

**DILLON**  
CONSULTING

CITY OF VANCOUVER

# Street Litter Audits

2022 Results



November 2022 – 20-3506



November 15, 2022

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***Street Litter Audits – 2022 Results***

Dillon Consulting Limited is pleased to present the City of Vancouver with the 2022 street litter audit results. This report summarizes the information collected during the street litter audits that took place September 19 to 22, 2022, providing an overview of the current accumulation and composition of litter at 123 pre-selected City of Vancouver litter site locations. These results have been compared to a rolling average of the audits completed from 2015 (baseline) to 2019, as well as directly to the audits done in the last two years, 2020 and 2021.

Thank you for the opportunity to assist you once again with this important assignment. We look forward to discussing this report with you and supporting your ongoing litter and waste management initiatives.

Sincerely,

**DILLON CONSULTING LIMITED**

A handwritten signature in black ink, appearing to read "Klaryssa Lawrie".

Klaryssa Lawrie, EP  
Associate, Project Manager

Our file: 20-3506

KML:lw

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## Executive Summary

The City of Vancouver (City) retained Dillon Consulting Limited (Dillon) to conduct the City's seventh round of street litter audits since the 2015 initiation (baseline), at 123 pre-selected locations within Vancouver. Since the baseline there have been a number of revisions to sites and categories. These revisions have been provided in **Appendix A** and are not discussed in detail within the body of this report.

This year's audits took place from September 19-22, 2022. One hundred and twenty-three (123) of the 124 predetermined sites were audited with the purpose of providing a 'snapshot' assessment of the composition and amount of accumulated litter present on the streets of Vancouver. Site 110 was not audited due to safety concerns in the area. Two types of litter were assessed:

- Large Litter – Any litter that is equal to or larger than four square inches; and
- Small Litter – Any litter that is smaller than four square inches.

Within each site, a site survey and assessments on large litter and small litter were completed. An additional assessment, referred to as a 'supersite' evaluation, was completed at 20 of the pre-selected sites (approximately 1 out of 6). The purpose of the supersite audit is to provide a comprehensive review of small litter accumulation and help the City expand its knowledge on small litter type and occurrences. As this process is quite time consuming and labour intensive, it is not completed at all of the sites.

Ten sites in 2022 were situated immediately adjacent to active construction. In the analysis, these ten sites were removed and analyzed separately.

The key findings about the 123 site assessment were as follows:

- Overall, 59% of sites were given a clean ranking of 2; and
- An additional 28% were ranked as a 1, for a total of 87% of sites either having no noticeable litter or only noticeable litter in certain areas.

The key findings of the large litter assessment were as follows:

- In 2022, the most common primary categories were paper/fibre materials (26%), 'other miscellaneous' (16%) and cups (11%). Photos of 'other miscellaneous' materials are provided in **Appendix C**.
- Overall in 2022, there was a 1% decrease in the large litter observed from the average results collected in 2015 through 2019, and a 2% decrease from the 2020 audit. There was however, **a 5% increase from the 2021 audit**.

- Items within the large litter categories were composed of different material types (paper, plastic, glass, metal, composite and other). The largest material type observed was paper (39%), followed by plastic (32%) and 'other' (26%).
- The most common sub-category of large litter observed was non-brand towels/napkins. Non-brand towels and napkins represented 13% of all large litter surveyed in 2022.
- Of the 1,132 pieces of large litter audited, 10% were personal protective equipment (PPE) and other medical waste-related items (disposable masks, gloves, and disinfecting wipes).
- There were seven sites that had no large litter accumulation at all.
- Within the ten sites that were immediately adjacent to construction, the average number of large litter items per site was 23.1 pieces of litter. This was, on average, 130% more large litter than the sites that did not have construction directly adjacent (at 10.0 pieces).
- Single-use Items (SUIs) targeted by Vancouver's bylaws to reduce SUIs (shopping bags, disposable cups, foam cups and take-out containers, plastic straws, and utensils) made up 16% of all observed large litter items in 2022.
- The largest observed SUI category was disposable cups (non-foam) which accounted for 11.4% of all observed large litter items, overall.

The key findings of the small litter assessment include the following:

- The most common categories of small litter observed were glass (29%), paper (21%) and cigarette butts/debris (18%).
- Overall in 2022, there was a 22% increase in the small litter observed from the average results observed in 2015-2019, a 5% increase from the 2020 audit and **a 52% increase from the 2021 audit.**
- Within the ten sites that were immediately adjacent to construction, the average number of small litter items per site was 6.8 pieces of litter. This was, on average, 20% less small litter than the sites that did not have construction directly adjacent (at 8.5 pieces).
- There were eight sites that had no small litter accumulation whatsoever.

The key findings of the supersite (20 Sites) assessments were:

- The most common categories of small litter observed were cigarette butts/debris (38%) and chewing gum (25%), which accounted for a combined 63% of all small litter observed on the supersites.
- The average number of small litter items per site was 225.9 pieces of small litter. This was less than the average pieces for the 2015 - 2019 audits (270.7) and the 2020 follow-up audits (234.9).
- The total small litter audited in the 2022 supersites was 4,518 pieces.

# Introduction

The City of Vancouver (City) is home to over 660,000 residents across an area of 114 km<sup>2</sup>. The City had a goal to be recognized as the *Greenest City* in the world by the year 2020 and had developed the City's *Greenest City Action Plan 2015-2020* (GCAP). This plan was approved by City Council in 2011. Within the GCAP, there were ten goals and targets outlined. These were accompanied with priority actions that would help the City achieve the goals and actions. Of relevance to the street litter audits, *Goal 4: Zero Waste* of the GCAP aims to reduce solid waste going to landfill and incinerator by 50% from 2008 levels. More specifically, the litter audit is an important step towards achieving Action 4.3 of the GCAP which targets the reduction of street litter and abandoned garbage in public spaces. This includes illegal dumping, and increased diversion of these materials through implementation of a comprehensive litter management strategy. Specifically, the City would like to target commonly disposed and difficult to recycle materials which would be identified as a part of the street litter audits.

More recently, [Vancouver's Single-Use Item \(SUI\) Reduction Strategy](#) has been developed as a priority action within the City's Zero Waste 2040 Plan. The Strategy was created through consultation and input of over 8,000 people from October 2016 to April 2018, with actions to 2025. The objective of the Strategy is to reduce the use of plastic and paper shopping bags, expanded polystyrene foam take-out containers and cups, disposable hot and cold drink cups, take-out food containers, and single-use straws and utensils.

Many of these SUIs are identified in this and previous litter audits. The Strategy has resulted in SUI bylaw adoption legislating bans, requirements for businesses, and additional actions that (among other priorities) are intended to minimize litter and garbage resulting from single-use items. Starting January 1, 2020, a Single-Use Item Bylaw came into effect. As part of the bylaw, the following bans and actions came into effect. They are as follows:

- A ban on plastic and compostable plastic shopping bags, fees on paper and new reusable shopping bags;
- Single-use cups incur a \$0.25 fee;
- A plastic straw ban unless required due to accessibility issues;
- A by-request requirement for single-use utensils; and
- A ban on foam cups and foam take-out containers.

Ongoing street litter audits are a valuable means to monitor progress towards the goal of reducing street litter and abandoned garbage in public spaces. The City has been conducting litter audits since 2015, when a baseline assessment was completed. The baseline sites were audited with the purpose of providing a 'snapshot' assessment of the composition of the accumulated litter present on the streets of Vancouver. Types of litter were classified into two categories:



- Large Litter – Equal to or larger than 4 square inches; and
- Small Litter – Smaller than 4 square inches.

Follow-up audits have been completed for years 2017 through 2022 for comparison. Since the 2015 baseline assessment, additional sites and material categories have been included in the follow-up audits. Details on the year to year changes are provided in **Appendix A**.

The Cleanliness Index, developed by Dillon in partnership with the City, is a parallel project with similar objectives. To date, two Cleanliness Index surveys have been completed by the City. Methodology of the litter audit was amended slightly in 2020 to ensure consistent terminology regarding initial visual assessment/rankings of sites.

This year marks the seventh round of litter audits completed by Dillon for the City.

#### **The main objectives of the street litter audits include:**

- A detailed analysis of large litter items within the survey area;
- A detailed analysis of small litter items that fell within three small subsections of each survey area;
- A detailed analysis of small litter items in ‘supersites’ found within the entirety of 20 of the survey sites.

Analysis and reporting of results with a focus on a comparison to:

- The baseline and previous years’ results;
- 2021 results; and
- Results from other municipalities.

## 2.0 Methodology

This section of the report provides a brief overview of the street litter audit methodology. The detailed methodology is provided in **Appendix C**.

### 2.1 Conducting the Litter Audit

Dillon staff followed the same standard litter audit methodology used in the 2015, and 2017 through 2022 audits. Areas were measured to be 200 feet x 18 feet, whenever possible. When an audit area was full sized (i.e., 200 feet x 18 feet), it was termed a “fixed site”. The site width may have been less than 18 feet in certain cases. This included scenarios such as when residential property lines exist or when a commercial storefront was less than the prescribed distance. In these cases, each site was 200 feet in length by the available width. These sites are termed “variable sites”.

From the beginning of the pre-selected site, the team used a measuring device to measure 50 feet ahead of the start of the site. Using a temporary marking method (e.g., pylons), a mark was made on the pavement to denote the starting point of the pre-selected audit site. From this point the team used a measuring device to measure 100 feet, marking the roadway with another temporary identifier to show the mid-point of the site. A final measurement of an additional 100 feet denoted the end of the audit site.

The width measurements were taken at the start, midpoint and end of the site. The width of the site was measured 1.5 feet from inside the curb or the start of the pavement, towards the outer edge of the site. The maximum width was 18 feet and marked to indicate the boundary.

#### 2.1.1 Site Survey

Before any litter audits were initiated, a site survey was completed. During the site survey Dillon staff recorded relevant information about the litter site and the surrounding vicinity. Information collected on these forms included:

- Date and time;
- Audit team;
- Site identification;
- Audit area size;
- Characteristics and type of adjacent road;
- General attributes of the area;
- If the site was immediately adjacent to construction; and
- Cleanliness Index Rating.

A detailed overview of the Cleanliness Index (CI) rankings is provided in **Appendix C**. Large litter material category examples are also provided pictographically in **Appendix C**.

### 2.1.2 Classification of Large Litter

To maintain consistency with the previous litter audits, large litter was defined as any litter that was greater than or equal to 4 square inches in size. In order to assist the team completing the audit, a template was created to illustrate what 4 square inches equated to in multiple shapes (**Appendix C**). Large litter audits took place throughout the entire site. A first and second pass was completed on the site and litter observed was recorded on a large litter data form (**Appendix E**). An average number of litter items for the first and second passes were used as the value for the amount of large litter observed on a site. There was a total of 125 large litter sub-categories. These categories are provided in **Appendix E** with the large litter data form.

### 2.1.3 Classification of Small Litter

Small litter was defined as observed litter that was less than 4 square inches in size. The small litter audit involved examining three sections within the audit site. Dillon staff constructed a small litter frame using PVC plastic tubing measuring one foot wide and six feet long to serve as the template. Up to three consecutive “flips” of the template frame were completed to cross the 18-foot boundary of the site. The litter auditor observed and counted all of the small litter contained within the template at three locations within each site: at the start, midpoint and end of the site. All data was recorded on the small litter form provided in **Appendix E**. This form also describes the 26 small litter categories used in the litter audits.

### 2.1.4 Supersite

The supersite audits involved having Dillon staff record *all* the small litter observed within the fixed or variable site for a more thorough assessment of small litter. This was accomplished by having one team member record data while the other is counting small litter within the site. Supersite audits were completed at 20 pre-determined sites as selected by the City. Supersite evaluation forms and categories are additionally provided in **Appendix E**.

### 2.1.5 Photographic Record of the Site

During the site survey, the litter audit team took photographs of the site from three points. The first photograph was taken from the beginning of the site looking towards the end of the site. The second photograph was taken from the mid-point of the site looking into the site (towards the boundary from the road) and the final photograph was taken from the end of the site looking towards the start. **Photo 1** to **Photo 4** provide an example of the photographs taken at each site.



Photo 1: Site Location Photo



Photo 2: Beginning of Litter Site



Photo 3: Middle of Litter Site



Photo 4: End of Litter Site



## 3.0 Summary of Litter Results

This section of the report provides both the detailed results of the 2022 litter audit as well as a comparison to the rolling average of the audits completed from 2015 (baseline) to 2019, and a direct comparison to the 2020 and 2021 audits. This section of the report also assesses Vancouver results against other municipalities. Visual Assessments of litter sites are provided in **Section 3.1**. **Sections 3.2, 3.3 and 3.4** provide Large Litter Results, Small Litter and Supersite Results, respectively, for the 113 sites without immediately adjacent construction. Sites that were determined to be immediately adjacent to construction have results summarized in **Section 3.5**.

### 3.1 Visual Assessments of Litter Sites

As a part of the site survey, Dillon staff collected information about the area and adjacent roads of the audit sites. Dillon staff visually assessed the site and ranked it on a scale from 1 to 4 based on the Cleanliness Index Developed for the City. Sites were ranked using the following criteria:

- Ranking of **1** – No Noticeable Litter or Very Little;
- Ranking of **2** – Noticeable Litter in Certain Areas;
- Ranking of **3** – Consistent Noticeable Litter or Large Items or a Concentrated Pile of garbage/Litter; and
- Ranking of **4** – Requires More than One Person for Cleaning and Requires City Attention.

Overall, 59% of sites were given a cleanliness index ranking of 2. An additional 28% were ranked as a 1, for a total of 87% of sites either having no noticeable litter or only noticeable litter in certain areas. Thirteen percent (13%) were ranked as a 3 and none were ranked as having a cleanliness index ranking of 4. **Table 1** provides a breakdown by site type and the average visual rating observed. The sites where construction was observed were given a ranking of 1 (site 90), 2 (sites 31, 47, 63, 86 and 109) and 3 (sites 81, 97, 107 and 108).

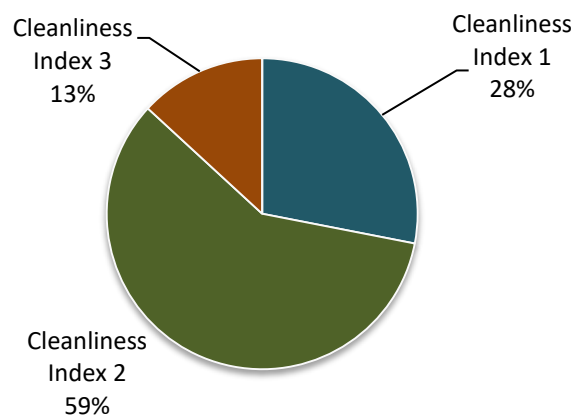


Figure 1: Visual Assessment Ranking of All Litter Sites



**Table 1: Average Visual Ranking by Site Type**

Site Type	Average Visual Rating
Commercial	2.1
Industrial	1.7
Institutional	1.7
Multi-Family	2.1
Single- Family	1.7
Mixed Use	2.3

## 3.2 Large Litter Results

Large litter is any piece of litter that is equal or greater than 4 square inches. This section of the report provides results for large litter by material type, category and subcategory. In 2022, the average number of large litter items per site was 10.0 pieces. The most common sub-category of large litter observed was Non-Brand Towels/Napkins. Non-Brand Towels/Napkins represented 13% of all large litter surveyed in 2022.

**Table 2** illustrates the 20 most common large litter items observed (by sub-category) in the 2022 street litter audits. These 20 item types accounted for 74% of the total large litter items observed. The complete list of items is provided in **Appendix F**. As noted in **Section 2.0** the large litter methodology requires two passes of an entire site. These passes are averaged for the total number of litter items observed. Due to this, there may be items that are observed on only one pass and therefore are averaged to 0.5 pieces of litter.

**Table 2: Top 20 Large Litter Items**

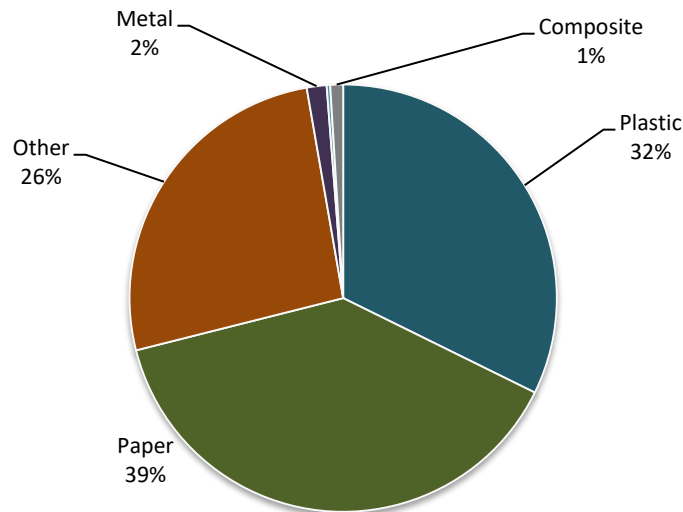
Number	Large Litter Item	Number Observed	% of Total Large Litter Items Observed	Cumulative Total (%)
1	Non-Brand Towels/Napkins	145.5	13%	13%
2	Misc. Plastic	72	6%	19%
3	Receipts (Business Forms, Bus Tickets)	69.5	6%	25%
4	Masks	56	5%	30%
5	Cup Lids, Pieces	54	5%	35%
6	Printed Material	47.5	4%	39%
7	Home Articles	44	4%	43%
8	Disinfecting Wipes	42	4%	47%
9	Plastic Bags -Consumable Packaging	40	4%	50%
10	Straws	34.5	3%	53%
11	Stationary (School, Business Etc.)	31	3%	56%
12	Other Cloth	29	3%	59%
13	Paper Cups (Hot)	27	2%	61%
14	Paperboard (Boxboard)	27	2%	64%
15	Plastic Drink Cups	25	2%	66%

Number	Large Litter Item	Number Observed	% of Total Large Litter Items Observed	Cumulative Total (%)
16	Snack Food Packaging	21	2%	68%
17	Paper Food Wrap	20	2%	69%
18	Tobacco Other	19	2%	71%
19	Pet Waste (Loose)	19	2%	73%
20	Plastic Wrap	18	2%	74%
<b>Total Top 20</b>		<b>841</b>	<b>74%</b>	-
<b>Total All Large Litter</b>		<b>1,132</b>	<b>100%</b>	-

### 3.2.1 Large Litter by Material Type

Items within the large litter categories were composed of different material types (paper, plastic, glass, metal, composite and other). These items were classified based on their known composition. **Figure 2** illustrates the breakdown by material type of all 1,132 pieces of large litter observed in 2022. The largest material type observed was paper (39%), followed by plastic (32%) and 'other' (26%). "Other" material types included rubber, electronics, pet waste, etc. Metal materials represented 2% and composite materials represented 1% of the materials observed. Glass pieces represented less than 1% of the material observed in the 2022 audit.

**Figure 2: Large Litter by Material Type**



### 3.2.2 Large Litter by Category (16)

Each of the large litter items were classified into 16 categories and 125 sub-categories for the 2022 litter audits. **Table 3** provides a summary of the total amount of large litter observed for each of the 16 categories and **Figure 3** presents the information graphically. The category paper/fibre material (26%) was the most common category of litter observed. 'Other Miscellaneous' (16%) was second highest category. Miscellaneous litter included items such as miscellaneous paper, plastic, as well as household items. Cups (11%) were the next most common categories of litter recorded in 2022. **Figure 4** compares the largest three sub-categories from 2022 to 2021, 2020 and the average of the 2015-2019 audits.

**Table 3: Large Litter Result Totals by Category (16)**

Category	Observed Number of Items	Percent of Large Litter Observed
Beverage Containers	26	2%
Other Packaging	9	1%
Cups	120	11%
Bags	86	8%
Other Packaging (Boxes)	59	5%
Other Containers	14	1%
Food Wraps/ Containers	49	4%
Take Out Extras	57.5	5%
Trays	2	0%
Confectionary/Snack	52	5%
Cloth	35	3%
Other Miscellaneous Packaging	21	2%
Paper/Fibre Material	295.5	26%
Tobacco Products	21	2%
Other Miscellaneous	176	16%
Medical Waste	109	10%
<b>Total</b>	<b>1132</b>	<b>100%</b>

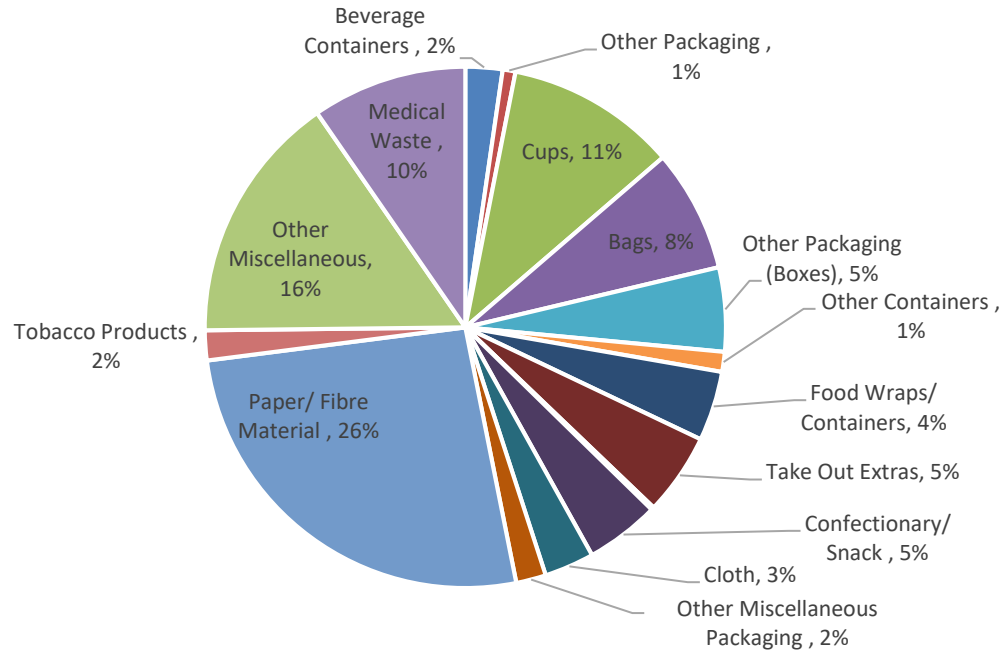


Figure 3: Large Litter Items by Category

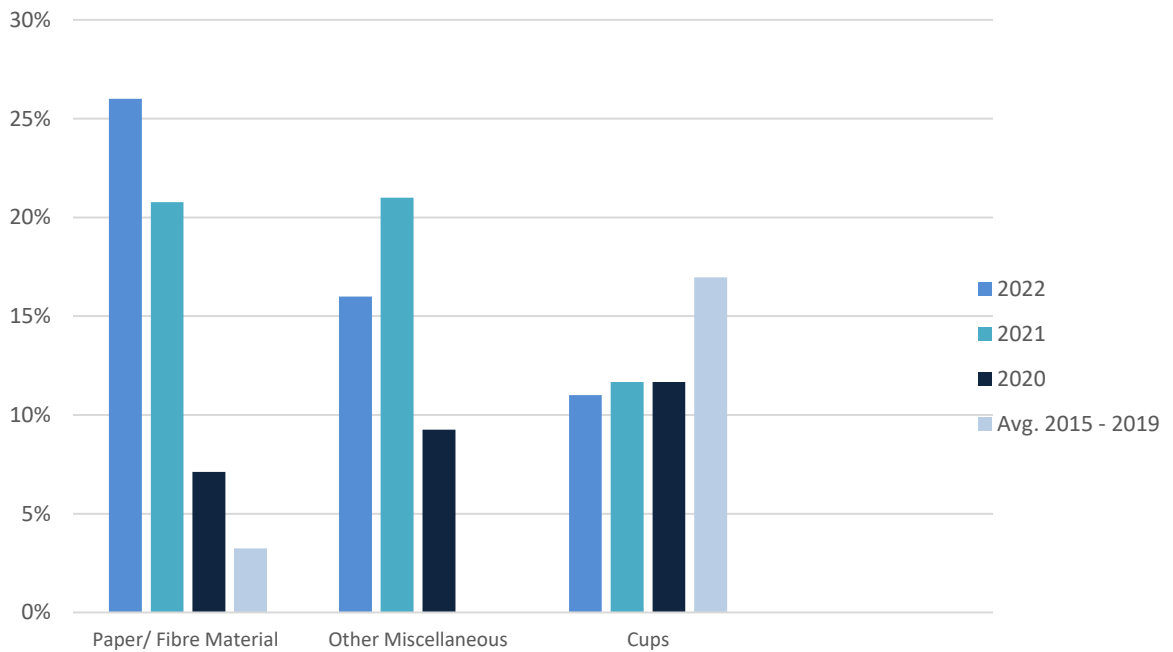


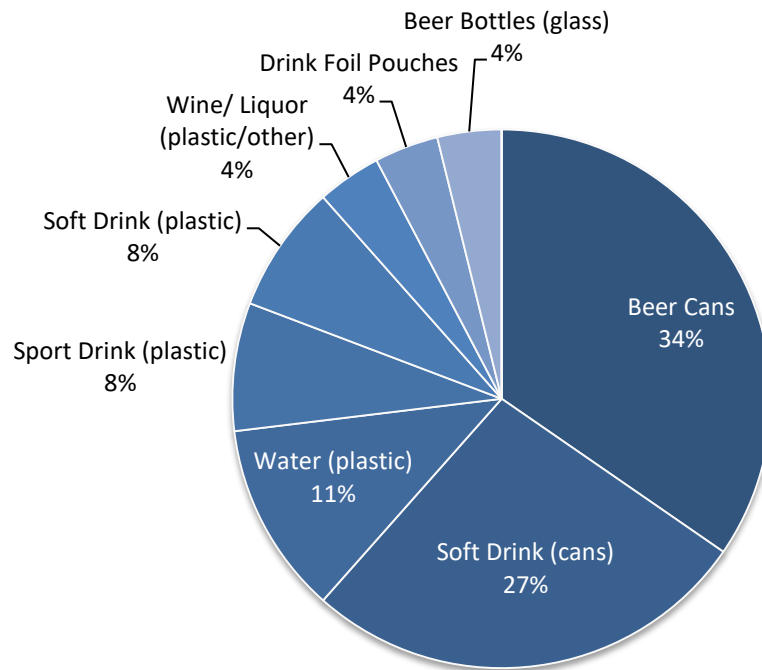
Figure 4: Large Litter Comparison

### 3.2.3 Large Litter Results by Sub-Category (125)

There are several sub-categories within each of the 16 major categories. The breakdown of litter by each of the 125 sub-categories is provided in the sub-sections below.

