0.1%	0.1%	0.1%
Rigid Beverage Containers – Deposit Containers – Other	0.2%	0.3%	0.2%	0.0%	0.2%
Rigid Beverage Containers – Rigid Plastic Cups	0.1%	0.3%	0.4%	0.0%	0.3%
Rigid Beverage Containers – Other	0.1%	0.1%	0.0%	0.0%	0.1%
Rigid (Non-Beverage) – #1 PETE – Bottles and Jars	0.3%	0.3%	0.2%	0.1%	0.2%
Rigid (Non-Beverage) – #1 PETE – Other Packaging	0.6%	0.8%	0.4%	0.1%	0.5%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Rigid (Non-Beverage) – #2 HDPE – Bottles and Jugs	0.2%	0.3%	0.5%	0.1%	0.3%
Rigid (Non-Beverage) – #2 HDPE – Tubs and Lids	0.0%	0.1%	0.1%	0.1%	0.1%
Rigid (Non-Beverage) – #3 PVC	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – #4 LDPE	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – #5 PP	0.7%	0.9%	1.4%	0.1%	1.0%
Rigid (Non-Beverage) – #6 PS – Non-Foam	0.1%	0.1%	0.1%	0.1%	0.1%
Rigid (Non-Beverage) – #6 PS – Packing Foam	0.1%	0.1%	0.3%	0.1%	0.2%
Rigid (Non-Beverage) – Foam Cups	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – #6 PS – Foam Foodware	0.1%	0.1%	0.0%	0.0%	0.1%
Rigid (Non-Beverage) – #6 PS – Other PS Foam	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – Other Foam	0.0%	0.1%	0.3%	0.0%	0.1%
Rigid (Non-Beverage) – Other Uncoded	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – #7 Mixed Resin Plastic	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – Uncoded Packaging/Containers	0.1%	0.2%	0.1%	0.0%	0.1%
Rigid (Non-Beverage) – Non-Durable Plastic Food Containers	0.1%	0.1%	0.1%	0.0%	0.1%
Rigid (Non-Beverage) – Foam Takeout Containers	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid (Non-Beverage) – Rigid Plastic Takeout Containers	0.5%	0.9%	0.5%	0.0%	0.6%
Other – Plastic Straws	0.1%	0.1%	0.1%	0.0%	0.1%
Other – Durable Plastic Products	1.6%	1.0%	2.4%	1.8%	1.8%
Other – Recyclable Durable Plastic Products	0.1%	0.1%	0.1%	0.1%	0.1%
Other – Coffee Pods	0.5%	0.3%	0.3%	0.0%	0.3%
Other – Other/Mixed Plastics	0.8%	1.1%	0.9%	1.3%	1.0%
Other – Plastic Utensils	0.1%	0.1%	0.1%	0.0%	0.1%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
03. Compostable Plastic	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Foodware – Rigid Plastic Cups Labeled Compostable	0.0%	0.0%	0.0%	0.0%	0.0%
Foodware – Plastic Takeout Containers Labeled Compostable	0.0%	0.0%	0.0%	0.0%	0.0%
Film – Plastic Bags Labeled Compostable	0.0%	0.0%	0.0%	0.0%	0.0%
Foodware – Other Foodware Labeled Compostable	0.0%	0.0%	0.0%	0.0%	0.0%
Film – Bags and Liners	0.0%	0.0%	0.0%	0.0%	0.0%
Other Compostable Products and Packaging – Packaging, Bottles	0.0%	0.0%	0.0%	0.0%	0.0%
04. Compostable Organics	**23.5%**	**28.4%**	**24.8%**	**20.2%**	**25.0%**
Yard & Garden – Small Yard Waste	5.7%	1.2%	4.2%	0.0%	3.1%
Yard & Garden – Large Yard Waste	0.0%	0.0%	0.2%	0.0%	0.1%
Food Waste – Unavoidable – Unavoidable Food Waste	4.3%	7.6%	4.6%	0.2%	4.8%
Food Waste – Avoidable – Plate Scrapings, Unfinished Meals	5.4%	8.4%	5.6%	0.7%	5.6%
Food Waste – Avoidable – Whole Fruits and Vegetables	3.2%	5.0%	3.6%	0.7%	3.5%
Food Waste – Avoidable – Whole Meats, Fish	0.5%	1.2%	1.2%	0.0%	1.0%
Food Waste – Avoidable – Full/Unused Ready-Made	0.5%	0.7%	0.4%	0.4%	0.5%
Food Waste – Avoidable – Baked Goods	1.0%	1.2%	2.2%	0.3%	1.5%
Food Waste – Avoidable – Dairy	0.4%	0.4%	0.2%	0.3%	0.3%
Food Waste – Avoidable – Liquids (Drinks, Oil in Package)	0.3%	0.4%	0.4%	0.6%	0.4%