#### 3.2.3.1 Beverage Containers

Beverage containers accounted for 2% (n=26) of all large litter observed in the 2022 audits. The largest sub-categories evaluated for beverage containers in 2022 were beer cans (34%) and soft drink (cans) (27%). **Figure 5** illustrates the breakdown of the beverage container category. **Figure 6** compares the highest five sub-categories from 2022 to 2020, as well as the average of the 2015-2019 audits.



**Figure 5: Beverage Containers Composition 2022**



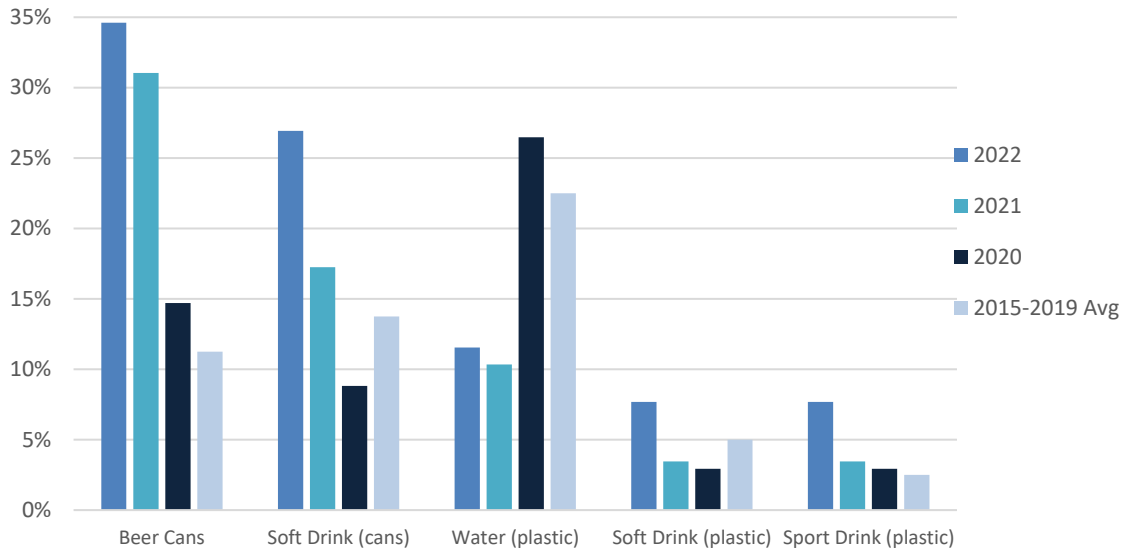


Figure 6: Beverage Containers Previous Audit Comparison

3.2.3.2 Other Packaging

‘Other packaging’ accounted for 1% (n=9) of the overall large litter observed for the City’s 2022 audits. The largest sub-categories evaluated for other packaging in 2022 were foil pouches (67%). **Figure 7** illustrates the results of the other packaging category. **Figure 8** compares the highest four sub-categories from 2022 to 2020, as well as the average of the 2015-2019 audits.

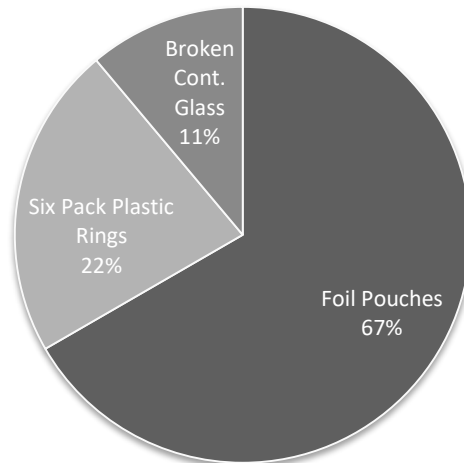


Figure 7: Other Packaging Composition 2022

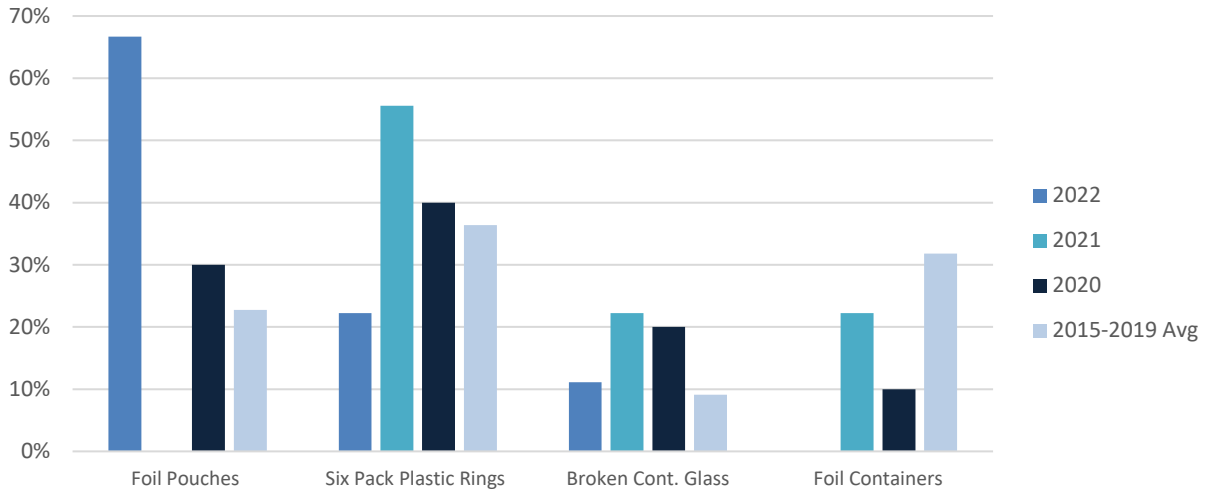


Figure 8: Other Packaging Previous Audit Comparison

3.2.3.3 Cups

Cups were the third largest category observed in the 2022 street litter audits and represented 11% (n=120) of all large litter observed. Cup lids and/or pieces were the largest subcategory (45%), followed by paper cups hot (22%), and plastic drink cups (21%). Figure 9 illustrates the breakdown of the cups category while Figure 10 compares the largest four sub-categories from 2022 to 2020, and the average of the 2015 to 2019 audits.

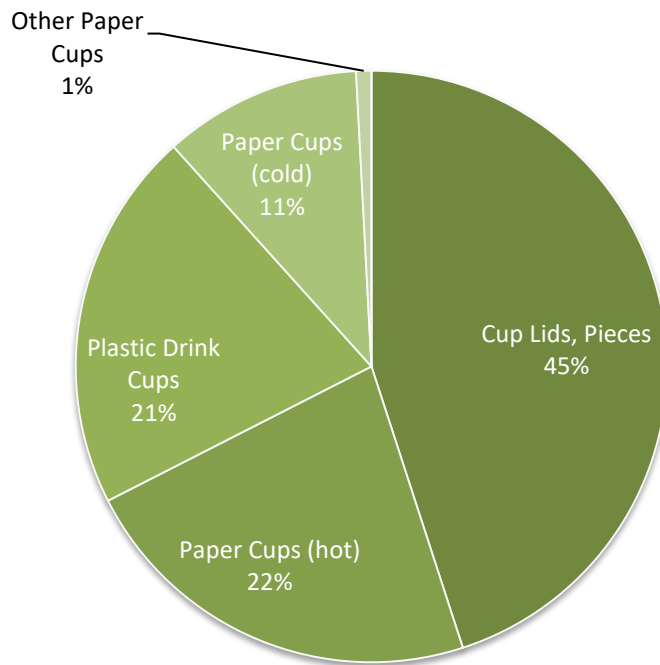


Figure 9: Cups Composition 2022

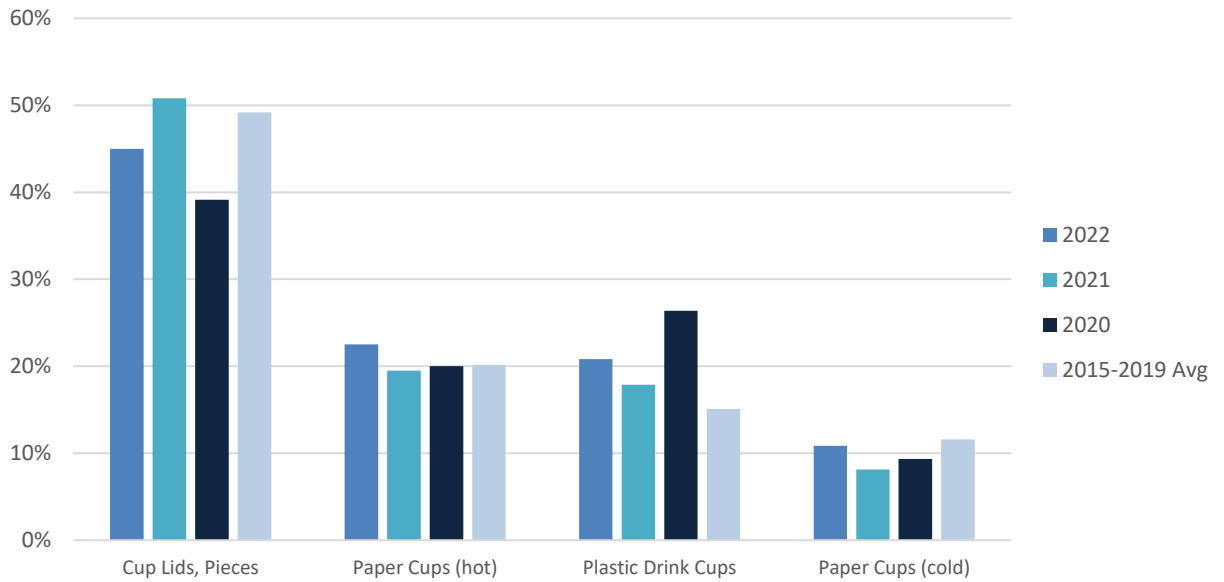


Figure 10: Cups Previous Audit Comparison

3.2.3.4 Bags

Bags represented 8% (n=86) of all large litter observed in 2022. This category predominantly consisted of plastic bags- consumable packaging (47%), zipper bags/sandwich bags (15%), paper bags- fast food and pet waste bags empty (8%). **Figure 11** illustrates the 2022 composition of the bags category while **Figure 12** compares the highest five sub-categories from 2022 to 2020, as well as the average of the 2015-2019 audits.

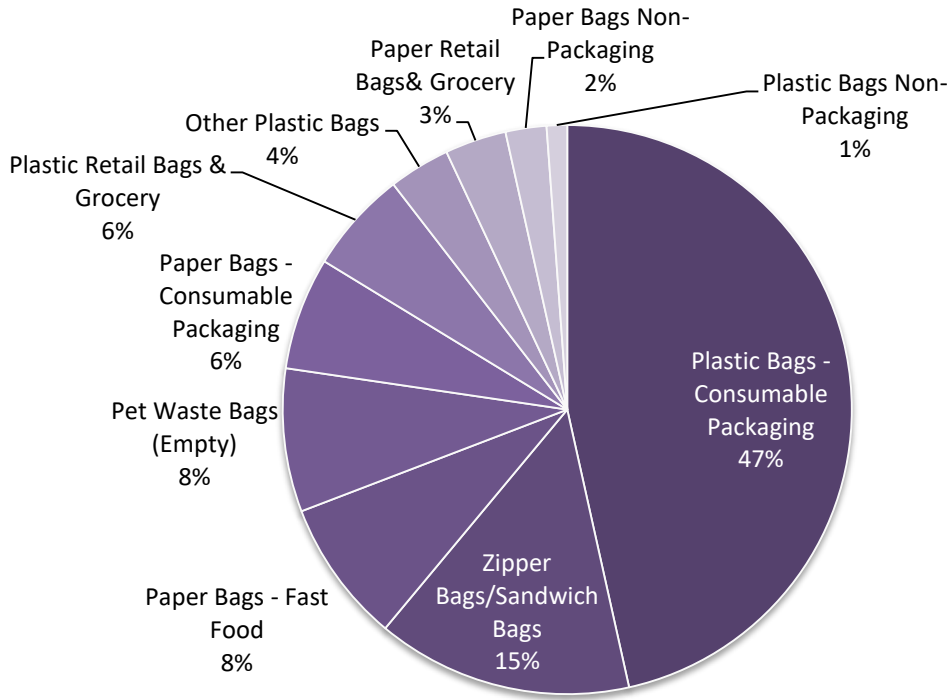


Figure 11: Bags Composition 2022

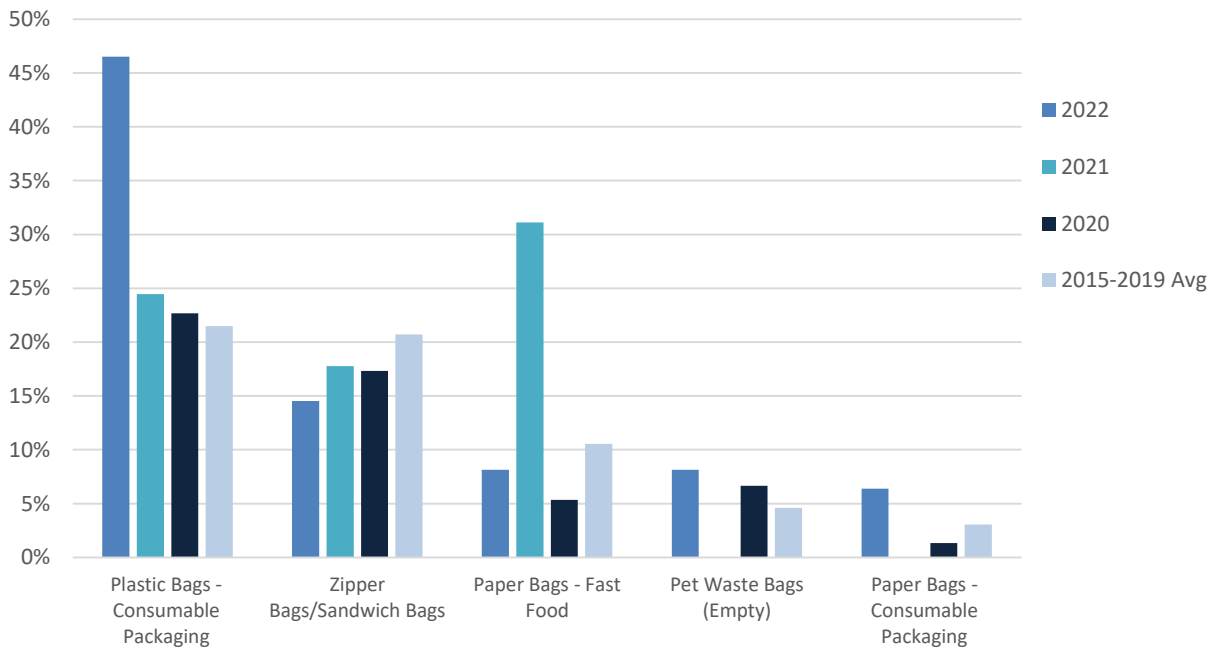
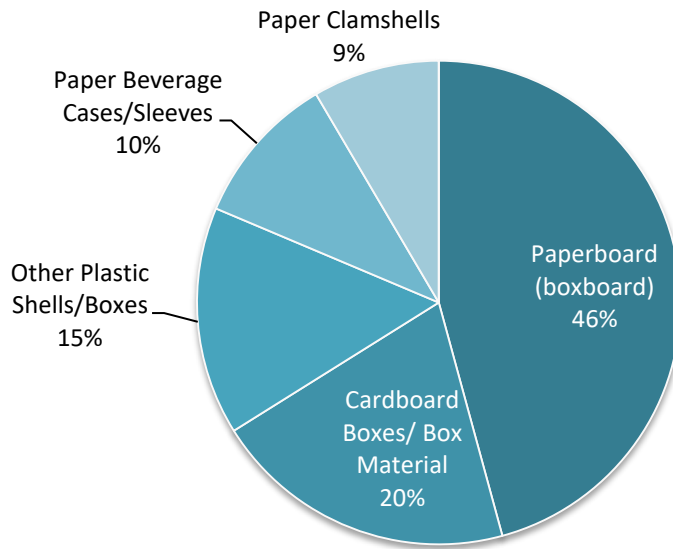


Figure 12: Bags Previous Audit Comparison

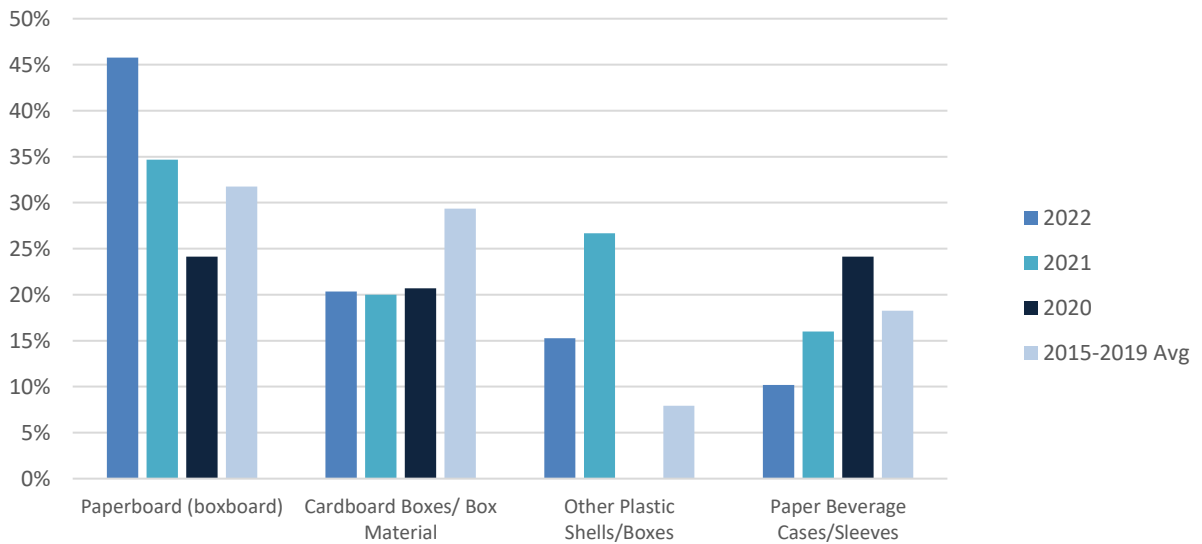
3.2.3.5

**Other Packaging (Boxes)**

Other packaging (boxes) represented 5% (n=59) of the accumulated large litter in the 2022 street litter audits. The largest sub-categories evaluated for other packaging (boxes) consisted of paperboard (boxboard) (46%), cardboard boxes/box material (20%), and other plastic shells/box materials (15%) as illustrated in **Figure 13**. The highest four sub-categories observed in 2022, 2021, 2020 and 2015 to 2019 rolling average are illustrated in **Figure 14**.



**Figure 13: Other Packaging (Boxes) Composition 2022**



**Figure 14: Other Packaging (Boxes) Previous Audit Comparison**



3.2.3.6

Other Containers

In the 2022 audits, other containers represented 1% (n=14) of all large litter observed. The breakdown of this category was mostly plastic jars/bottles/lids (64%). The composition of other containers is illustrated in **Figure 15** while a comparison of the largest four sub-categories from 2022, 2021, 2020 and the average 2015 to 2019 results is illustrated in **Figure 16**.

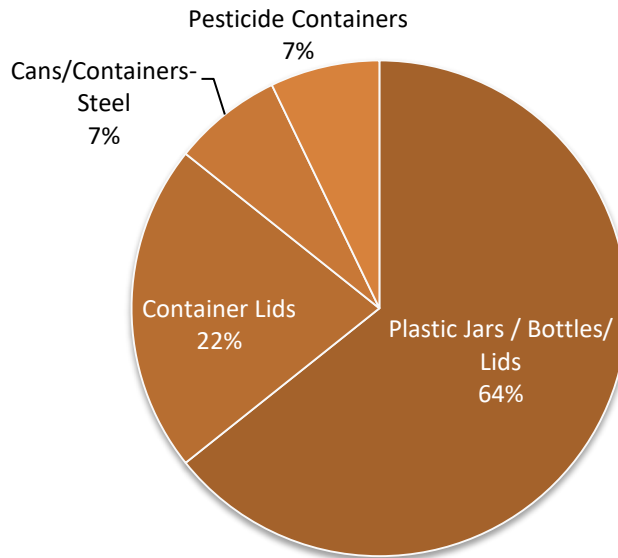


Figure 15: Other Containers Composition 2022

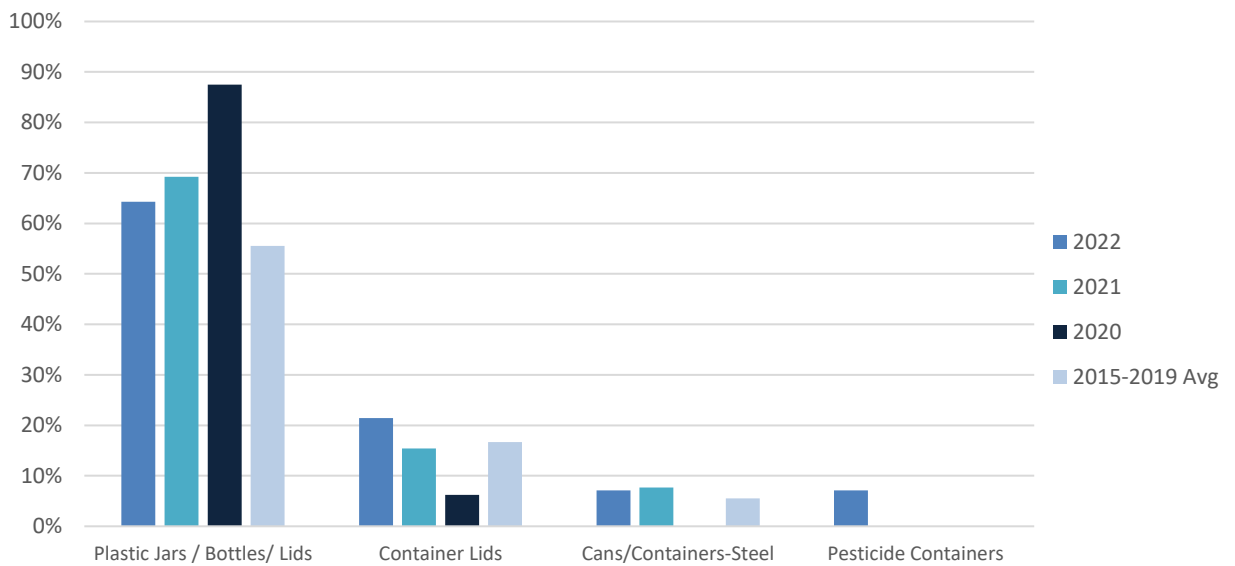


Figure 16: Other Containers Previous Audit Comparison

3.2.3.7 Food Wraps/Containers

Food wraps/containers represented 4% (n=49) of the litter observed in this audit. **Figure 17** illustrates the breakdown of this category. The sub-categories that comprised of food wraps/containers were paper food wrap (41%), plastic wrap (37%), and paper/foil Composite wrap (22%). **Figure 18** compares all sub-categories from 2022, 2021, 2020, as well as the average of the 2015 to 2019 audits.

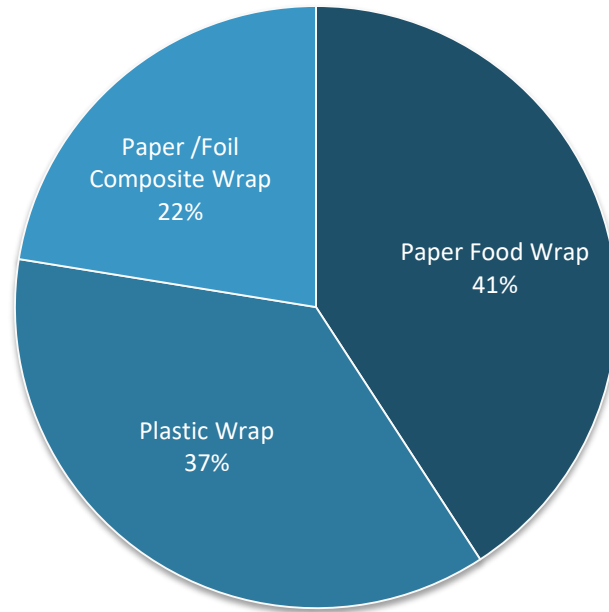


Figure 17: Food Wraps/Containers Composition 2022

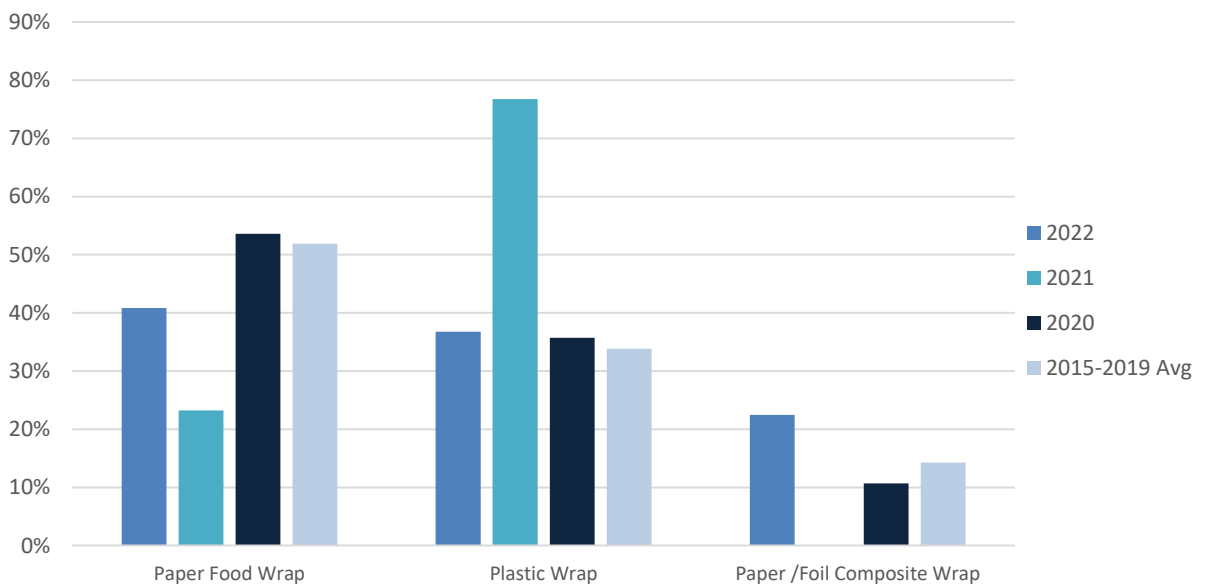


Figure 18: Food Wraps/Containers Previous Audit Comparison

3.2.3.8 Take out Extras

Take out extras accounted for 5% (n=57.5) of the large litter observed. Take out extras was largely comprised of straws (60%), utensils (19%), and branded napkins/serviettes (10%). **Figure 19** illustrates the breakdown of this category while **Figure 20** compares the highest four sub-categories from 2022 to 2020, as well as the average of the 2015 to 2019 audits.

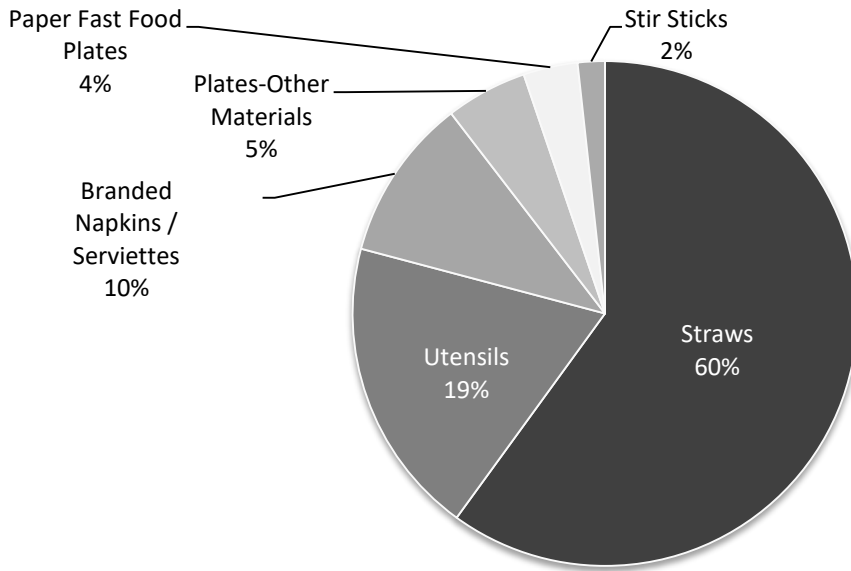


Figure 19: Take Out Extras Composition 2022

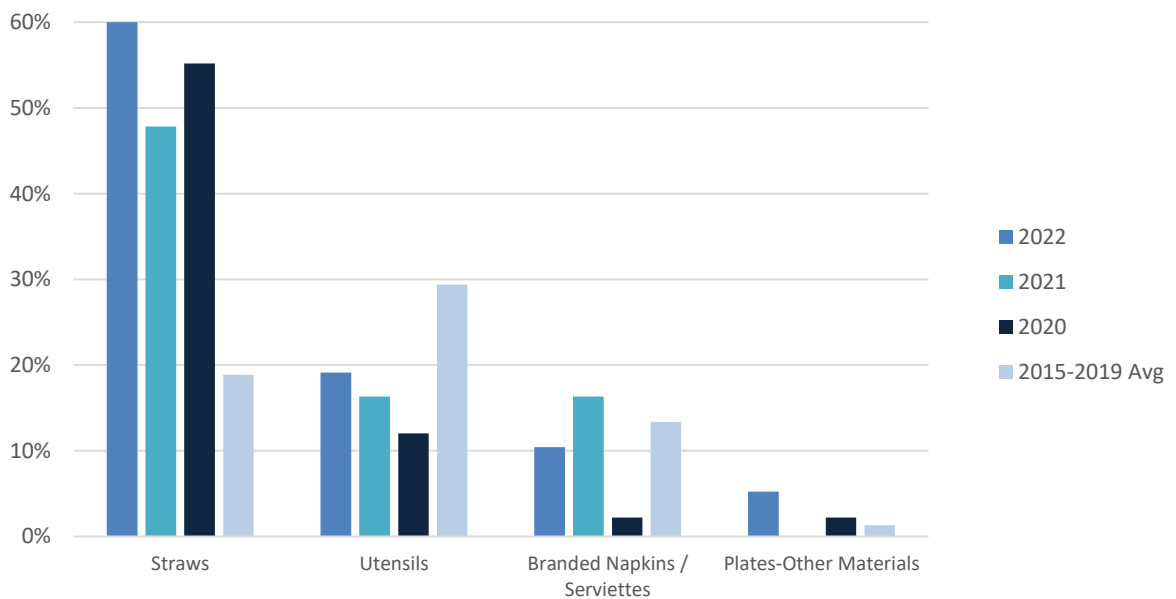
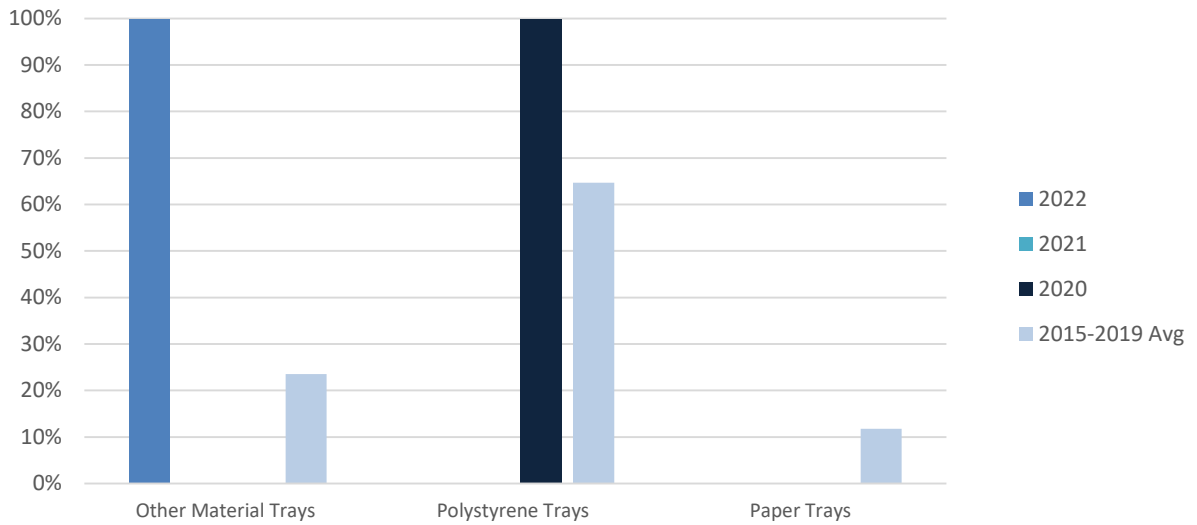


Figure 20: Take Out Extras Previous Audit Comparison

3.2.3.9 **Trays**

Trays accounted for less than 1% (n=2) of the large litter observed during 2022. Trays were entirely comprised of ‘other material trays’ such as plastic trays. **Figure 21** compares sub-categories from all previous City of Vancouver Litter Audits.



**Figure 21: Trays Previous Audit Comparison**

3.2.3.10 **Confectionary/Snacks**

Confectionary/ snacks category represented 5% (n=52) of all large litter observed in 2022. The most frequently observed sub-categories for large litter were snack food packaging (40%) and candy bar wrappers (35%). **Figure 22** illustrates the results of the confectionary/snacks category breakdown. **Figure 23** compares the highest four sub-categories from 2022 to 2020, as well as the average of the 2015 to 2019 audits.

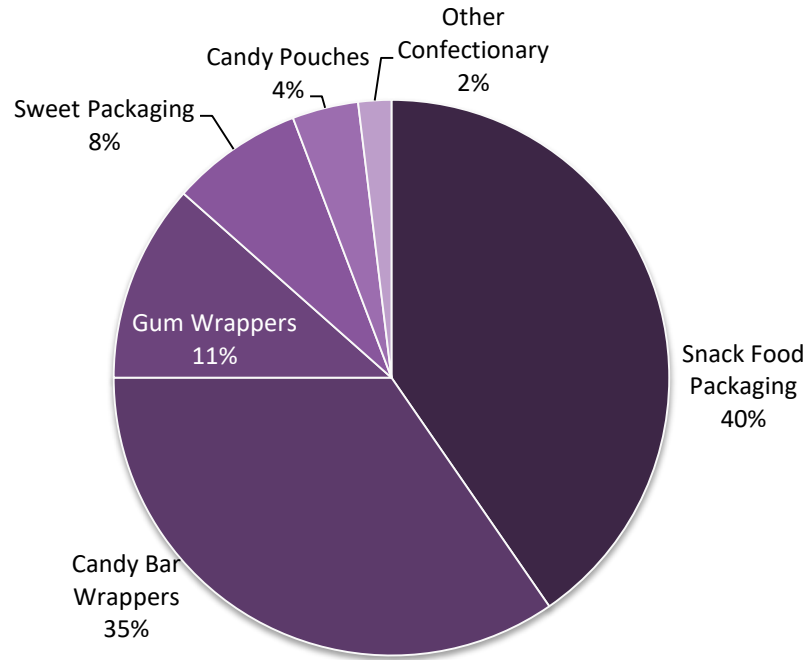


Figure 22: Confectionary/Snacks Composition 2022

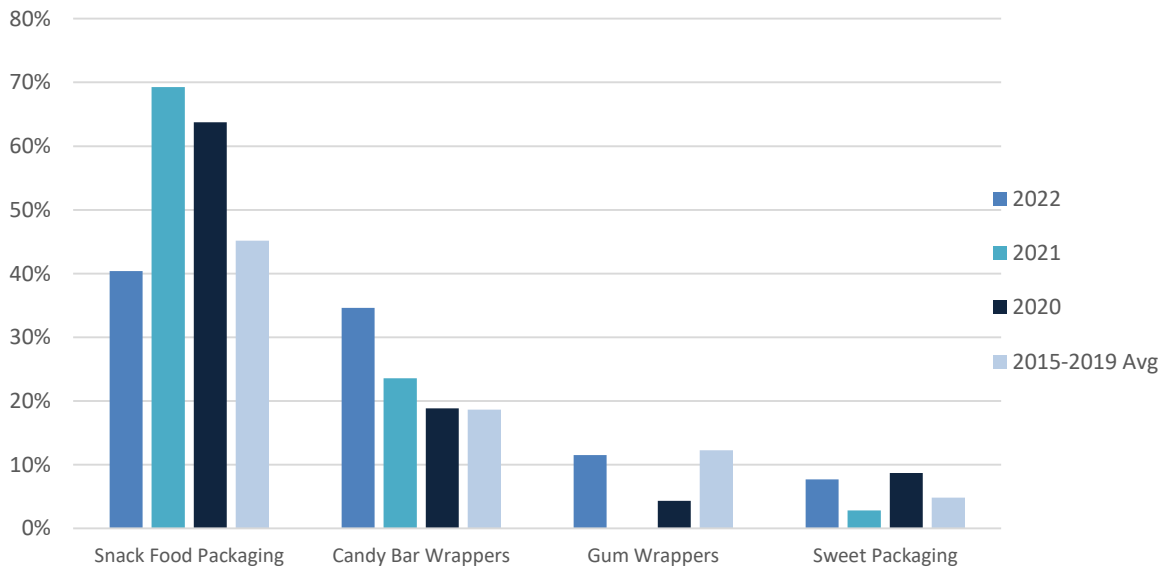
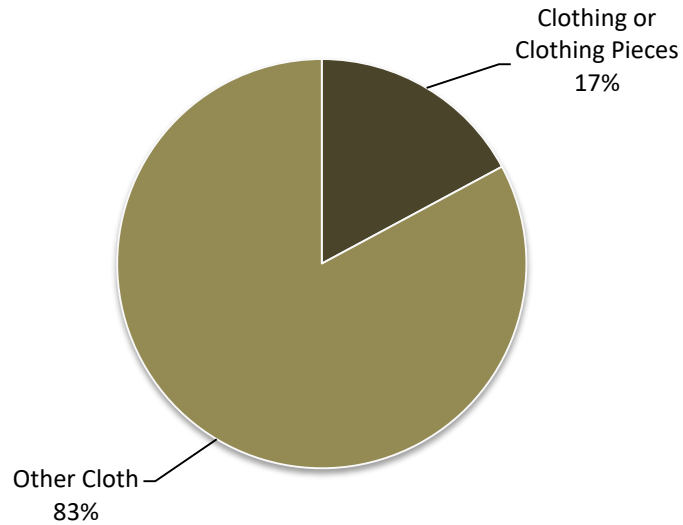


Figure 23: Confectionary/Snack Previous Audit Comparison

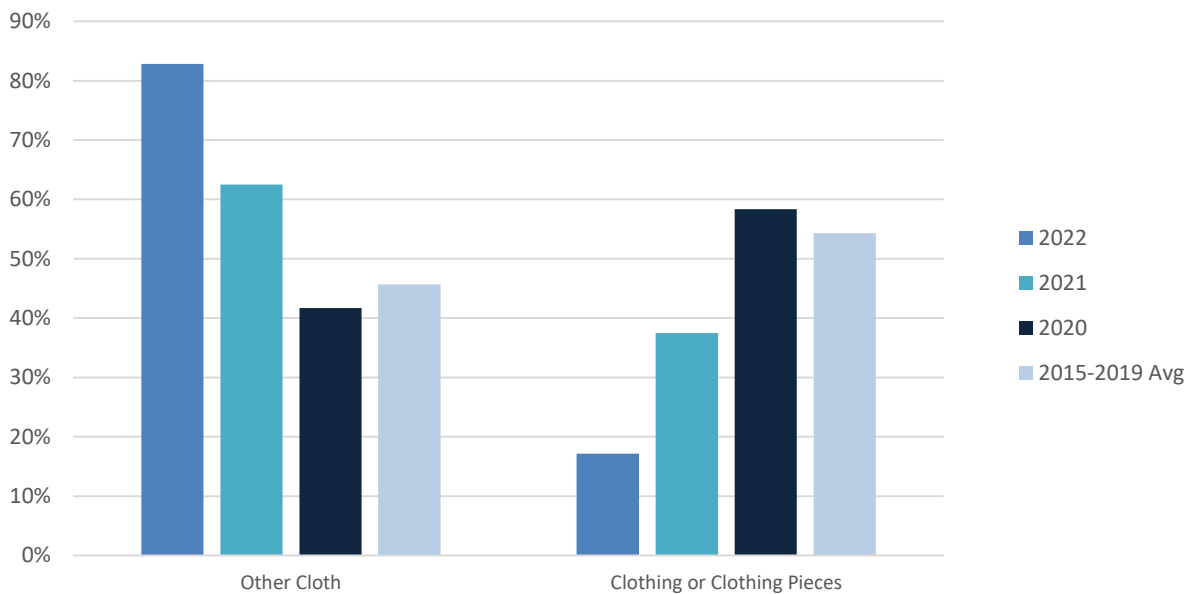
3.2.3.11

**Cloth**

The cloth category was split 17% for clothing or clothing pieces and 83% for other cloth. Cloth represented 3% (n=35) of all large litter observed in 2022 (**Figure 24**). **Figure 25** compares the sub-categories observed in the most recent audit to 2021, 2020, as well as the average of the 2015-2019 audits.



**Figure 24: Cloth Composition, 2022**

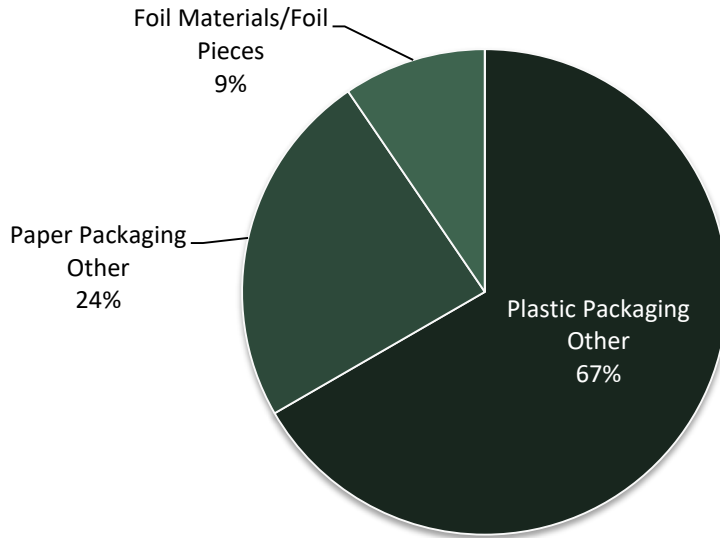


**Figure 25: Cloth Previous Audit Comparison**

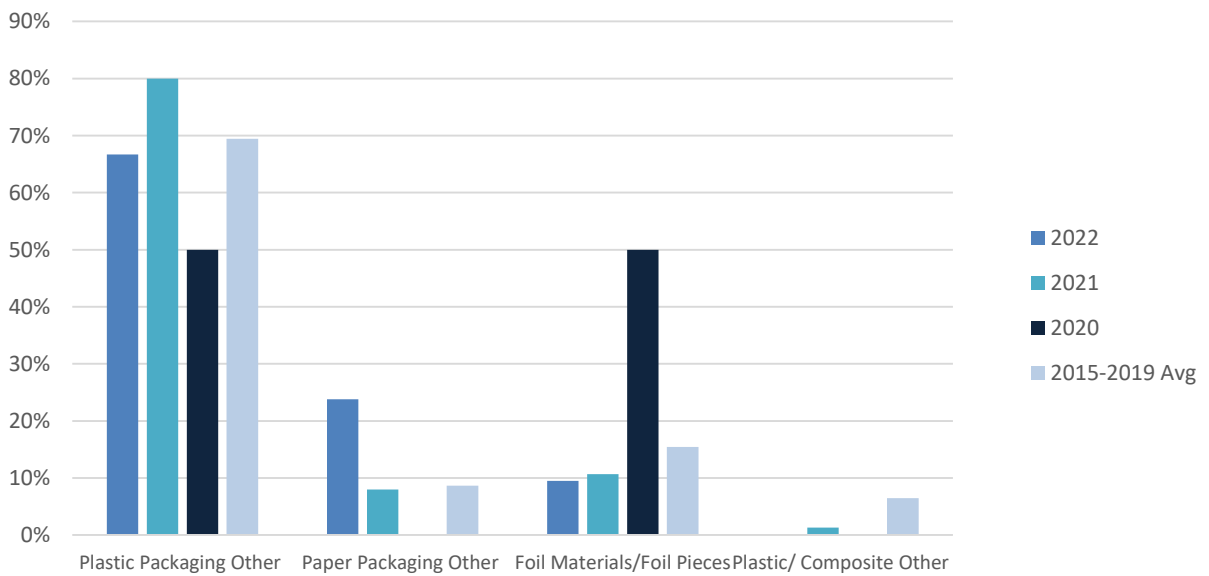
3.2.3.12

**Other Miscellaneous Packaging**

Other miscellaneous packaging represented 2% (n=21) of the large litter observed in 2022. Plastic packaging other (67%) and paper packaging other (24%) comprised of the majority the ‘other miscellaneous packaging’ category, entirely. **Figure 26** illustrates the breakdown of this category and **Figure 27** compares the sub-categories observed in 2022 to 2020, as well as the average of the 2015-2019 audits.