Food Waste – Avoidable – Candy and Snacks	1.0%	1.0%	0.4%	0.2%	0.6%
Food Waste – Avoidable – Condiments and Sauces	0.7%	1.0%	0.4%	0.2%	0.6%
Food Waste – Avoidable – Pet Food	0.1%	0.1%	0.0%	0.0%	0.0%
Clean Wood – Wood Pallets	0.0%	0.0%	0.0%	3.8%	0.5%
Clean Wood – Unfinished Wood Furniture	0.0%	0.0%	0.1%	0.5%	0.1%
Clean Wood – Wood Utensils	0.1%	0.1%	0.1%	0.0%	0.1%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Clean Wood – Other Wood	0.3%	0.2%	0.8%	12.3%	2.1%
Other Compostable Organics – Manure, Slaughterhouse, Animals	0.0%	0.0%	0.5%	0.0%	0.2%
05. Non-Compostable organics	**6.4%**	**4.8%**	**5.5%**	**35.8%**	**9.5%**
Treated or Painted Wood – Pressure Treated Wood	1.2%	0.1%	0.3%	4.2%	0.9%
Treated or Painted Wood – Finished Wood	1.2%	1.0%	3.0%	27.6%	5.5%
Treated or Painted Wood – Finished Wood Furniture	0.0%	0.0%	0.0%	3.4%	0.5%
Textiles – Natural Fiber Clothing	0.2%	0.4%	0.2%	0.0%	0.2%
Textiles – Household	0.5%	0.5%	0.5%	0.0%	0.4%
Textiles – Reusable Bags	0.0%	0.0%	0.0%	0.0%	0.0%
Textiles – Other	0.0%	0.0%	0.0%	0.0%	0.0%
Rubber – Tires	0.0%	0.0%	0.0%	0.0%	0.0%
Rubber – Other Rubber	0.1%	0.0%	0.1%	0.0%	0.0%
Leather/Multiple/Composite Organic Materials – Leather	0.4%	0.1%	0.1%	0.0%	0.1%
Other – Composite Organic Materials (Shoes)	2.2%	2.5%	1.3%	0.5%	1.6%
Other	0.5%	0.2%	0.2%	0.0%	0.2%
06. Metals	**2.9%**	**2.9%**	**3.2%**	**3.6%**	**3.1%**
Ferrous – Food Containers	0.3%	0.5%	0.5%	0.0%	0.4%
Ferrous – Spiral-Wound Containers	0.1%	0.1%	0.1%	0.0%	0.1%
Ferrous – Other Ferrous	0.6%	0.9%	1.0%	2.6%	1.1%
Bimetallic – Food Containers	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Ferrous (Copper, Aluminum, Brass) – Alcoholic	0.0%	0.1%	0.0%	0.1%	0.1%
Non-Ferrous (Copper, Aluminum, Brass) – Non-Alcoholic	0.1%	0.2%	0.1%	0.0%	0.1%
Non-Ferrous (Copper, Aluminum, Brass) – Food Containers	0.1%	0.1%	0.1%	0.0%	0.1%
Non-Ferrous (Copper, Aluminum, Brass) – Foil Trays, Wrap	0.5%	0.3%	0.3%	0.1%	0.3%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Non-Ferrous (Copper, Aluminum, Brass) – Other Non-Ferrous	0.2%	0.1%	0.1%	0.2%	0.1%
Non-Consumable Mixed Metals – Household	1.1%	0.5%	1.0%	0.3%	0.8%
Non-Consumable Mixed Metals – Machine Parts	0.0%	0.0%	0.1%	0.0%	0.0%
Non-Consumable Mixed Metals – Construction/Industrial	0.0%	0.0%	0.0%	0.4%	0.0%
07. Glass	**1.7%**	**2.8%**	**2.1%**	**0.7%**	**2.0%**
Beverage Containers – Beer	0.0%	0.1%	0.0%	0.0%	0.0%
Beverage Containers – Other Alcohol	0.2%	0.3%	0.8%	0.0%	0.5%
Beverage Containers – Non-Alcoholic & Non-Dairy	0.0%	0.2%	0.3%	0.1%	0.2%
Beverage Containers – Dairy or Dairy Substitute	0.0%	0.0%	0.0%	0.0%	0.0%
Food Containers	0.3%	1.0%	0.4%	0.1%	0.5%
Other Glass and Ceramics	1.1%	1.2%	0.6%	0.5%	0.8%
Other Glass and Ceramics – Light bulbs (Non-hazardous)	0.1%	0.0%	0.0%	0.0%	0.0%
08. Building Material	**2.6%**	**0.9%**	**1.9%**	**18.0%**	**3.8%**
Gypsum/Drywall/Plaster	0.3%	0.4%	0.1%	0.2%	0.2%
Masonry – Masonry (Without Mortar)	0.3%	0.3%	0.0%	9.0%	1.3%
Rock, Sand, Dirt	0.0%	0.0%	0.0%	0.0%	0.0%
Rigid Asphalt	0.1%	0.0%	0.0%	2.3%	0.3%
Carpet Waste – Carpet	0.8%	0.0%	0.1%	2.7%	0.5%
Carpet Waste – Underlay	0.1%	0.0%	0.1%	0.7%	0.2%
Other Inorganics	1.0%	0.2%	1.6%	3.1%	1.3%
09. Electronic Waste	**2.5%**	**0.7%**	**1.9%**	**0.5%**	**1.4%**
Computers and Peripherals – Desktop Computers	0.2%	0.0%	0.0%	0.0%	0.0%