**Figure 26: Other Miscellaneous Packaging Composition 2022**



**Figure 27: Other Miscellaneous Packaging Previous Audit Comparison**



3.2.3.13

Paper/Fibre Materials

**Paper/Fibre Materials were the highest category, in terms of items most littered and represented 26% (n=295.5) of all large litter observed in the 2022 street litter audits.** The majority of the paper/fibre materials category was non-brand name towels/napkins (49%), receipts (24%) and printed material (16%). **Figure 28** provides the detailed breakdown of this category. **Figure 29** compares the highest three sub categories from all the audits.

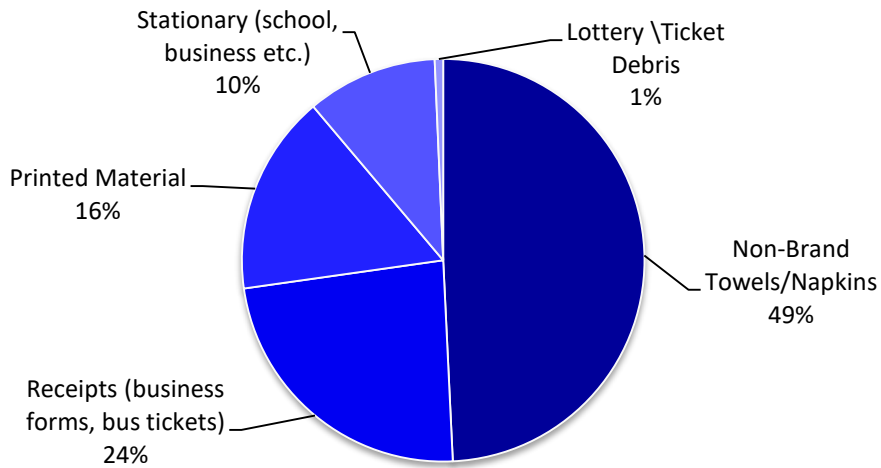


Figure 28: Paper/Fibre Composition 2022

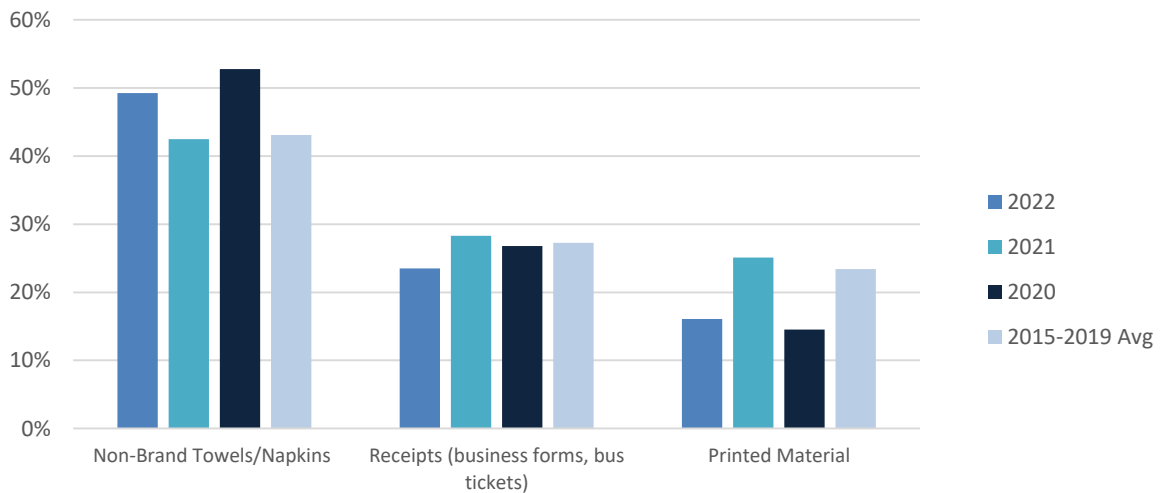


Figure 29: Paper/Fibre Material Previous Audit Comparison

### Tobacco Products

In 2022, tobacco products were 2% (n=21) of the large litter items surveyed. Within this category, 90% was ‘tobacco other’ and 10% cigarette/cigar debris. Tobacco other includes cigarette packaging and cellophane wrapping (**Figure 30**). **Figure 31** compares the two sub-categories from 2022 to 2020, as well as the average of the 2015-2019 audits.

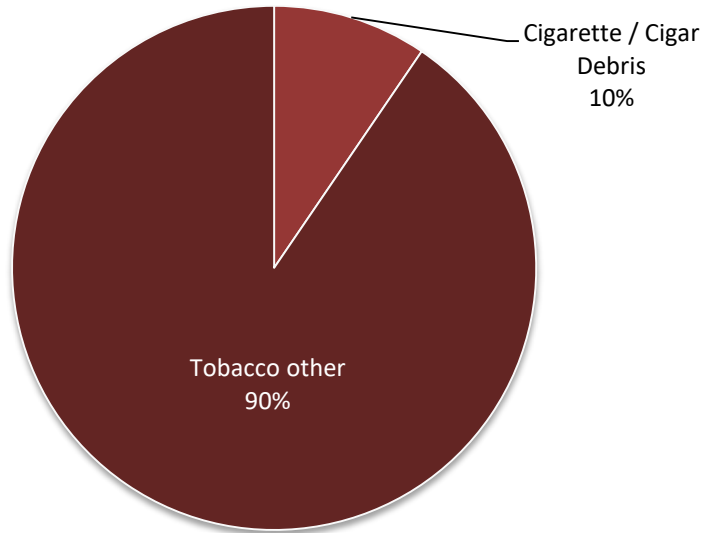


Figure 30: Tobacco Products Composition, 2022

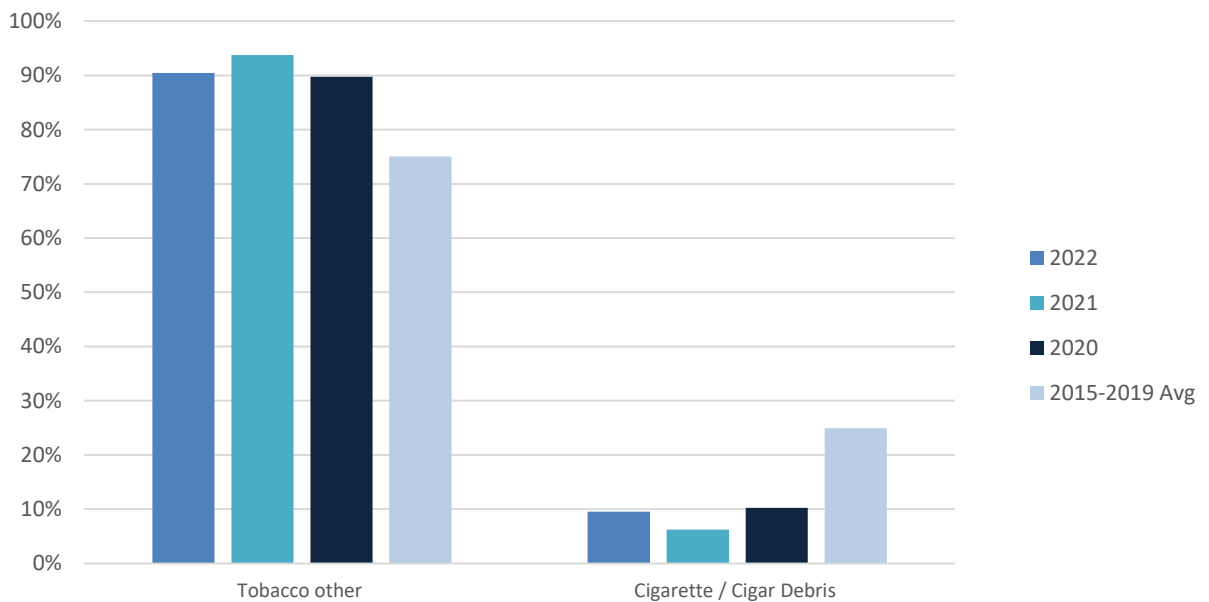


Figure 31: Tobacco Products Previous Audit Comparison

## 3.2.3.14

## Other Miscellaneous

'Other miscellaneous' was one of the largest categories observed in 2022, alongside paper/fibre material, it represents 16% (n=176) of all large litter. The primary sub-categories assessed in 2022 included: miscellaneous plastic (41%) and home articles (25%). It should be noted that miscellaneous plastic were made up of plastic litter that did not fit into any other category or could not be identified as such. Household items were items observed that did not fit into other categories such as composite hangers and pictures. **Figure 32** illustrates the breakdown of this category while **Figure 33** compares the highest four sub-categories observed in the 2022 audits to the previous studies.

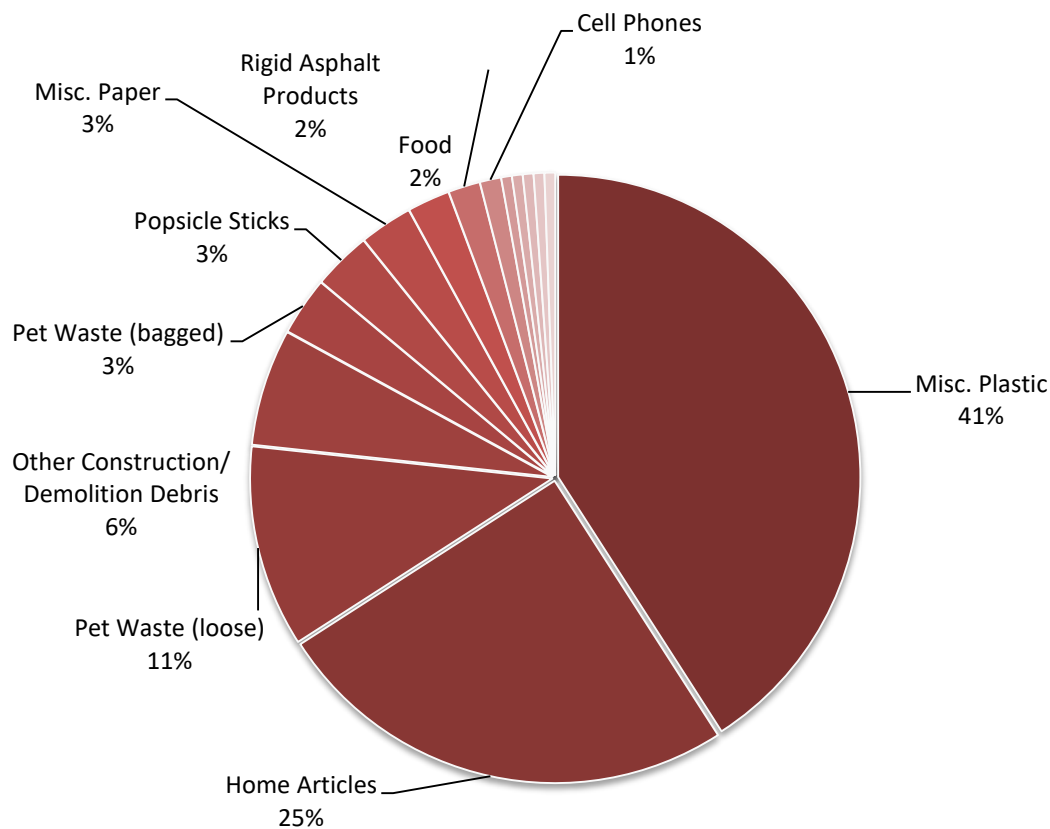


Figure 32: Other Miscellaneous Composition 2022

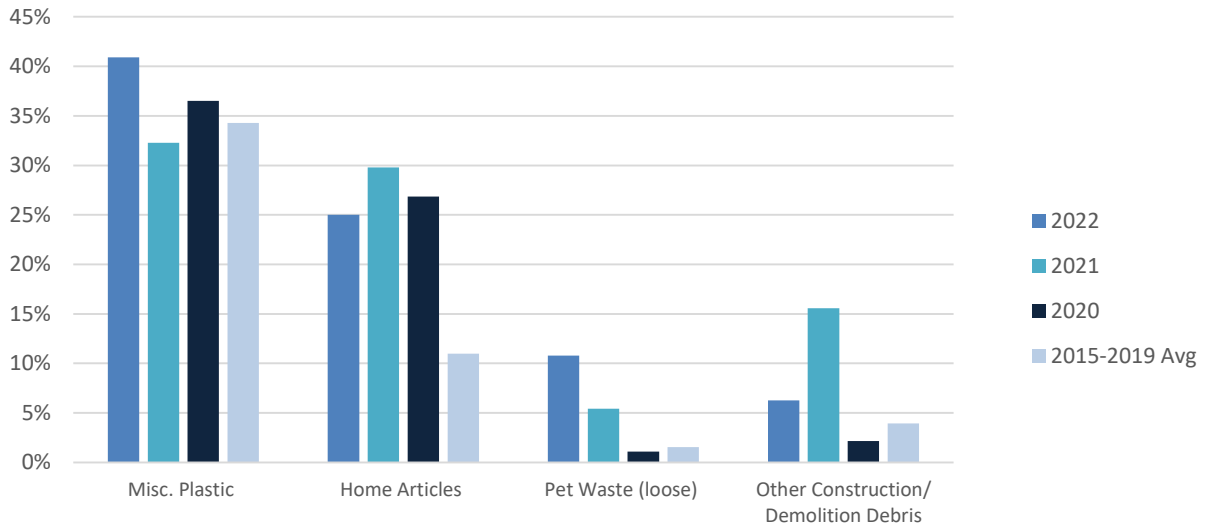


Figure 33: Other Miscellaneous Previous Audit Comparison

3.2.3.15 Medical Waste

Medical waste accounted for 10% (n=109) of the large litter observed. In 2020, medical waste was added as a new category to track litter related to the COVID-19 pandemic. This included disinfecting wipes, disposable gloves and masks. **Figure 34** illustrates the breakdown of this category. Comparison to the 2021 and 2020 audits is provided in **Figure 35**.

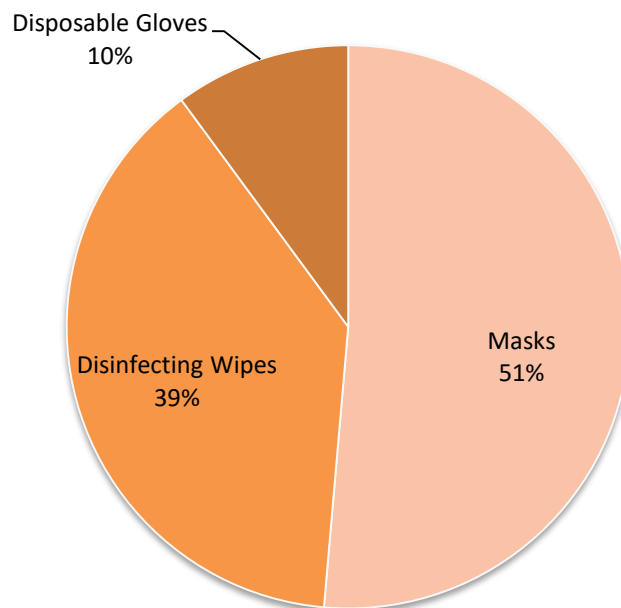


Figure 34: Medical Waste Composition 2022

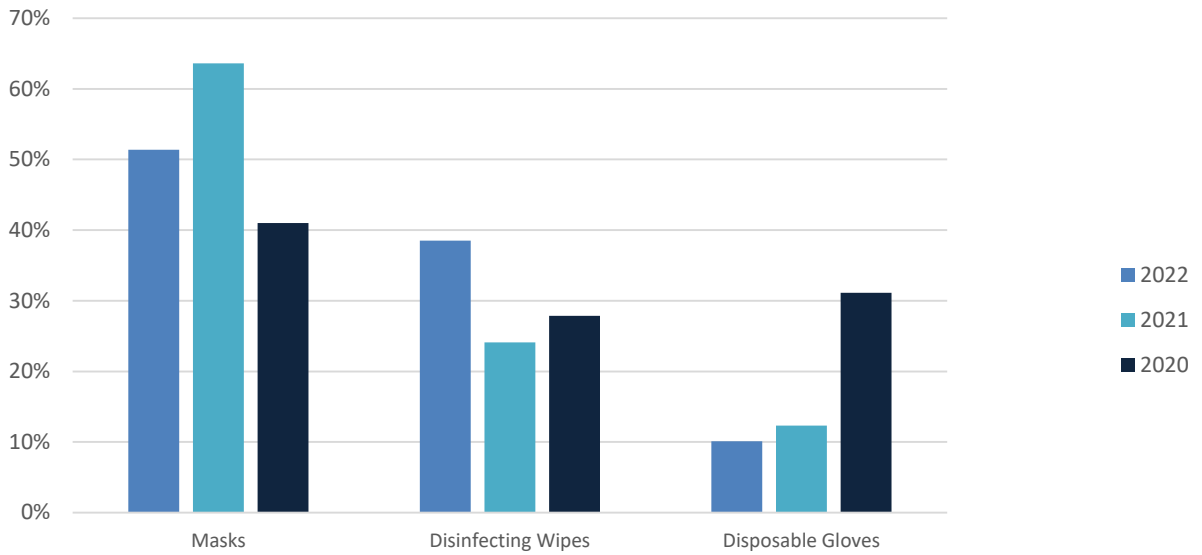


Figure 35: Medical Waste Previous Audit Comparison

3.2.3.16 Single-Use Items

Of the 1,132 pieces of large litter audited, 35% (393.5) of these items were considered single-use Items (SUIs). **Figure 36** illustrates these results. Comparison to the 2021 and 2020 audits is provided in **Figure 37**. Of the 393.5 SUIs, the majority were disposable cups (non-foam) (33%), medical waste (28%), other SUIs (plastic food wrap, paper and poly fast food plates, plastic stir sticks, etc.) (15%) and shopping bags (12%). **Figure 38** illustrates the breakdown of this category. **Figure 39: Single-Use Items by Category Previous Audit Comparison** provides a comparison to the 2021 and 2020 audits.

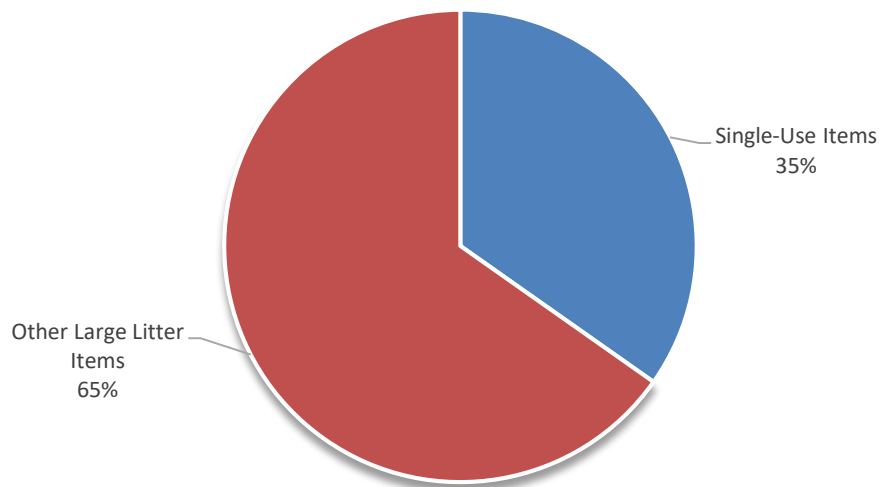


Figure 36: Single-Use Items Comparison

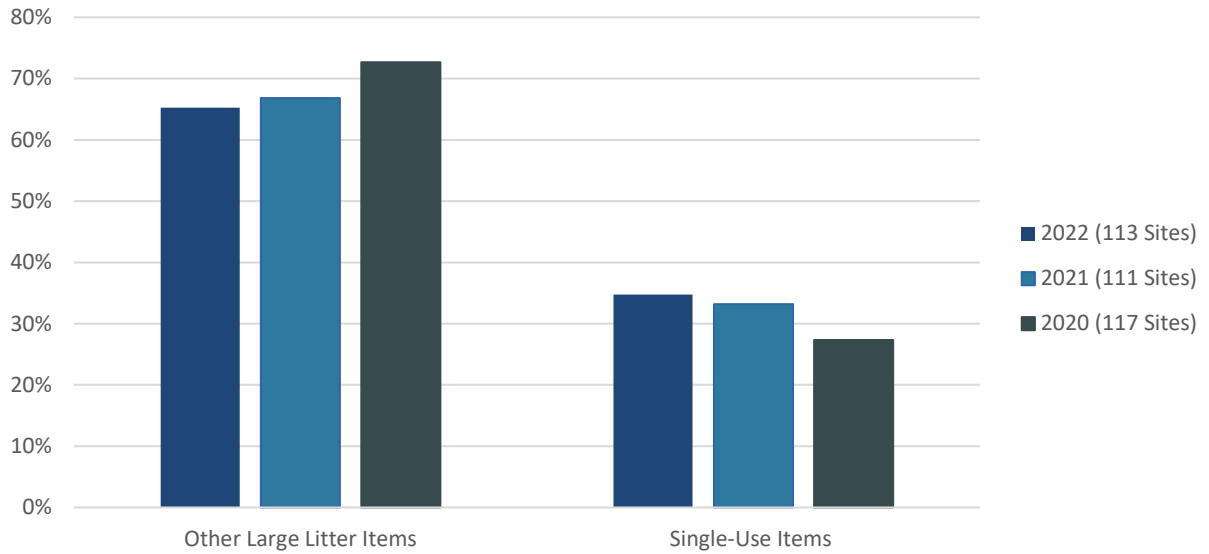


Figure 37: Single-Use Items Previous Audit Comparison

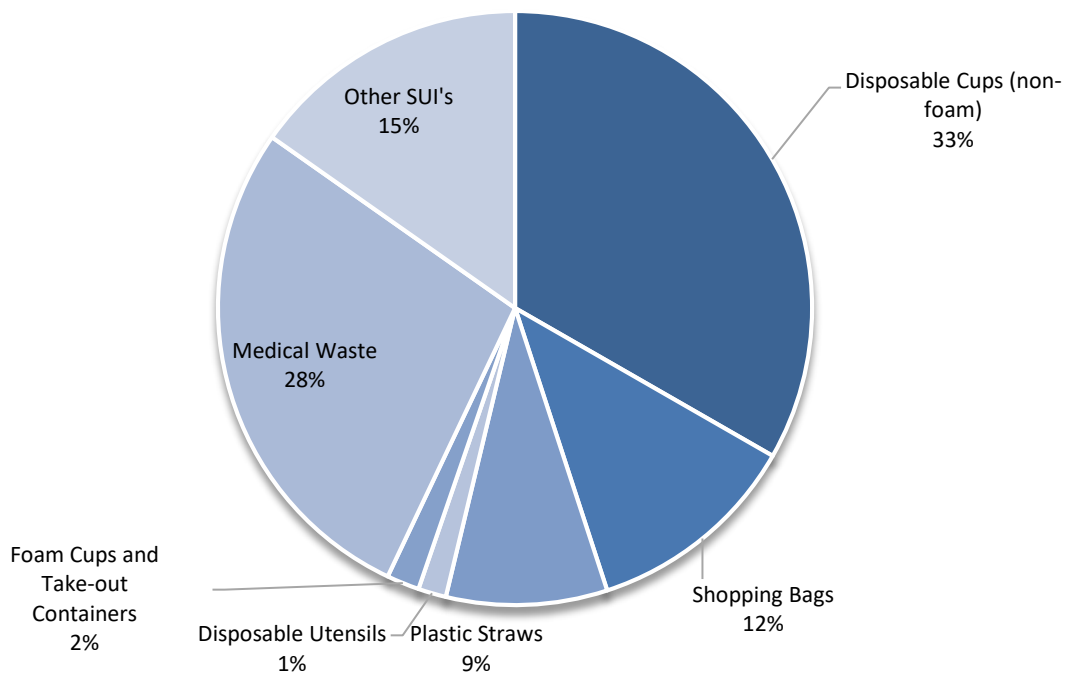


Figure 38: Single-Use Items by Category

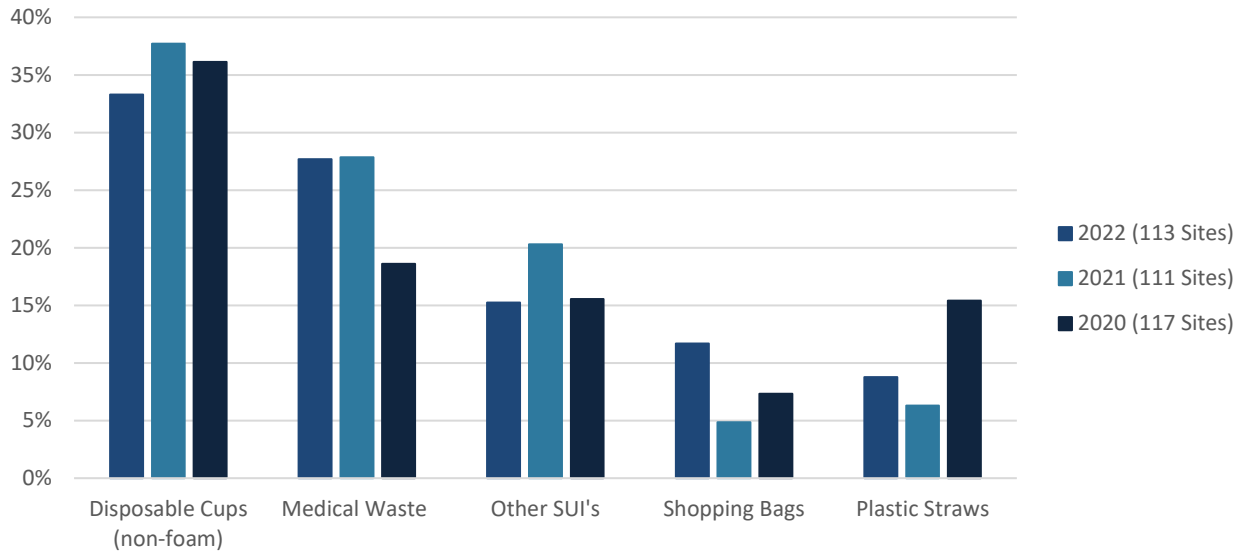


Figure 39: Single-Use Items by Category Previous Audit Comparison

### 3.2.4 Large Litter by Sites

The ten litter sites having the greatest number of large litter pieces are listed below in **Table 4**. The site with the most accumulated large litter in 2022 was Site 55 with 95.5 pieces of large litter observed, largely related to the fast food restaurant located in the area. This site is zoned multi-family. In total, 50% of sites in the “top 10” were single-family (sites 59, 50, 77, 61 and 125). An additional 30% were commercial (sites 89, 114, 124), and 20% were multi-family (sites 55 and 13). A full ranking of sites is provided in **Appendix G**. Of note, two of the top ten sites – Sites 55, 114 were also litter sites with the highest number of large litter pieces in the 2021 audits.

Table 4: Large Litter Site Rankings

Site Number	Number of Pieces of Large Litter	Hundred Block	Street Name
55	95.5	3400	Vanness Avenue
13	39	3500	Euclid Avenue
59	32	300	East 56 <sup>th</sup> Avenue
50	30	2900	West 10 <sup>th</sup> Avenue
89	26	6500	Main Street
77	25.5	5500	Main Street
61	25	5000	Commercial Street
125	24	4000	MacDonald Street
114	23.5	5700	Berkeley Street
124	22	6500	Oak Street



### 3.2.5 Large Litter by Zoning

Sites were zoned by their typical land-use. Zones used to categorize sites included: Commercial, mixed-use, single-family, multi-family, institutional and industrial. A breakdown of the number of sites per zone is provided in **Table 5**.

**Table 5: Number of Litter Sites per Zoning**

Zoning Type	Number of Litter Sites	Avg. # of Large Litter Items per Site
Multi-Family	17	7.9
Single-Family	64	10.5
Institutional	3	15.7
Commercial	22	9.7
Industrial	3	6.3
Mixed Use	4	12.0

A breakdown of large litter composition per zoning type is provided in **Table 6** and illustrated in **Figure 40**.

Table 6: Large Litter Composition by Zoning Type

Large Litter Category	Overall	Commercial	Mixed Use	Single-Family	Multi-Family	Institutional	Industrial
<b>Avg. # of Large Litter per Site</b>	<b>10.0</b>	<b>9.7</b>	<b>12.0</b>	<b>10.5</b>	<b>7.9</b>	<b>15.7</b>	<b>6.3</b>
Beverage Containers	2%	3%	0%	2%	3%	0%	0%
Other Packaging	1%	1%	2%	1%	0%	0%	0%
Cups	11%	10%	10%	11%	5%	17%	11%
Bags	8%	6%	13%	8%	8%	6%	11%
Other Packaging (Boxes)	5%	7%	2%	5%	3%	4%	11%
Other Containers	1%	0%	0%	2%	0%	0%	0%
Food Wraps/ Containers	4%	5%	6%	3%	6%	6%	5%
Take Out Extras	5%	8%	8%	5%	0%	9%	11%
Trays	0%	0%	0%	0%	1%	0%	0%
Confectionary/ Snack	5%	4%	10%	5%	2%	6%	0%
Cloth	3%	2%	0%	3%	4%	0%	5%
Other Miscellaneous Packaging	2%	1%	0%	2%	1%	9%	0%
Paper/ Fibre Material	26%	26%	27%	25%	32%	26%	26%
Tobacco Products	2%	1%	0%	3%	0%	0%	5%
Other Miscellaneous	16%	16%	15%	15%	21%	9%	11%
Medical Waste	10%	9%	6%	10%	13%	9%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

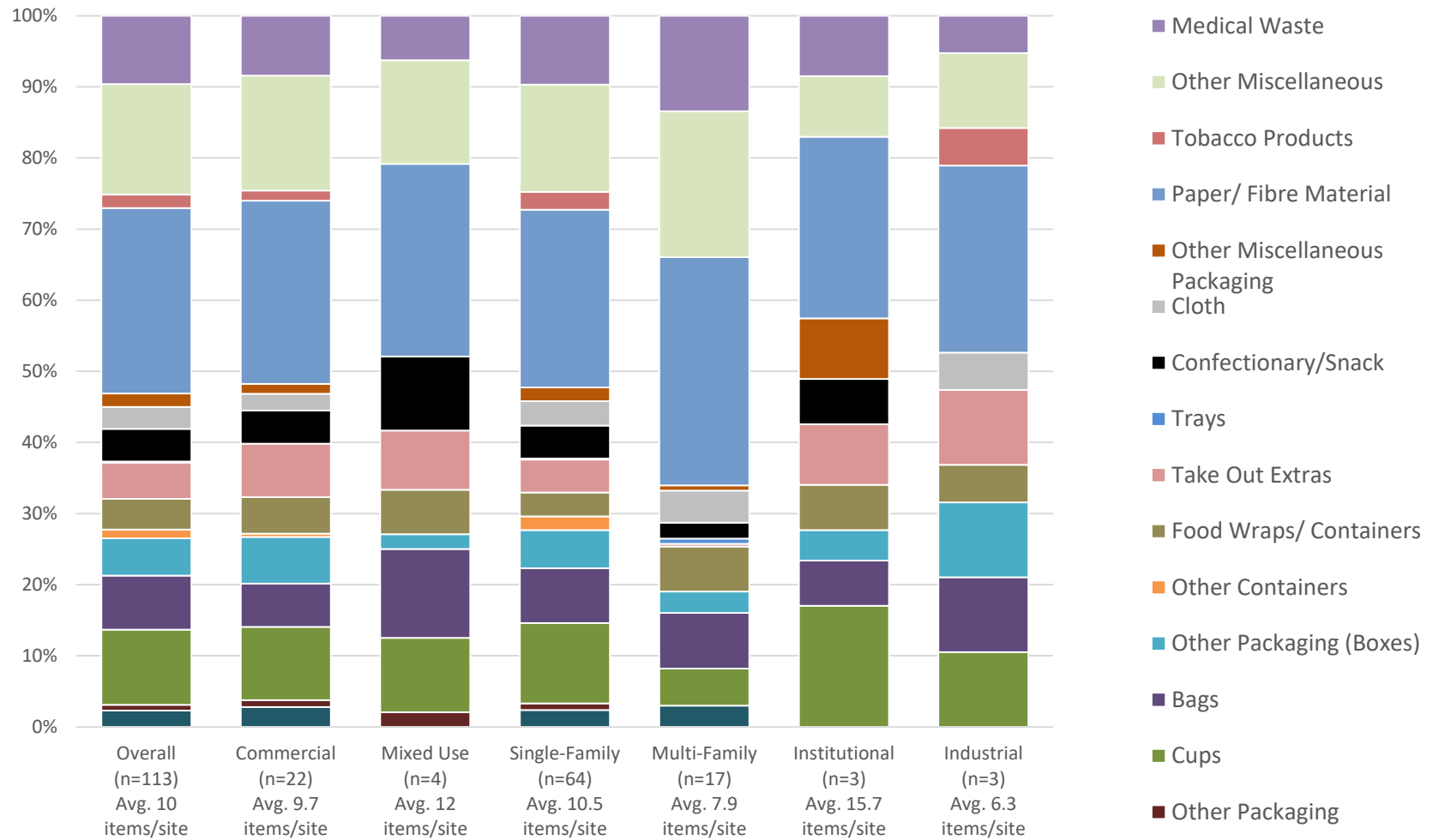


Figure 40: Large Litter Composition by Zone Type

### 3.2.6 Large Litter Results Compared to Previous Studies

The composition and average accumulation from 2022 are compared by category to the average number of items for audit years 2015-2019, 2020 and 2021 in **Table 7**. **Table 8** represents the average number of items per site as percentages. The audit completed in 2020 is included in the comparison, but may need to be considered an anomalous year due to the influence of COVID-19 on litter accumulation and consumer habits. It should be noted medical waste was not assessed as a separate category in the baseline audit study, having only been added in 2020. Also, of note these values do not include the ten sites that were immediately adjacent to construction in 2022, the six sites in 2020, or the average number of sites immediately adjacent to construction for the 2015 through 2019 audits.

**Overall, there was a 1% decrease in the average number of large litter per site observed in 2022 compared to the average of 2015 through 2019, a 2% decrease from the 2020 audit, and a 5% increase from the 2021 audit.**

The top three categories with the highest litter amounts remain the same, cups, paper/ fibre material, and 'other miscellaneous', this is illustrated in **Figure 42**. Compared to previous audits paper/ fibre materials increased, from its lowest value in 2021 (2.0) to 2022 (2.6) which is a 33% increase. The opposite occurred to 'other miscellaneous' which decrease in 2022, from its highest value in 2020 (3.1) to 2022 (1.6) there was a 51% decrease. The lowest category of all the previous Vancouver audits remains trays with an average that does not appear over 0% for any of the audits.

**Table 7: Vancouver Large Litter Audit Results in Comparison to Previous Audits in Vancouver (Average Number of Items per Site)**

Category	Vancouver 2015 to 2019 (106 Average Sites)	Vancouver 2020 (117 Sites)	Vancouver 2021 (111 Sites)	Vancouver 2022 (113 Sites)
Beverage Containers	0.2	0.3	0.3	0.2
Other Packaging	0.1	0.1	0.0	0.1
Cups	1.7	1.0	1.1	1.1
Bags	0.6	0.6	0.4	0.8
Other Packaging (Boxes)	0.3	0.2	0.3	0.5
Other Containers	0.1	0.1	0.1	0.1
Food Wraps/ Containers	0.3	0.2	0.4	0.4
Take Out Extras	0.5	0.8	0.4	0.5
Trays	0.0	0.0	0.0	0.0
Confectionary/Snack	0.8	0.6	0.6	0.5
Cloth	0.2	0.1	0.1	0.3

Category	Vancouver 2015 to 2019 (106 Average Sites)	Vancouver 2020 (117 Sites)	Vancouver 2021 (111 Sites)	Vancouver 2022 (113 Sites)
Other Miscellaneous Packaging	0.3	0.0	0.7	0.2
Paper/ Fibre Material	2.1	2.1	2.0	2.6
Tobacco Products	0.5	0.3	0.1	0.2
Other Miscellaneous	2.3	3.1	2.0	1.6
Medical Waste	n/a	0.5	0.9	1.0
<b>Total</b>	<b>10.1</b>	<b>10.3</b>	<b>9.5</b>	<b>10.0</b>

**Table 8: Vancouver Large Litter Audit Results in Comparison to Previous Audits in Vancouver (by Percent Breakdown)**

Category	Vancouver 2015 to 2019 (106 Average Sites)	Vancouver 2020 (117 Sites)	Vancouver 2021 (111 Sites)	Vancouver 2022 (113 Sites)
Beverage Containers	2%	3%	3%	2%
Other Packaging	1%	1%	0%	1%
Cups	17%	10%	12%	11%
Bags	6%	6%	4%	8%
Other Packaging (Boxes)	3%	2%	4%	5%
Other Containers	1%	1%	1%	1%
Food Wraps/ Containers	3%	2%	5%	4%
Take Out Extras	5%	8%	4%	5%
Trays	0%	0%	0%	0%
Confectionary/ Snack	8%	6%	7%	5%
Cloth	2%	1%	1%	3%
Other Miscellaneous Packaging	3%	0%	7%	2%
Paper/ Fibre Material	20%	20%	21%	26%
Tobacco Products	5%	3%	2%	2%
Other Miscellaneous	23%	31%	21%	16%
Medical Waste	n/a	5%	9%	10%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

The average number of litter items per year and the composition of those materials has changed throughout each year of the audit. **Figure 41** illustrates the annual results of litter composition

throughout each audit year based on average number of litter items per site. The top three categories of large litter items; cups, paper/ fibre material, and other miscellaneous are compared in **Figure 42**.

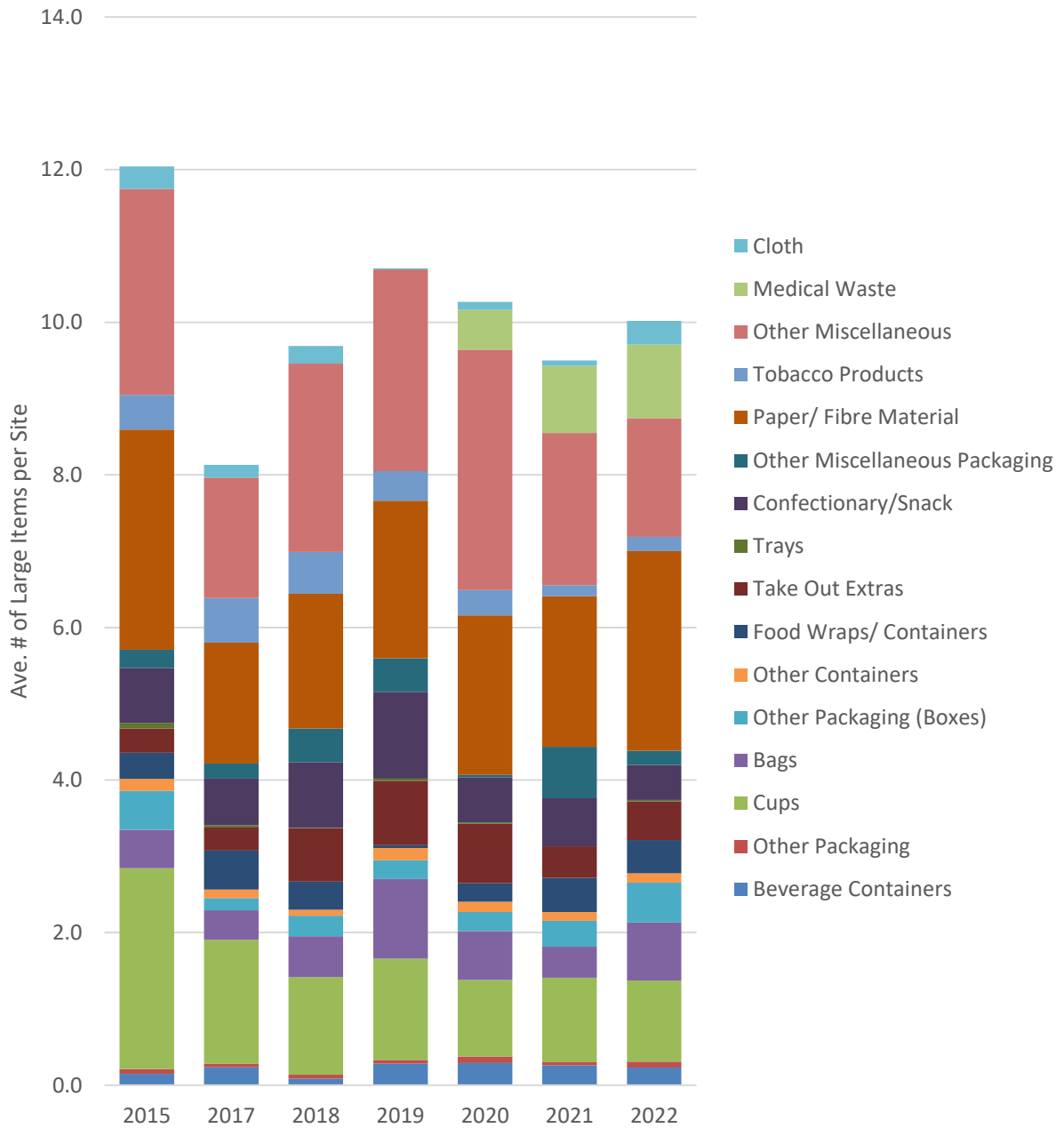
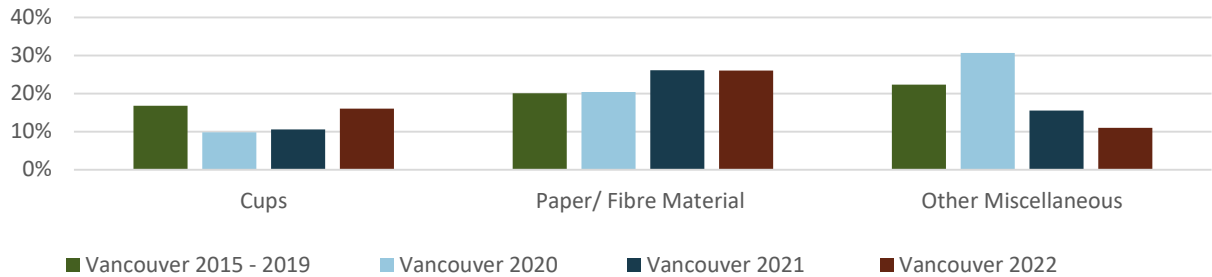


Figure 41: Comparison of Large Litter Categories by Year



**Figure 42: Comparison of Top Large Litter Categories from the Vancouver Audits**

### 3.2.7 Large Litter Statistical Analysis

The average number of large litter items per site in the 2022 audits was 10.0 pieces. There were seven sites that had no large litter accumulation whatsoever. Of the 113 sites surveyed, four sites had an average of ten pieces of large litter within the site, 70 sites had fewer than 10 pieces and 39 sites had more than ten pieces of large litter.

### 3.3 Small Litter Results

Small litter is any piece of litter that is less than 4 square inches. Small litter was divided into 26 categories for the baseline audit and follow-up audits for 2017 through 2020. In 2021, vapes and vaping equipment categories were added to the small litter audit making 28 categories.

As noted previously, the small litter audit involved examining three sections within the audit site, not the entire site (Supersite audit). This section reviews small litter by category, site and as compared to the rolling average of the baseline (2015) to 2019, 2020 and 2021 results. In 2022, the average number of small litter items per site with no construction adjacent was 8.5 pieces. The most common categories of small litter observed were glass (29%), paper (21%) and cigarette butts/debris (18%). **Table 9** provides these results (illustrated graphically in **Figure 43**).