Computers and Peripherals – Notebook Computers	0.1%	0.0%	0.0%	0.0%	0.0%
Computers and Peripherals – Computer Peripherals	0.1%	0.0%	0.0%	0.0%	0.0%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Computers and Peripherals – Computer Monitors	0.0%	0.0%	0.0%	0.0%	0.0%
Computers and Peripherals – Printers, Scanners	0.0%	0.0%	0.0%	0.2%	0.0%
Televisions & AV Equipment – Televisions	0.0%	0.0%	0.0%	0.0%	0.0%
Televisions & AV Equipment – Other Audio/Video	0.2%	0.0%	0.0%	0.0%	0.0%
Telephones & Telecommunications Equipment – Mobile Phones & Accessories	0.0%	0.0%	0.0%	0.0%	0.0%
Telephones & Telecommunications Equipment – Other	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances & Floor Care Appliances	1.6%	0.3%	1.4%	0.3%	1.0%
Electronic Toys	0.1%	0.0%	0.0%	0.1%	0.0%
Smoke Detectors	0.0%	0.0%	0.0%	0.0%	0.0%
Other Electronics	0.2%	0.3%	0.3%	0.0%	0.3%
10. Household Hazardous	**1.0%**	**0.5%**	**1.9%**	**1.2%**	**1.3%**
Batteries – Lead Acid	0.0%	0.0%	0.0%	0.0%	0.0%
Batteries – Household Batteries (Non Lithium-Ion)	0.1%	0.0%	0.0%	0.0%	0.0%
Batteries – Lithium Ion Batteries	0.0%	0.0%	0.0%	0.0%	0.0%
Medical/Biological – Sharps	0.0%	0.0%	0.0%	0.0%	0.0%
Medical/Biological – Animal Carcass	0.0%	0.0%	0.0%	0.0%	0.0%
Medical/Biological – Other	0.1%	0.0%	0.7%	0.0%	0.3%
HHW – Stains/Preservatives	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Latex Paint	0.0%	0.0%	0.3%	0.5%	0.2%
HHW – Oil-Based Paint	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Paint Aerosols	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Solvents	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Cleaners, Soaps etc.	0.0%	0.0%	0.1%	0.0%	0.1%
HHW – Pesticides/Herbicides	0.0%	0.0%	0.0%	0.0%	0.0%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
HHW – Motor Oil	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Oil Filters	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Antifreeze	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Pharmaceuticals	0.1%	0.1%	0.1%	0.0%	0.1%
HHW – Other Petroleum Based Products	0.0%	0.0%	0.0%	0.0%	0.0%
HHW – Other	0.4%	0.2%	0.5%	0.6%	0.4%
HHW – Pressurized Containers	0.2%	0.1%	0.1%	0.0%	0.1%
Mercury Containing Items – Thermostats and Switches	0.0%	0.0%	0.0%	0.0%	0.0%
Mercury Containing Items – Compact Fluorescent Lamp	0.0%	0.0%	0.0%	0.1%	0.0%
11. Household Hygiene	**18.5%**	**15.5%**	**7.6%**	**0.4%**	**10.3%**
Biological – Diapers	11.1%	7.9%	3.3%	0.0%	5.2%
Biological – Pet Waste	5.0%	4.5%	1.5%	0.2%	2.6%
Biological – Other (Sanitary Products, Condoms)	1.5%	1.7%	0.6%	0.0%	1.0%
Public Health – Masks	0.0%	0.0%	0.8%	0.0%	0.4%
Public Health – Gloves	0.2%	0.7%	1.0%	0.0%	0.7%
Public Health – Wipes	0.3%	0.3%	0.2%	0.1%	0.2%
Liquid Product – Personal Care	0.4%	0.4%	0.3%	0.1%	0.3%
12. Bulky Objects	**0.1%**	**0.7%**	**1.6%**	**0.5%**	**1.0%**
White Goods – Large Appliances	0.0%	0.0%	0.3%	0.0%	0.2%
Furniture – Mattresses, Box Springs	0.0%	0.2%	0.3%	0.0%	0.2%
Furniture – Other Upholstered Furniture	0.0%	0.1%	0.7%	0.5%	0.4%
Furniture – Other Furniture	0.1%	0.4%	0.3%	0.0%	0.2%

Category	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
13. Fines	**0.8%**	**0.6%**	**0.6%**	**0.2%**	**0.6%**
Fines	0.8%	0.6%	0.6%	0.2%	0.6%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes:
Percentages are rounded to the nearest whole number and may not add to 100%.
Acronyms:
HDPE = High-Density Polyethylene.
HHW = Household Hazardous Waste.
LDPE = Low-Density Polyethylene.
OCC = Old Corrugated Cardboard.
PETE = Polyethylene Terephthalate.
PP = Polypropylene.
PS = Polystyrene.
PVC = Polyvinyl Chloride.

APPENDIX E

SINGLE-USE ITEMS RESULTS

Table E-1: Single-Use Item Results

Category	Estimated Regional Disposal Count (millions of units)				
	Single-Family	Multi-Family	Commercial/ Institutional	Small Loads	Regional
Retail Bags	**30.6**	**95.1**	**91.7**	**3.2**	**220.5**
Other Paper – Paper bags	20.4	66.8	65.0	3.0	155.2
Flexible Plastics – Re-Used Plastic Bags (HDPE & LDPE)	4.5	8.1	9.9	0.0	22.4
Flexible Plastics – Empty Plastic Bags (HDPE & LDPE)	1.5	4.8	4.3	0.0	10.7
Flexible Plastics – Single-Use Fabric Bags (Non-Washable)	4.2	15.2	12.1	0.2	31.6
Film – Plastic Bags Labeled Compostable	0.0	0.2	0.3	0.0	0.5
Cups	**27.8**	**99.9**	**338.3**	**9.9**	**475.9**
Other Paper – Plastic-Lined Paper Hot Cups	10.0	46.1	191.5	8.7	256.4
Other Paper – Plastic-Lined Paper Cold Cups	9.5	20.9	58.0	0.7	89.2
Other Paper – Plastic-Lined Paper Cups Labeled Compostable	0.1	0.6	3.4	0.0	4.1
Rigid Beverage Containers – Rigid Plastic Cups	8.1	32.1	84.0	0.4	124.6
Rigid (Non-Beverage) – Foam Cups	0.0	0.3	0.8	0.0	1.1
Foodware – Rigid Plastic Cups Labeled Compostable	0.0	0.0	0.5	0.0	0.5
Takeout Containers	**33.3**	**117.0**	**162.6**	**4.9**	**317.7**
Other Paper – Unlined Paper Takeout Containers	5.7	20.4	36.3	2.9	65.3
Other Paper – Plastic-Lined Paper Takeout Containers	10.2	24.0	45.1	0.6	79.9
Other Paper – Plastic-Lined Paper Takeout Containers, Bowls	3.1	18.7	22.9	0.2	44.8
Rigid (Non-Beverage) – Foam Takeout Containers	0.0	0.0	0.2	0.0	0.2
Rigid (Non-Beverage) – Rigid Plastic Takeout Containers	14.3	53.8	57.8	1.2	127.2
Foodware – Plastic Takeout Containers Labeled Compostable	0.0	0.0	0.3	0.0	0.3
Straws	**46.7**	**103.8**	**200.0**	**7.0**	**357.4**
Other Paper – Paper Straws	21.8	48.6	124.8	2.6	197.9
Other – Plastic Straws	24.8	55.2	75.1	4.3	159.5
Utensils	**47.2**	**120.6**	**287.7**	**6.7**	**462.3**
Other – Plastic Utensils	19.7	52.5	104.1	1.9	178.2
Foodware – Other Foodware Labeled Compostable	1.3	1.5	2.8	2.3	7.9
Clean Wood – Wood Utensils	26.2	66.6	180.8	2.5	276.2

Note:
Counts are rounded to the nearest 0.1 million units and may not add to the totals.
Acronyms:
HDPE = High-Density Polyethylene.
LDPE = Low-Density Polyethylene.