**Table 9: Small Litter Data 2022**

<b>Category</b>	<b>Total Number of Items</b>	<b>% of Total</b>
Cigarette Butts/Debris	169	18%
Other Tobacco	0	0%
Bottle Caps	1	0%
Straws	2	0%
Candy Packaging and Wrappers	33	3%
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	0	0%
Other Polystyrene Debris (i.e., Poly Foam Pieces)	4	0%
Glass	277	29%
Paper	202	21%
Cup Sleeves	3	0%
Plastic Film	64	7%
Hard Plastic	90	9%
Aluminum/Foil Debris	19	2%
Rubber	3	0%
Metal (not aluminum)	5	1%
Chewing Gum (stuck on pavement)	35	4%
Food and Food Scraps	35	4%
Pet Waste (bagged)	0	0%
Pet Waste (loose)	1	0%
Needles/Syringes	0	0%
Medications	1	0%
Cell Phones	0	0%
Audio-Visual Devices	0	0%
Batteries	0	0%
Other Electronic Waste	0	0%
Other Material	20	2%
Vapes	0	0%
Vaping Equipment	0	0%
<b>Total Site Small Litter</b>	<b>964</b>	<b>100%</b>

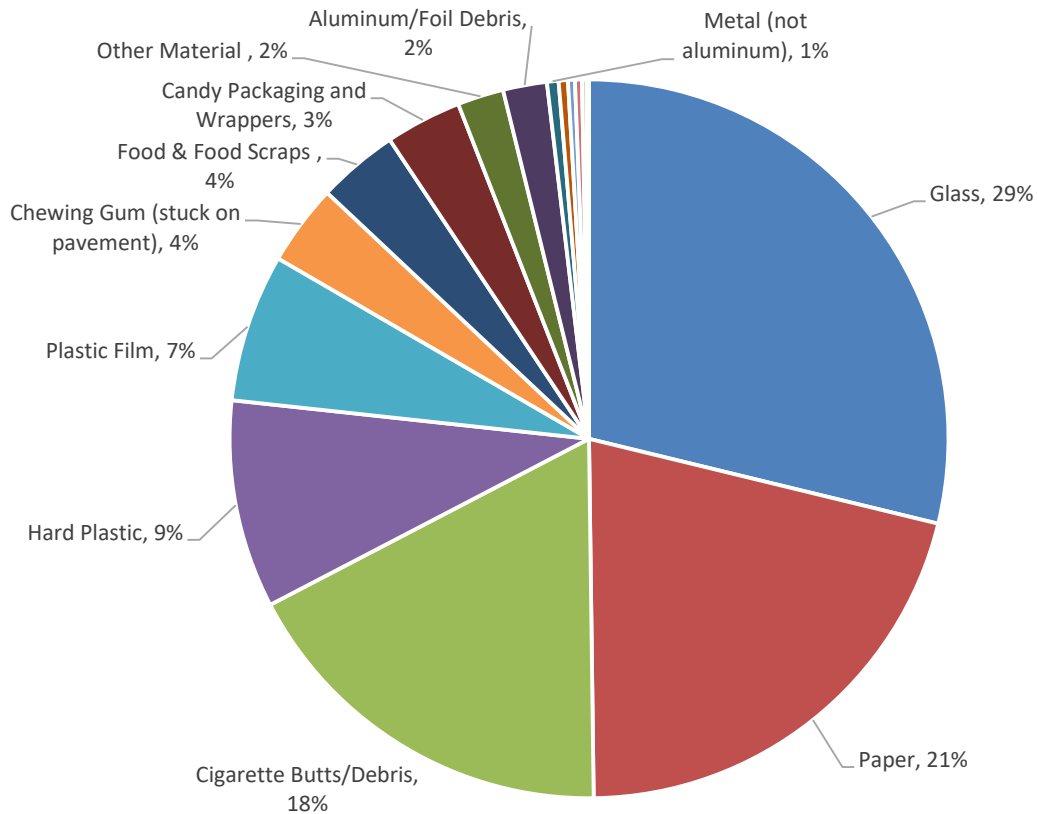


Figure 43: Small Litter Composition, 2022

3.3.1 Small Litter by Sites

The ten small litter sites with the most observed small litter are listed below in **Table 10**. The site with the most accumulated small litter in 2022 was Site 62 with 289 pieces of small litter observed. Site 62 is zoned for commercial use. In total, 56.6% of sites are zoned for single-family residential, 19.5% commercial, 15.0% multi-family, 3.5% mix use, 2.7% industrial and 2.7% institutional. A full ranking of sites is provided in **Appendix G**. Of note, three of the top ten sites - Sites 54, 106 and 55 were also litter sites with the highest number of large litter pieces in the 2021 audits.

Table 10: Small Litter Site Rankings

Site Number	Number of Pieces of Small Litter	Zoning	Hundred Block	Street Name
62	289	Commercial	2400	Kingsway
68	35	Single Family	2100	West 47 <sup>th</sup> Avenue
55	34	Multi-Family	3400	Vanness Avenue
41	28	Commercial	300	Terminal Avenue
118	27	Commercial	3500	Kingsway
54	21	Industrial	1100	Clarke Drive
123	20	Multi-Family	6000	Alberta Street
106	19	Institutional	1000	Burrard Street
23	17	Single Family	1200	East 28 <sup>th</sup> Avenue
59	17	Single Family	300	East 56 <sup>th</sup> Avenue

### 3.3.2 Small Litter by Zoning

Sites were zoned by their typical land-use. Zones used to categorize sites included: Commercial, mixed-use, single-family, multi-family, institutional and industrial. A breakdown of the number of sites per zone is provided in **Table 11**.

Table 11: Number of Litter Sites per Zoning

Zoning Type	Number of Litter Sites	Avg. # of Small Litter Items per Site
Institutional	3	3.0
Multi-Family	17	4.3
Mixed Use	4	4.8
Single-Family	64	5.1
Commercial	22	7.2
Industrial	3	11.3

A breakdown of small litter composition per zoning type is provided in **Table 12** and illustrated in **Figure 44**.

Table 12: Small Litter Composition by Zoning Type

Small Litter Category	Overall	Commercial	Mixed Use	Single-Family	Multi-Family	Institutional	Industrial
<b>Avg. # of Small Litter per Site</b>	<b>8.5</b>	<b>21.5</b>	<b>4.5</b>	<b>4.3</b>	<b>8.1</b>	<b>7.0</b>	<b>13.0</b>
Cigarette Butts/Debris	18%	13%	44%	17%	17%	33%	51%
Other Tobacco	0%	0%	0%	0%	0%	0%	0%
Bottle Caps	0%	0%	0%	0%	1%	0%	0%
Straws	0%	0%	6%	0%	0%	0%	0%
Candy Packaging and Wrappers	3%	2%	11%	6%	1%	10%	0%
Expanded Polystyrene Packing Materials, i.e. Foam Peanuts	0%	0%	0%	0%	0%	0%	0%
Other Polystyrene Debris (i.e. Poly Foam Pieces)	0%	0%	0%	0%	1%	0%	0%
Glass	29%	56%	0%	3%	3%	0%	0%
Paper	21%	15%	6%	29%	31%	14%	13%
Cup Sleeves	0%	0%	0%	1%	0%	0%	0%
Plastic Film	7%	4%	6%	9%	13%	5%	0%
Hard Plastic	9%	3%	0%	21%	7%	0%	21%
Aluminum/Foil Debris	2%	0%	0%	5%	1%	0%	0%
Rubber	0%	0%	0%	1%	0%	0%	0%
Metal (not aluminum)	1%	0%	6%	1%	0%	0%	0%
Chewing Gum (stuck on pavement)	4%	3%	17%	1%	4%	24%	15%
Food & Food Scraps	4%	1%	6%	1%	18%	10%	0%
Pet Waste (bagged)	0%	0%	0%	0%	0%	0%	0%
Pet Waste (loose)	0%	0%	0%	0%	0%	0%	0%
Needles/Syringes	0%	0%	0%	0%	0%	0%	0%
Medications	0%	0%	0%	0%	0%	5%	0%
Cell Phones	0%	0%	0%	0%	0%	0%	0%
Audio-Visual devices	0%	0%	0%	0%	0%	0%	0%
Batteries	0%	0%	0%	0%	0%	0%	0%
Other Electronic Waste	0%	0%	0%	0%	0%	0%	0%
Other Material	2%	1%	0%	3%	3%	0%	0%
Vapes	0%	0%	0%	0%	0%	0%	0%
Vaping Equipment	0%	0%	0%	0%	0%	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

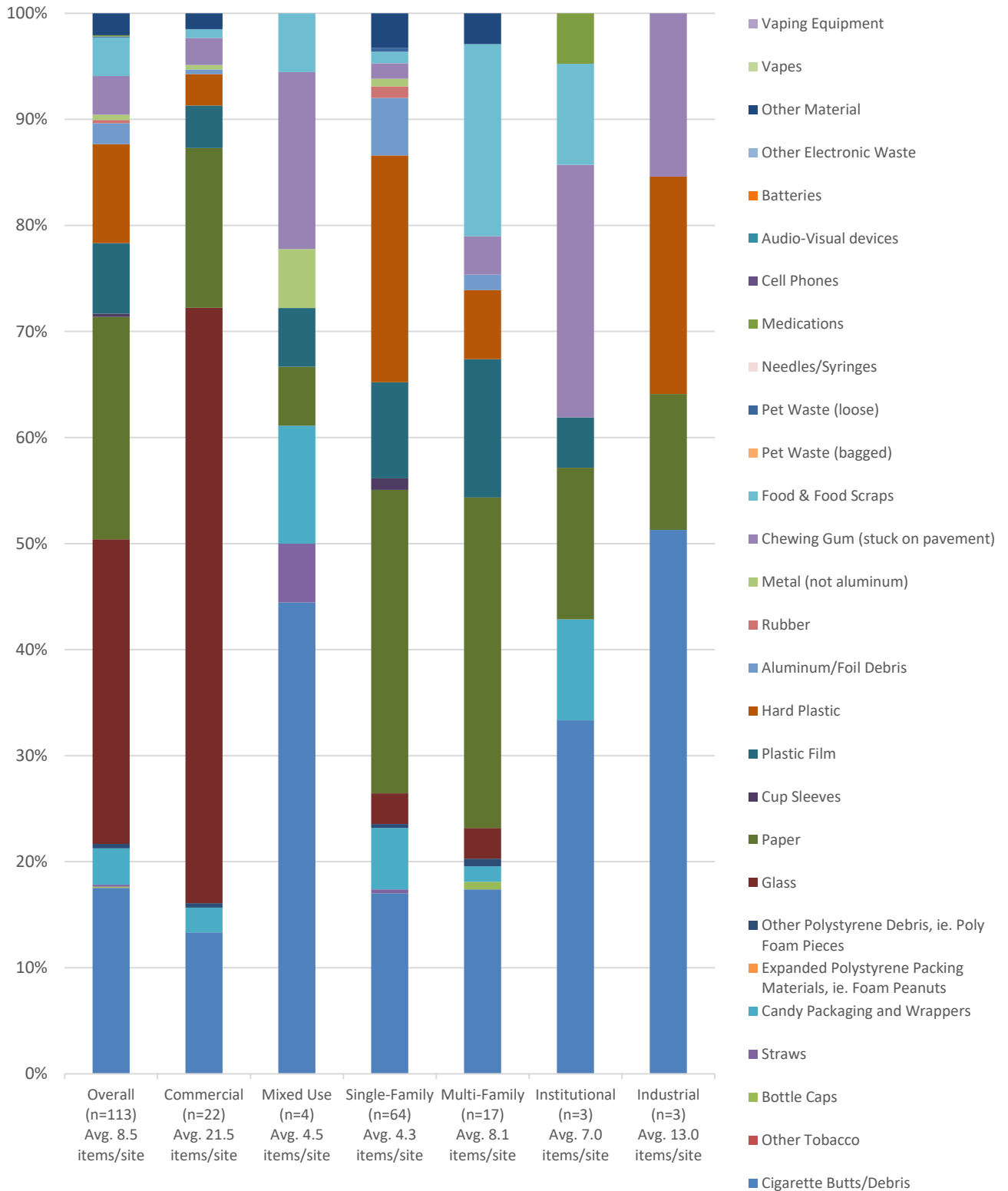


Figure 44: Smaller Litter Composition by Zone Type

### 3.3.3 Small Litter Results Compared to Previous Studies

The composition and average accumulation from 2022 are compared by category to the average number of items for audit years 2015-2019 in **Table 13**. The audit completed in 2020 is included in **Table 13** and **Table 14**, but it is considered an anomalous year due to the influence of COVID-19. It should be noted these values do not include the ten sites that were immediately adjacent to construction in 2022, the six sites in 2020, or the average number of sites immediately adjacent to construction for the 2015 through 2019 audits. A comparison of the average accumulated small litter by year is presented in **Figure 45**. It should be noted vapes and vaping equipment waste was not assessed as a separate category in the audit studies conducted previously, having only been added in 2021.

**Overall, there was a 22% increase in the average number of small litter per site observed in 2022 compared to the average of 2015 through 2019, a 5% increase from the 2020 audit, and a 52% increase from the 2021 audit.**

Over the previous audits the top three categories were consistently cigarette butts/ debris, paper, and chewing gum, but in 2022 this change with glass (29%) replacing chewing gum (4%), illustrated in **Figure 46**. Compared to previous audits cigarette butts/ debris and chewing gum have been decreasing. Cigarettes from its highest value in 2015-2019 (2.2) to 2022 (1.5), a 30% decrease. Chewing gum from its highest value in 2015-2019 (1.7) to 2022 (0.3) which is a decrease of 82%. There are multiple small litter categories which the average does not appear over 0% for any of the audits.

**Table 13: Vancouver Small Litter Results (Average Number of Items per Site)**

<b>Category</b>	<b>Vancouver 2015 to 2019 (106 Average Sites)</b>	<b>Vancouver 2020 (117 Sites)</b>	<b>Vancouver 2021 (111 Sites)</b>	<b>Vancouver 2022 (113 Sites)</b>
Cigarette Butts/Debris	2.2	2.0	1.7	1.5
Other Tobacco	0.0	0.0	0.0	0.0
Bottle Caps	0.0	0.0	0.1	0.0
Straws	0.0	0.0	0.0	0.0
Candy Packaging and Wrappers	0.2	0.3	0.2	0.3
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	0.1	0.2	0.1	0.0
Other Polystyrene Debris (i.e., Poly Foam Pieces)	0.1	0.1	0.1	0.0
Glass	0.2	0.9	0.3	2.5
Paper	1.2	1.4	0.8	1.8
Cup Sleeves	0.0	0.0	0.0	0.0
Plastic Film	0.4	0.2	0.4	0.6
Hard Plastic	0.4	0.7	0.5	0.8
Aluminum/Foil Debris	0.2	0.3	0.2	0.2
Rubber	0.0	0.0	0.0	0.0
Metal (Not Aluminum)	0.1	0.1	0.3	0.0
Chewing Gum (Stuck on Pavement)	1.7	1.6	0.8	0.3
Food and Food Scraps	0.1	0.1	0.1	0.3
Pet Waste (Bagged)	0.0	0.0	0.0	0.0
Pet Waste (Loose)	0.0	0.0	0.0	0.0
Needles/Syringes	0.0	0.0	0.0	0.0
Medications	0.0	0.0	0.0	0.0
Cell Phones	0.0	0.0	0.0	0.0
Audio-Visual Devices	0.0	0.0	0.0	0.0
Batteries	0.0	0.0	0.0	0.0
Other Electronic Waste	0.0	0.0	0.0	0.0
Other Material	0.1	0.2	0.1	0.2
Vaping	n/a	n/a	0.0	0.0
Vaping Equipment	n/a	n/a	0.0	0.0
<b>Total</b>	<b>7.0</b>	<b>8.2</b>	<b>5.6</b>	<b>8.5</b>



Table 14: Vancouver Small Litter Audit Results (Percentage Breakdown)

Category	Vancouver 2015 to 2019 (106 Average Sites)	Vancouver 2020 (117 Sites)	Vancouver 2021 (111 Sites)	Vancouver 2022 (113 Sites)
Cigarette Butts/Debris	29%	24%	30%	18%
Other Tobacco	0%	0%	0%	0%
Bottle Caps	0%	0%	1%	0%
Straws	0%	0%	1%	0%
Candy Packaging and Wrappers	3%	3%	3%	3%
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	1%	2%	1%	0%
Other Polystyrene Debris (i.e., Poly Foam Pieces)	1%	1%	1%	0%
Glass	5%	11%	6%	29%
Paper	17%	17%	15%	21%
Cup Sleeves	0%	0%	0%	0%
Plastic Film	5%	2%	8%	7%
Hard Plastic	6%	8%	8%	9%
Aluminum/Foil Debris	4%	4%	4%	2%
Rubber	0%	0%	1%	0%
Metal (Not Aluminum)	1%	1%	5%	1%
Chewing Gum (Stuck on Pavement)	22%	19%	14%	4%
Food and Food Scraps	1%	1%	1%	4%
Pet Waste (Bagged)	0%	0%	0%	0%
Pet Waste (Loose)	0%	0%	0%	0%
Needles/Syringes	0%	0%	0%	0%
Medications	0%	0%	0%	0%
Cell Phones	0%	0%	0%	0%
Audio-Visual Devices	0%	0%	0%	0%
Batteries	0%	0%	0%	0%
Other Electronic Waste	0%	0%	0%	0%
Other Material	3%	3%	1%	2%
Vaping	n/a	n/a	0%	0%
Vaping Equipment	n/a	n/a	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

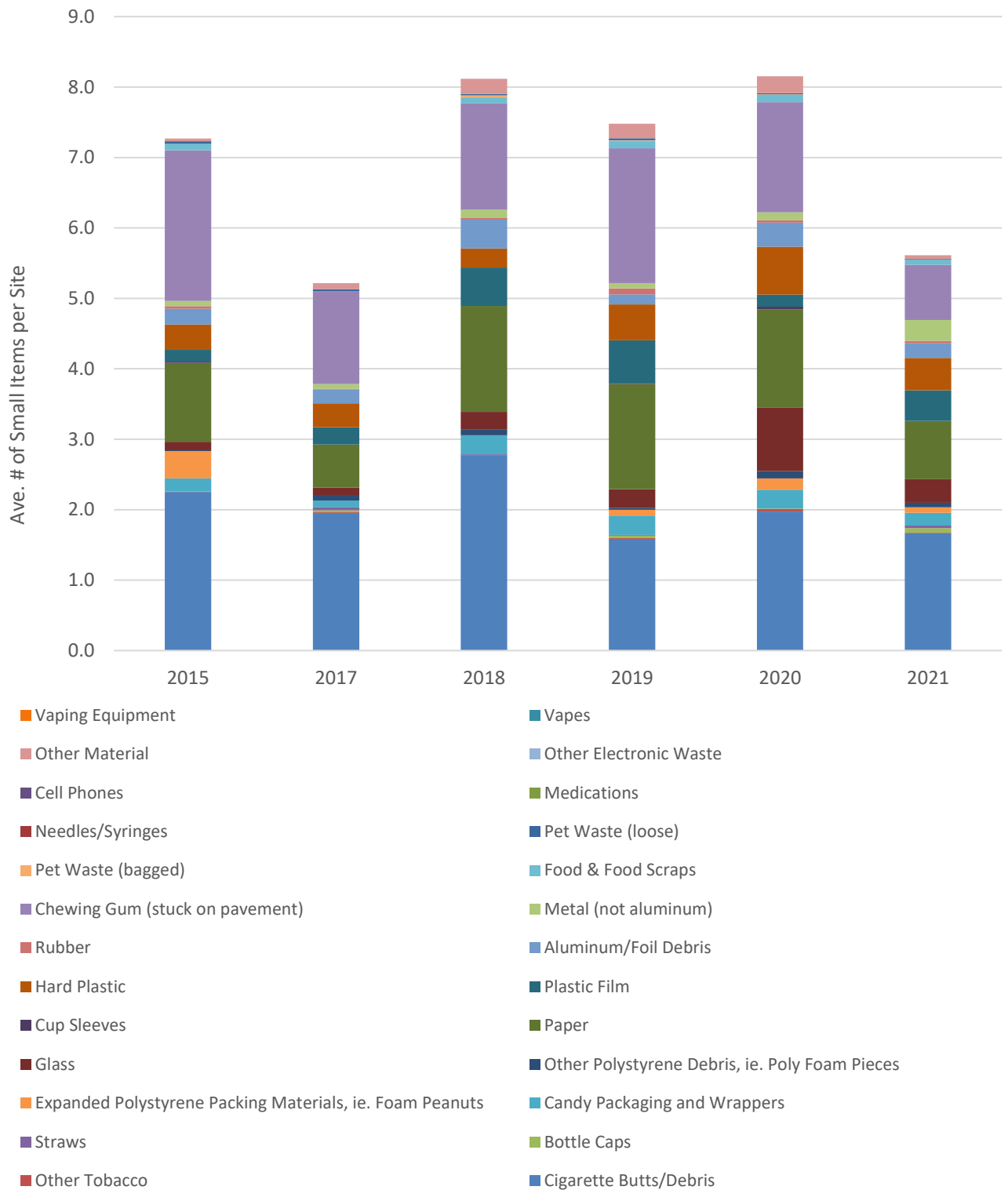


Figure 45: Comparison of Small Litter Categories by Year

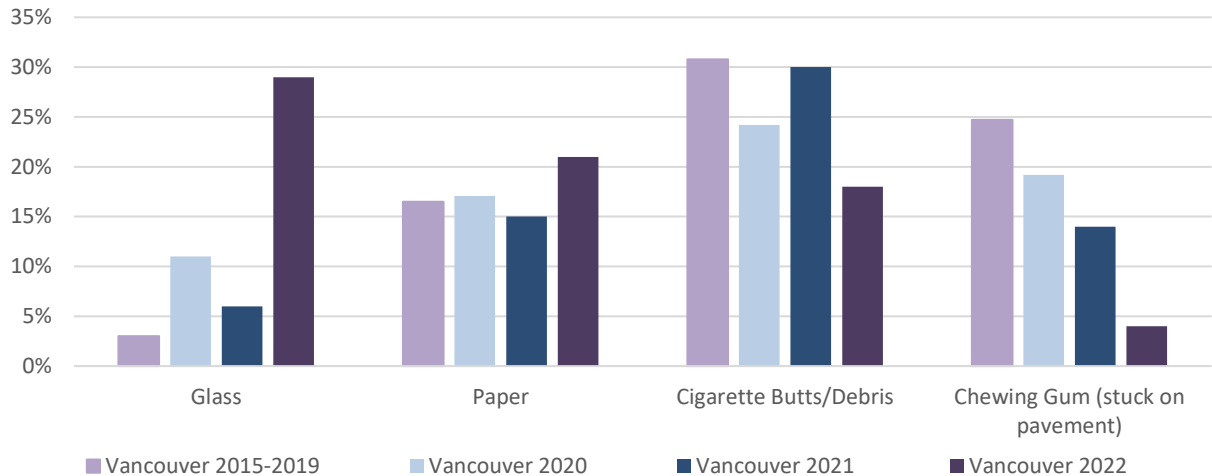


Figure 46: Comparison of Top Small Litter Categories

### 3.3.4 Small Litter Statistical Analysis

The average number of small litter items per site in the 2022 audits was observed at 8.5 pieces with no construction adjacent. There were 8 sites that had no small litter accumulation whatsoever. Of the 113 sites surveyed with no construction adjacent, four sites had an average of nine pieces of small litter within the site, 87 sites had fewer than nine pieces and 22 sites had more than nine pieces of small litter.

## 3.4 Small Litter Supersite Results

A site is considered a supersite is when *all* small litter within the site is observed and counted, not only the three segmented portions of the site (beginning, end and mid-point). This assessment was completed at 20 pre-determined sites (same 19 sites for all previous audits done for the City, one additional site in 2020).

In 2022, the average number of small litter items per supersite was 225.9 pieces. **The most common categories of small litter observed were cigarette butts/debris (38%) and chewing gum (25%), which accounted for a combined 63% of all small litter observed on the supersites.** Table 15 provides these results.

Table 15: Supersite Litter Data 2022

Category	Total Number of Items	% of Total
Cigarette Butts/Debris	1738	38%
Other Tobacco	0	0%
Bottle Caps	12	0%
Straws	5	0%
Candy Packaging and Wrappers	80	2%
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	4	0%
Other Polystyrene Debris (i.e., Poly Foam Pieces)	5	0%
Glass	232	5%
Paper	709	16%
Cup Sleeves	0	0%
Plastic Film	97	2%
Hard Plastic	255	6%
Aluminum/Foil Debris	28	1%
Rubber	10	0%
Metal (Not Aluminum)	25	1%
Chewing Gum (Stuck on Pavement)	1115	25%
Food and Food Scraps	146	3%
Pet Waste (Bagged)	0	0%
Pet Waste (Loose)	3	0%
Needles/Syringes	2	0%
Medications	1	0%
Cell Phones	0	0%
Audio-Visual Devices	0	0%
Batteries	22	0%
Other Electronic Waste	1	0%
Other Material	28	1%
Vaping	0	0%
Vaping Equipment	0	0%
<b>Total Supersite Small Litter</b>	<b>4518</b>	<b>100%</b>

All 20 supersites are ranked from highest amount of litter to least in **Table 16**. The site with the most accumulated litter in 2022 was Site 106 with 802 pieces of small litter observed.

Table 16: Supersite Rankings 2022

Site Number	Number of Pieces of Small Litter	Hundred Block	Street Name
106	802	1000	Burrard Street
41	613	300	Terminal Avenue
108	508	5600	Main Street
31	427	2700	East Hastings Street
54	395	1100	Clark Drive
104	283	1100	Denman Street
97	220	800	Commercial Drive
101	212	1700	West Broadway
52	184	600	Evans Street
77	183	5500	Main Street
38	165	1000	West Georgia Street
56	119	2900	Horley Street
109	109	1000	Kingsway
26	74	2000	Wall Street
42	71	1700	West 3 <sup>rd</sup> Avenue
82	48	900	East 24 <sup>th</sup> Avenue
32	33	1800	Yew Street
18	29	800	Hornby Street
21	27	300	East 39 <sup>th</sup> Avenue
65	16	7500	Selkirk Street

#### 3.4.1 2022 Supersite Small Litter Results Compared to Other Audits

Results from the 2022 supersite small litter audits were compared to the 2015 to 2019, 2020, and 2021 results, seen in **Table 17** and **Table 18**. **Table 19** compares the number small litter found at the supersites 2015-2019, 2020, 2021 audit results.

**Overall, there was a 17% decrease in the litter accumulated at the supersites in 2022 compared to the average 2015 to 2019 results. There was a 4% decrease compared to the 2020 audit, but a 6% increase compared to the 2021 audit.** Figure 47 illustrates the top four categories of the small litter at the supersites, this includes cigarette butts/ debris, chewing gum (stuck on pavement), paper, and glass. All top categories have stayed consistent, paper is the only category that has shown any movement. Paper had its lowest value in 2015 to 2019 of 17.5 and it has increased to 35.45 in 2022, a 103% increase.

**Table 17: Vancouver Supersite Small Litter Comparison (Average Number of Items per Site)**

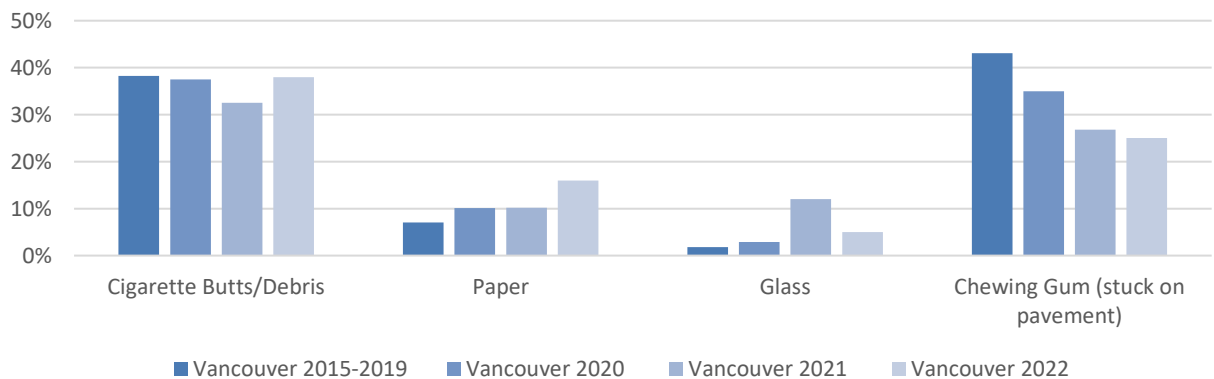
<b>Category</b>	<b>Vancouver 2015 to 2019 (19 Sites)</b>	<b>Vancouver 2020 (20 Sites)</b>	<b>Vancouver 2021 (20 Sites)</b>	<b>Vancouver 2022 (20 Sites)</b>
Cigarette Butts/Debris	103.1	88.1	69.5	86.9
Other Tobacco	0.1	0.2	0.0	0.0
Bottle Caps	0.6	0.4	0.8	0.6
Straws	0.2	0.1	0.5	0.3
Candy Packaging and Wrappers	4.2	3.6	3.1	4.0
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	0.1	3.3	0.7	0.2
Other Polystyrene Debris (i.e., Poly Foam Pieces)	0.4	0.4	0.9	0.3
Glass	5.7	6.8	25.7	11.6
Paper	20.2	23.8	21.8	35.5
Cup Sleeves	0.0	0.1	0.2	0.0
Plastic Film	4.8	3.5	9.5	4.9
Hard Plastic	7.3	11.1	8.7	12.8
Aluminum/Foil Debris	4.0	4.0	6.5	1.4
Rubber	0.6	0.6	1.1	0.5
Metal (Not Aluminum)	1.3	1.7	3.7	1.3
Chewing Gum (Stuck on Pavement)	138.6	82.2	57.2	55.8
Food and Food Scraps	2.2	3.5	0.8	7.3
Pet Waste (Bagged)	0.1	0.0	0.0	0.0
Pet Waste (Loose)	0.1	0.1	0.0	0.2
Needles/Syringes	0.0	0.1	0.1	0.1
Medications	0.0	0.0	0.1	0.1
Cell Phones	0.0	0.0	0.0	0.0
Audio-Visual Devices	0.0	0.0	0.1	0.0
Batteries	0.1	0.0	0.1	1.1
Other Electronic Waste	0.0	0.0	0.1	0.1
Other Material	2.6	1.9	2.3	1.4
Vaping	n/a	n/a	0.2	0.0
Vaping Equipment	n/a	n/a	0.1	0.0
<b>Total</b>	<b>296.3</b>	<b>234.9</b>	<b>213.4</b>	<b>225.9</b>

Table 18: Vancouver Supersite Small Litter Comparison (Percentage Breakdown)

Category	Vancouver 2015 to 2019 (19 Sites)	Vancouver 2020 (20 Sites)	Vancouver 2021 (20 Sites)	Vancouver 2022 (20 Sites)
Cigarette Butts/Debris	36%	37%	33%	38%
Other Tobacco	0%	0%	0%	0%
Bottle Caps	0%	0%	0%	0%
Straws	0%	0%	0%	0%
Candy Packaging and Wrappers	1%	2%	1%	2%
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	0%	1%	0%	0%
Other Polystyrene Debris (i.e., Poly Foam Pieces)	0%	0%	0%	0%
Glass	2%	3%	12%	5%
Paper	6%	10%	10%	16%
Cup Sleeves	0%	0%	0%	0%
Plastic Film	1%	1%	4%	2%
Hard Plastic	2%	5%	4%	6%
Aluminum/Foil Debris	1%	2%	3%	1%
Rubber	0%	0%	1%	0%
Metal (Not Aluminum)	0%	1%	2%	1%
Chewing Gum (stuck on pavement)	47%	35%	27%	25%
Food and Food Scraps	1%	1%	0%	3%
Pet Waste (Bagged)	0%	0%	0%	0%
Pet Waste (Loose)	0%	0%	0%	0%
Needles/Syringes	0%	0%	0%	0%
Medications	0%	0%	0%	0%
Cell Phones	0%	0%	0%	0%
Audio-Visual Devices	0%	0%	0%	0%
Batteries	0%	0%	0%	0%
Other Electronic Waste	0%	0%	0%	0%
Other Material	1%	1%	1%	1%
Vaping	n/a	n/a	0%	0%
Vaping Equipment	n/a	n/a	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Table 19: Supersite Audit Results by Site and Year**

Site Number	2022 Number of Pieces of Small Litter	2021 Number of Pieces of Small Litter	2020 Number of Pieces of Small Litter	2019-2015 Ave. Number of Pieces of Small Litter
106	802	472	594	585
41	613	350	240	497
108	508	245	435	471
31	427	301	438	363
54	395	442	500	363
104	283	252	341	352
97	220	349	524	285
101	212	248	243	280
52	184	46	154	121
77	183	68	98	161
38	165	737	423	589
56	119	71	66	78
109	109	115	214	329
26	74	32	77	99
42	71	101	49	83
82	48	17	30	44
32	33	136	132	120
18	29	273	117	303
21	27	11	15	23
65	16	1	7	-
<b>Total Small Litter</b>	<b>4,518</b>	<b>4,267</b>	<b>4,697</b>	<b>5,144</b>



**Figure 47: Comparison of Top Supersite Litter Categories**



### 3.4.2 Supersite Small Litter Statistical Analysis

The average number of small litter items per supersite in the 2022 audits was 225.9 pieces. All sites observed had some amount of small litter accumulated. Of the 20 sites surveyed, 14 sites had less than 226 pieces of small litter and six sites had more than 226 pieces of small litter.

### 3.4.3 Overall Litter Accumulation on Supersites

When a site is observed as a supersite every piece of litter is recorded. **Table 20** illustrates the combined results of small and large litter for each site. Of all the supersites, Site 106 had the most accumulated litter with 809 pieces of litter counted.

**Table 20: Overall Combined Small and Large Litter for Supersites**

Site Number	Number of Pieces of Small Litter	Number of Pieces of Large Litter	Total Litter
106	802	7	809
41	613	17.5	630.5
108	508	20	528
31	427	11	438
54	395	5	400
104	283	0	283
97	220	51.5	271.5
101	212	3	215
77	183	25.5	208.5
52	184	11	195
38	165	3	168
56	119	7	126
109	109	3	112
42	71	14	85
26	74	8	82
82	48	12	60
32	33	8	41
18	29	4	33
21	27	4	31
65	16	4	20

### 3.5 Sites Immediately Adjacent to Construction

Dillon staff were asked to note if any sites had construction occurring immediately adjacent to the site being studied. There were ten sites where this occurred in 2022 (Sites 31, 47, 63, 81, 86, 90, 97, 107, 108 and 109). These ten sites were analyzed separately as the construction activities were expected to increase accumulation of litter.

3.5.1 Large Litter Results

Within the ten sites immediately adjacent to construction, the average number of large litter items per site was 23.1 pieces of litter. This was, **on average 130% more litter** than the sites that did not have construction directly adjacent. Overall, the breakdown by material was 39% of material was paper, 34% plastic, 26% other, 1% composite and less than 1% metal.

The general composition of material did not drastically differ between the sites that had construction adjacent and the sites that did not. **Figure 48** illustrates the composition of litter found within the construction-adjacent sites. **Table 21** provides a comparison of large litter observed on sites with and without construction adjacent, based on category.

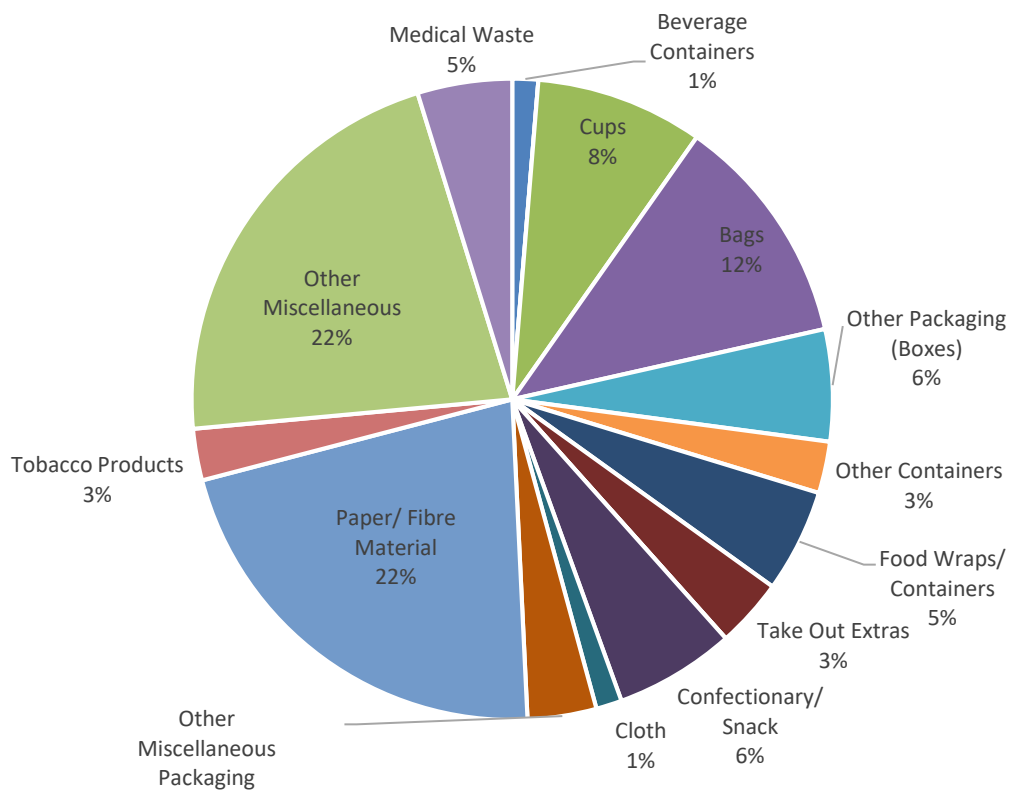


Figure 48: Litter Sites with Immediately Adjacent Construction – Large Litter by Category

**Table 21: Large Litter Categories Comparison for Sites with and without Construction Adjacent**

Category	Sites with Construction	Sites without Construction
<b>Avg. Items per Site</b>	<b>23.1</b>	<b>10.0</b>
Beverage Containers	1%	2%
Other Packaging	0%	1%
Cups	8%	11%
Bags	12%	8%
Other Packaging (Boxes)	6%	5%
Other Containers	3%	1%
Food Wraps/Containers	5%	4%
Take Out Extras	3%	5%
Trays	0%	0%
Confectionary/Snack	6%	5%
Cloth	1%	3%
Other Miscellaneous Packaging	3%	2%
Paper/Fibre Material	22%	26%
Tobacco Products	3%	2%
Other Miscellaneous	22%	16%
<b>Total</b>	<b>100%</b>	<b>100%</b>

### 3.5.2 Small Litter Results

Within the ten sites that were immediately adjacent to construction, the average number of small litter items per site was 6.8 pieces of litter. This was, on average, 20% less than small litter accumulated at the sites that did not have construction (at 8.5 pieces). **Table 22** provides a comparison of small litter observed on sites with and without construction adjacent, based on category.

Overall, the comparison is quite similar from one category to the next. The most significant difference is the decrease in glass on sites with construction nearby (3% with construction adjacent, 29% without construction) and an increase in chewing gum stuck on pavement (22% on construction sites and 4% on sites without construction).

**Table 22: Small Litter Comparison for Sites with and without Construction Adjacent**

<b>Category</b>	<b>Sites with Construction</b>	<b>Sites without Construction</b>
Avg. Items per Site	6.8	8.5
Cigarette Butts/Debris	34%	18%
Other Tobacco	0%	0%
Bottle Caps	1%	0%
Straws	0%	0%
Candy Packaging and Wrappers	7%	3%
Expanded Polystyrene Packing Materials (i.e., Foam Peanuts)	0%	0%
Other Polystyrene Debris (i.e., Poly Foam Pieces)	0%	0%
Glass	3%	29%
Paper	13%	21%
Cup Sleeves	0%	0%
Plastic Film	6%	7%
Hard Plastic	9%	9%
Aluminum/Foil Debris	0%	2%
Rubber	0%	0%
Metal (Not Aluminum)	0%	1%
Chewing Gum (Stuck on Pavement)	22%	4%
Food and Food Scraps	1%	4%
Pet Waste (Bagged)	0%	0%
Pet Waste (Loose)	1%	0%
Needles/Syringes	0%	0%
Medications	0%	0%
Cell Phones	0%	0%
Audio-Visual Devices	0%	0%
Batteries	0%	0%
Other Electronic Waste	0%	0%
Other Material	1%	2%
Vaping	0%	0%
Vaping Equipment	0%	0%
<b>Total Site Small Litter</b>	<b>100%</b>	<b>100%</b>

## 4.0 Additional Observations

The City of Vancouver is conducting a variety of ongoing public spaces programs promoting waste diversion in the public realm. These programs support the GCAP and are a part of ongoing zero waste initiatives that aim to promote diversion and reduce litter (particularly of SUIs).

During the litter audits, Dillon staff would note if there were any City waste receptacles within 50 m of the site. There were several different types of receptacles noticed within and around the litter sites as illustrated in **Figure 49** through **Figure 52**.

The downtown on-street recycling project started in the summer of 2017 with 15 new three stream waste receptacles being installed in the downtown core. In 2018 there were 28 more receptacles installed, ten in the summer and 18 in the winter. It is our current understanding that there has not been any analysis done to determine if the installation of these receptacles has assisted in reducing curbside littering. However, more public spaces receptacles have been installed as required in high need areas.



**Figure 49: Single Stream Garbage Receptacle**



**Figure 50: Single Stream Receptacle and Recyclable Beverage Container**

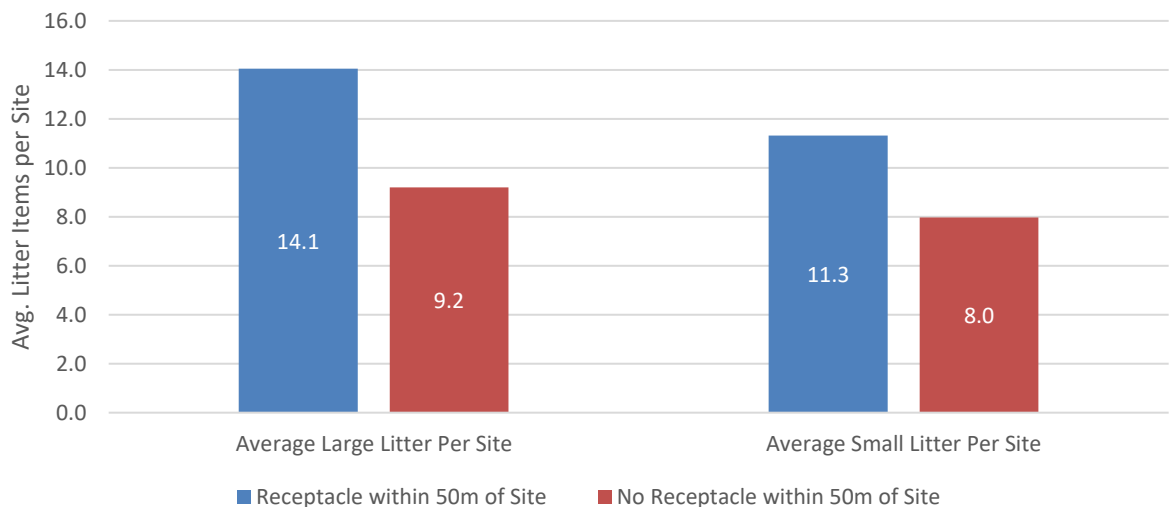


**Figure 51: Downtown Core Three Stream Receptacles**



**Figure 52: Cigarette Receptacle**

There were 100 sites (81%) where City litter bins were *not* within 50 m of the site being audited and 23 sites (19%) where there were City litter receptacles within 50 m. **Sites in proximity to waste receptacles had on average 14.1 pieces of large litter while sites without had an average of 9.2 pieces of large litter. Small litter also, was on average higher where there were waste receptacles (11.3 pieces) versus when there were no waste receptacles (8.0 pieces).** These results are illustrated in **Figure 53**. It should be noted that the City installs waste receptacles in high-traffic areas, and in some instances, waste receptacles are installed because of litter issues in specific areas. Thus, the fact that there typically is more litter accumulation near waste receptacles is not necessarily due to the presence of the receptacle itself. The increase in litter accumulation near waste receptacles may simply be due to the nature of the area where receptacles are installed.



**Figure 53: Average Large and Small Litter Pieces per Site (2022) based on the Presence of Waste Receptacle**

## 5.0

## Site Ranking and Attributes

Dillon staff ranked each of the 123 audited sites in three different ways, as follows:

1. Total number of large litter items audited within each site;
2. Total number of small litter items audited within each site; and
3. Total number of combined large and small litter items within each site.

**Table 23** indicates the top ten sites, demonstrating the greatest accumulation of large and small litter combined. A full list of all sites is provided in **Appendix G**.

In an effort to examine the audit results further, various attributes which may contribute to litter levels were examined. Attributes potentially associated with the ten sites having the highest amount of combined litter are provided in **Table 23**. Of these sites 50% had a fast food restaurant within sight. A convenience store was noted within sight in 40% of the sites. There was a bus stop within the survey area of 50% of the sites and City litter receptacles were within 50 m of 50% of the sites.

**Table 23: Combined Ranking for Large and Small Litter**

Site Number	All Litter	Hundred Block	Street Name	Fast Food	Convenience Store	Bus Stop	Litter Bin
62	297	2400	Kingsway	N	N	N	N
55	129.5	3400	Vanness Avenue	Y	N	Y	Y
13	51	3500	Euclid Avenue	N	N	N	N
59	49	300	East 56 <sup>th</sup> Avenue	N	N	N	N
41	45.5	300	Terminal Avenue	Y	N	N	N
68	38.5	2100	West 47 <sup>th</sup> Avenue	N	N	N	N
50	37	2900	West 10 <sup>th</sup> Avenue	N	N	N	N
89	37	6500	Main Street	Y	N	Y	Y
124	36	6500	Oak Street	Y	Y	Y	Y
61	35	5000	Commercial Street	N	N	N	N



## 6.0 Conclusions

It is important to note the information contained within this report, detailing the 2022 litter audit results, is a “snapshot” in time. These results only reflect the conditions of the period of time in which they were collected. Seasonal variability and weather, among other factors, can affect the amount of accumulated litter within an area. The litter audit results for the assessments that took place September 19 to 22, 2022, are those reflected in this report.

### 6.1 Key Findings of the Large Litter Audits

Large litter was observed at 116 of 123 sites. Ten of these audits are analyzed separately as they were immediately adjacent to construction sites. The key findings of the large litter audits were:

- In 2022, the most common primary categories for large litter observed were paper/fibre materials (26%) – see examples in **Appendix C**, ‘other miscellaneous’ (16%) and cups (11%).
- Overall, there was a 1% decrease in the large litter observed in 2022 from the average results collected in 2015 through 2019, a 2% decrease from the 2020 audit. However, there was 5% increase from the 2021 audit.
- The largest material type observed was paper (39%), followed by plastic (32%), ‘other’ (26%), metal (2%) and composite (1%).
- The most common sub-category of large litter observed was non-brand towels/napkins. Non-brand towels/napkins represented 13% of all large litter surveyed in 2022.
- Of the 1,132 pieces of large litter audited, 10% were PPE and other medical waste items (disposable masks, gloves, and disinfecting wipes). This is a decrease from the 2020 audits (51%).
- Within the ten sites that were immediately adjacent to construction, the average number of large litter items per site was 23.1 pieces of litter. This was, on average, 130% more large litter than the sites that did not have construction directly adjacent (at 10.0 pieces).

### 6.2 Key Findings of the Small Litter Audits

Small litter was observed at 115 of the 123 sites. Ten of these audits are analyzed separately as they were immediately adjacent to construction. The key findings of the small litter audits were:

- The most common categories of small litter observed were glass (29%), paper (21%) and cigarette butts/ debris (14%).
- Overall, there was a 21% increase in the small litter observed in 2022 from the average results observed in 2015-2019 and a 5% increase from the 2020 audit.
- Within the ten sites that were immediately adjacent to construction, the average number of small litter items per site was 6.8 pieces of litter. This was, on average, **20% less small litter** than the sites that did not have construction directly adjacent (at 8.5 pieces).



### 6.3 Key Findings of Supersite Audits

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Supersite audits were completed within 20 sites. The key findings of the supersite assessments were:

- The most common categories of small litter observed were cigarette butts/debris (38%) and chewing gum (25%), which accounted for a combined 63% of all small litter observed on the supersites.
- The average number of small litter items per site was 225.9 pieces of small litter. This was less than the average pieces for the 2015 - 2019 audits (270.7) and the 2020 follow-up audits (234.9).
- The total small litter audited in the 2022 supersites was 4,518 pieces.

## 7.0

## Recommendations

Our team understands the best practices to combat litter and illegal waste. These practices include:

- Bylaw Enforcement;
- Staffing;
- Reporting;
- Education;
- Community Engagement;
- Responsibility;
- Campaigns; and
- Infrastructure.

Success in combating litter and illegal waste is not an easy task for municipalities. It is recommended that follow-up litter audits be completed to assess the success of litter abatement practices and City-wide litter and SUI diversion programs.

## 7.1

### Focus for Campaigns and Education

The City has several programs and initiatives in place to reduce litter. Currently, the City is implementing and starting to enforce a Single Use-Item bylaws. During the 2017 street litter audits it was determined that 20% of large litter observed was cups. Progressive reduction has been noted in this category as 13% of the large litter was observed in 2018, 12% in 2019 and 10% in 2020. However, an increase in cups was observed in 2021 (12%) and 2022 (11%). Continuing to target key litter groups, such as single-use items should positively impact litter abatement within the City.

Should the City create more of a targeted approach to litter abatement it is recommended that the campaigns focus on these small litter categories:

- Chewing gum; and
- Cigarette butts/debris.

We noted in 2022 of the 1,132 pieces of large litter audits, 10% were PPE and other medical waste items (disposal masks, gloves and disinfecting wipes. This is an increase from the percentage of PPE and other medical waste items observed in the 2020 audit (5%) and 2021 audit (9%). Medical waste continues to be an unfortunate result of the pandemic and continued proper disposal should be encouraged and advertised. Single-use items accounted for 35% of the total large litter observed in 2022, slightly higher than in 2021 (33%) and 2020 (27%). Targeted litter campaigns on large litter items (including all SUIs) are also recommended that focus on:

- Cups;
- Straws; and
- Take out extras with a focus on straws and utensils.

The City notes it costs taxpayers \$2.5 million a year for the City to collect disposable cups and takeout containers from public waste bins and litter. Focusing campaigns and educational outreach on targeted items, and possibly in specific areas of the City noted for high litter accumulation, could decrease the requirement for litter management within these areas.

# Appendix A

## *Summary of Annual Changes to Audit Methodology*

# Summary of Changes to Audit Methodology



Since the 2015 baseline assessment, additional sites and material categories have been included in the follow-up audits. These changes are detailed in the table below. Additional modifications and unique conditions that may impact the year to year audits have also been detailed.

Year	Site Modification	Large Litter Category Modifications	Small Litter Category Modifications	Additional Modifications and Unique Conditions
<b>2015 (baseline)</b>	<ul style="list-style-type: none"> <li>- 108 sites assessed.</li> <li>- 19 supersites assessed.</li> <li>- Sites 29 and 99 removed from audits due to lack of access.</li> </ul>	<ul style="list-style-type: none"> <li>- 15 large litter categories.</li> <li>- 120 large litter subcategories.</li> </ul>	<ul style="list-style-type: none"> <li>- 24 small litter categories.</li> </ul>	
<b>2017</b>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>
<b>2018</b>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>
<b>2019</b>	<ul style="list-style-type: none"> <li>- Two new sites added to include the Marpole neighbourhood (sites 111 and 112).</li> <li>- 110 sites assessed.</li> <li>- 19 supersites assessed.</li> </ul>	<ul style="list-style-type: none"> <li>- Two new large litter sub-categories were added to the “Take out Extras” category (straws and stir-sticks).</li> <li>- 15 large litter categories.</li> <li>- 122 large litter subcategories.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>
<b>2020</b>	<ul style="list-style-type: none"> <li>-14 sites added into overall analysis (Sites 113 to 126).</li> <li>- One additional supersite (Site 65) assessed.</li> <li>- 124 sites assessed.</li> <li>- 20 supersites assessed.</li> </ul>	<ul style="list-style-type: none"> <li>- Medical waste added to large litter category (includes the following sub-categories: disposable gloves, masks and disinfecting wipes).</li> <li>- 16 large litter categories.</li> <li>- 125 large litter subcategories.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- COVID-19.</li> <li>- Cleanliness Index (CI) ranking used as a visual ranking of site.</li> </ul>
<b>2021</b>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- No changes.</li> </ul>	<ul style="list-style-type: none"> <li>- Vaping and vaping equipment added.</li> <li>- 26 small litter categories.</li> </ul>	<ul style="list-style-type: none"> <li>- COVID-19.</li> <li>- Cleanliness Index (CI) ranking used as a visual ranking.</li> </ul>

<b>Year</b>	<b>Site Modification</b>	<b>Large Litter Category Modifications</b>	<b>Small Litter Category Modifications</b>	<b>Additional Modifications and Unique Conditions</b>
<b>2022</b>	-123 sites assessed - Site 110 removed from audit this year due to lack of access.	-No changes.	- No changes.	- COVID-19. - Cleanliness Index (CI) ranking used as a visual ranking.

# Appendix B

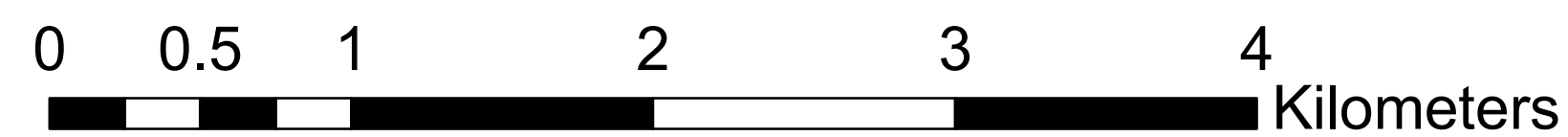
## *Site Distribution Maps and Litter Hot Spots*





### Legend

- Proposed Litter Sites
- 2020 Additional Site
- Railways
- Arterial
- Secondary Arterial
- Collector
- Residential
- Park
- Bridge
- Bikeways
- Parks
- ▭ Neighbourhoods
- ▭ BIA
- ▭ Shoreline



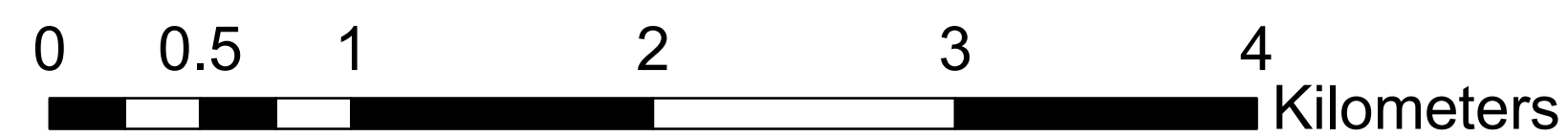




# Top 10 Large Litter Sites

## Legend

- Proposed Litter Sites
- 2020 Additional Site
- Railways
- Arterial
- Secondary Arterial
- Collector
- Residential
- Park
- Bridge
- Bikeways
- Parks
- ▭ Neighbourhoods
- ▭ BIA
- ▭ Shoreline



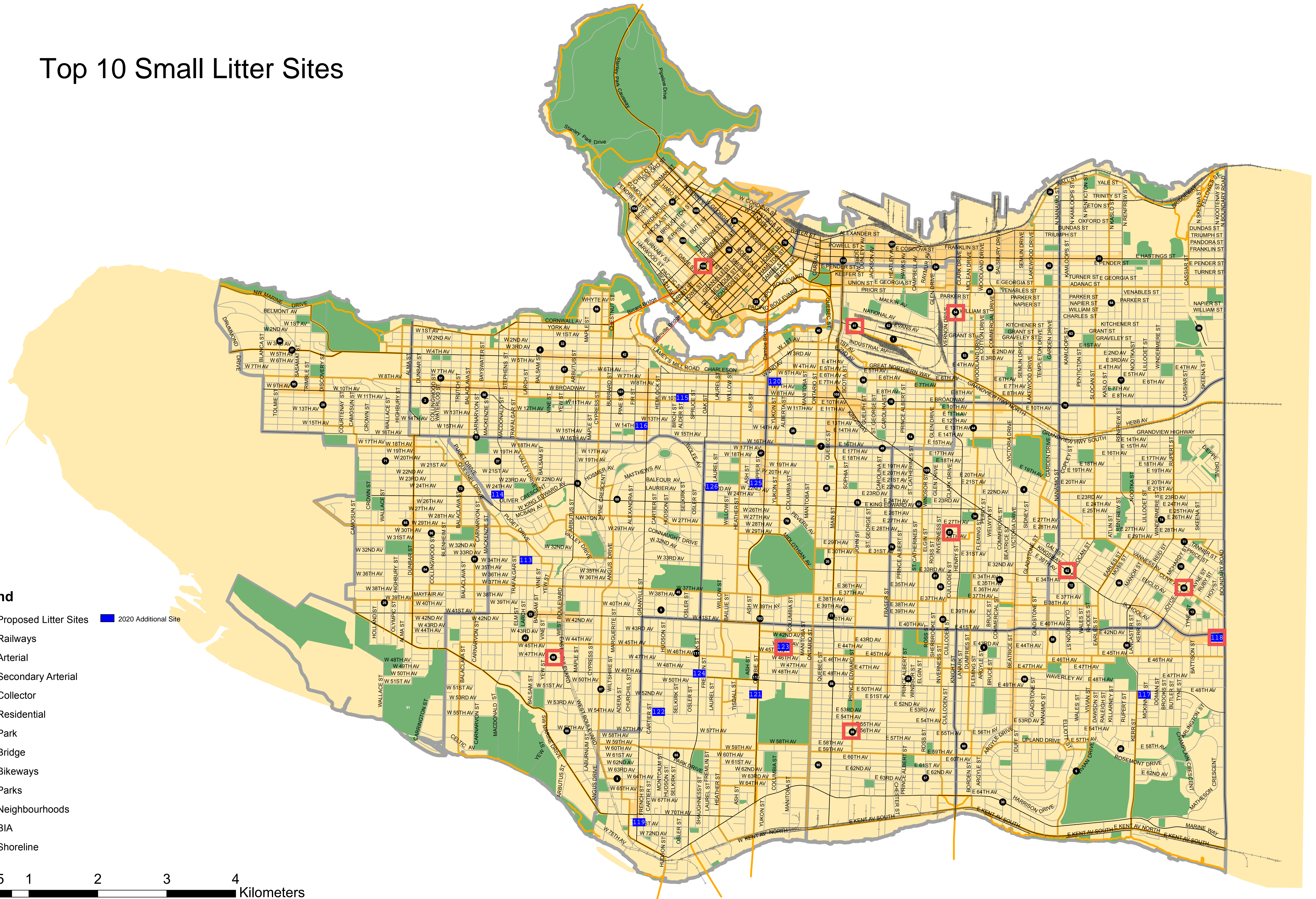
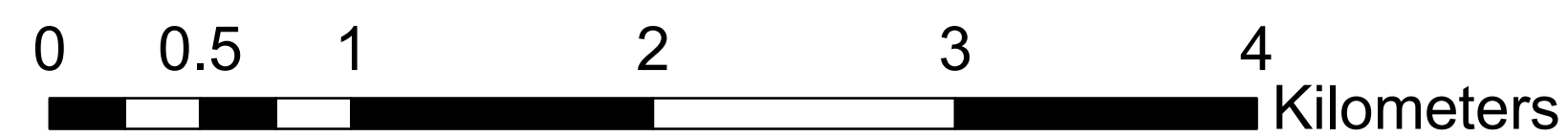




# Top 10 Small Litter Sites

## Legend

- Proposed Litter Sites
- 2020 Additional Site
- Railways
- Arterial
- Secondary Arterial
- Collector
- Residential
- Park
- Bridge
- Bikeways
- Parks
- ▭ Neighbourhoods
- ▭ BIA
- ▭ Shoreline



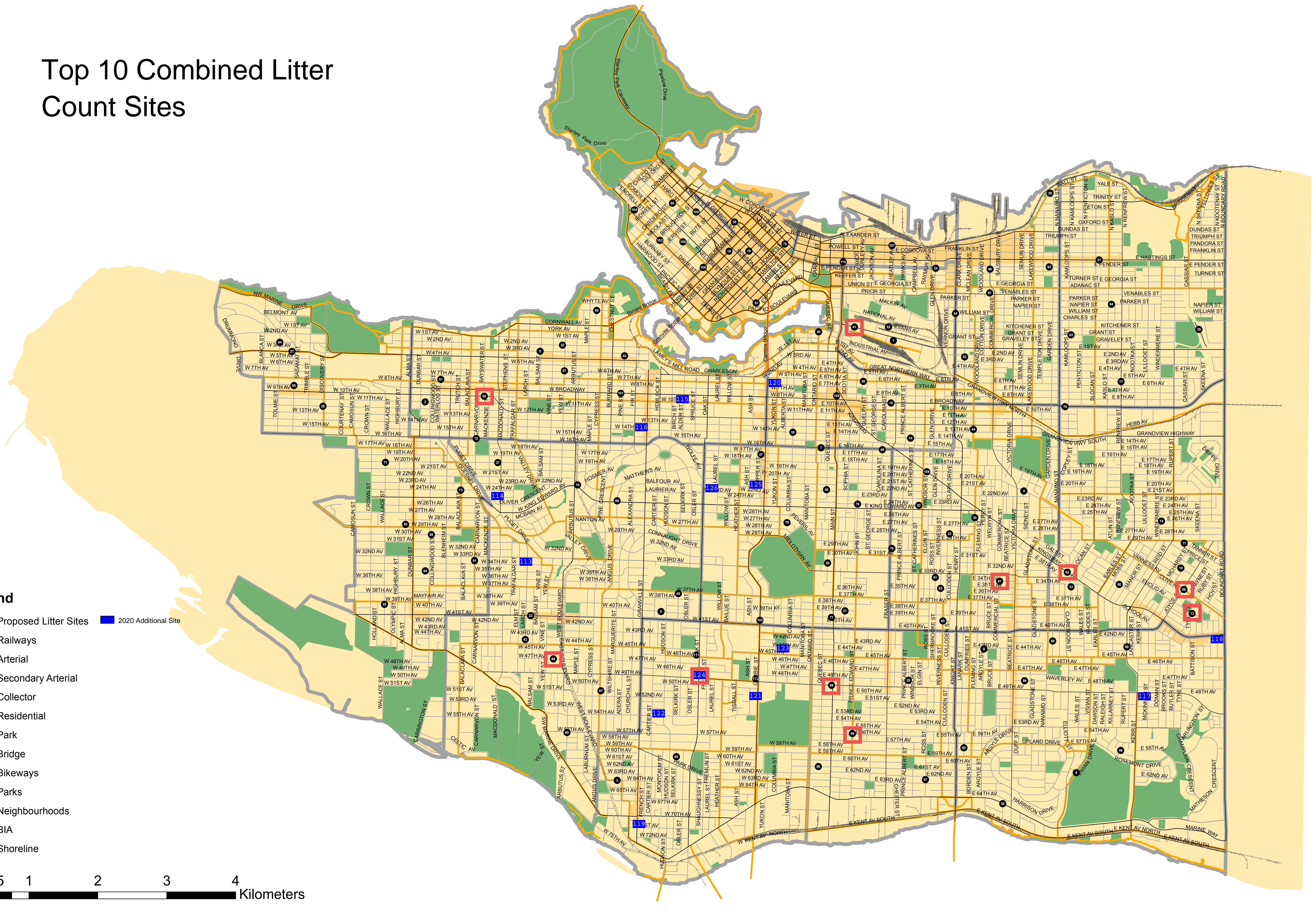
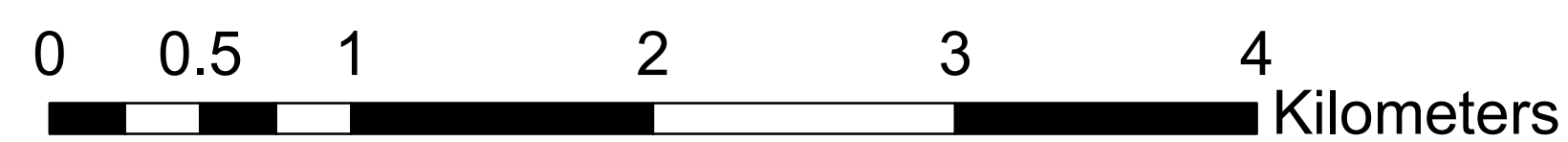




# Top 10 Combined Litter Count Sites

## Legend

- Proposed Litter Sites
- 2020 Additional Site
- Railways
- Arterial
- Secondary Arterial
- Collector
- Residential
- Park
- Bridge
- Bikeways
- Parks
- ▭ Neighbourhoods
- ▭ BIA
- ▭ Shoreline





# Appendix C

## *Detailed Methodology*

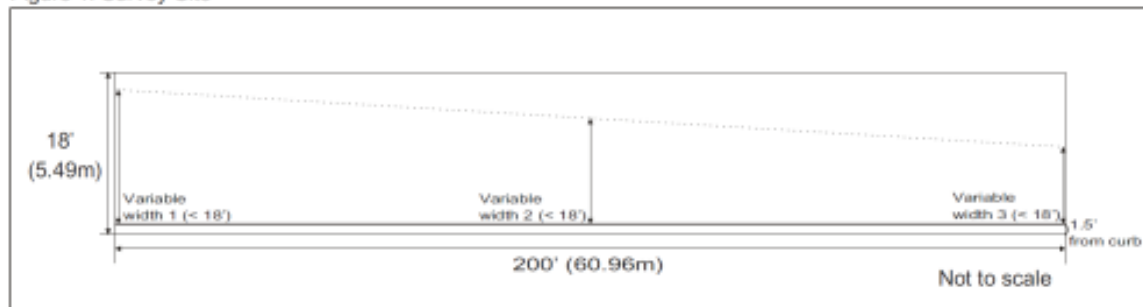
## Conducting the Litter Audit

Audit area at the sites should be the same size. Audit Areas are to be 200 feet x 18 feet. These full-sized audit areas are termed “fixed” sites. The site width may be less than 18 feet in some cases, such as when in commercial areas the storefront is set back less than the prescribed distance. In these cases, each site should be 200 feet in length by the width available (<18 feet), which will be recorded. These sites are termed “variable” sites.

Beginning at the front of the parked car or the start of the site, the team shall use a measuring device to measure 50 feet ahead of the start of the site. Using street marking paint (water based to dissolve) or some other temporary marking method (e.g., chalk, pylons), a mark should be made on the pavement ahead to denote the starting point of the audit site. From this point the team will measure 100 feet, marking the roadway with another identifier to show the mid-point of the site. A final measurement of an additional 100 feet denotes the end of the audit site. As mentioned above, each site is to be 200 feet in length.

The width measurement shall be taken at the start, midpoint and end of the site. The width of the site should be measured 1.5 feet from inside the curb or the start of the pavement, towards the outer edge of the site, up to a maximum width of 18 feet and marked to indicate the boundary. This rule is set to include 1.5 feet into the street since curbs are normal catchment structures, for which the City is responsible for litter clean up. Refer to **Figure 1** below depicting the audit site setup.

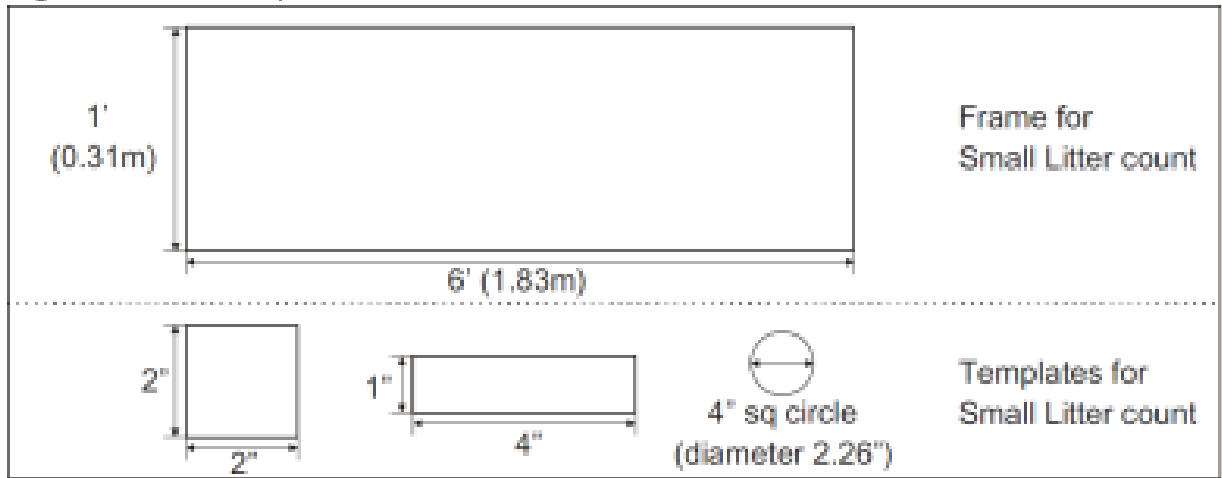
Figure 1: Survey Site



## Classification of Large Litter

For purposes of classifying litter, and in accordance with the methods used in previous litter surveys, large litter is defined as being greater than 4 square inches in size. To assist the field teams with determining the litter sizes, each audit team will be provided with three templates of 4 square inches in rectangle, square and round shape form. Refer to **Figure 2** depicting diagrams of the litter templates. At each site location this litter audit will observe and document large litter in 16 categories and 125 sub-categories.

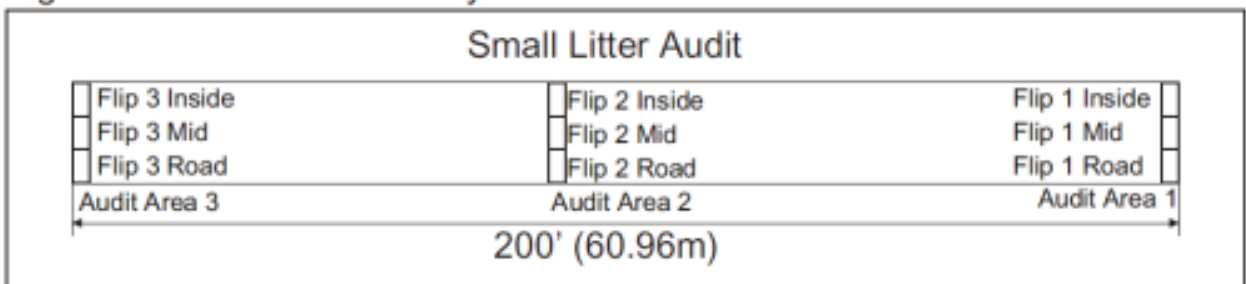
Figure 2: Litter Templates










## Classification of Small Litter and Supersites










Small litter is defined as those pieces of debris that are less than 4 square inches in size. It is classified under 28 categories. The small litter audit involves examining three segments, or slices taken through the audit site. A frame shall be constructed for each audit team, using ½ inch PVC plastic tubing (or a similar material) to act as the template. This frame shall measure 1 foot wide and 6 feet long. Three successive “flips” of the frame will complete crossing the site to the 18-foot boundary of the site. The litter auditor will observe and count all the small litter contained within the frames at three locations within each site: at the start, mid-point and end of the site. At each segment three flips of the frame will be analyzed, thus surveying a total of 18 square feet segment for a total of 54 square feet of the entire site. See **Figure 3** for a depiction of the site setup for the small litter survey. The Site Surveyor Form – Small Litter Count Sheet will be used to record the findings for each site. All small litter within supersites is to be observed, counted and classified as per the small litter categories outlined.

Figure 3: Small Litter Site Layout



# Cleanliness Index

Cleanliness Rating	Evaluation Meaning	Photographic Example	Cleaning Effort by One Person	Equipment Needed
<b>1</b>	The site appears clean, <u>no noticeable litter</u> or very little		 <ul style="list-style-type: none"> <li>• Minor to no effort cleaning</li> <li>• Requires less than 10 minutes cleanup</li> </ul>	 <p>Litter, if any, would fit in a sandwich-sized Ziploc bag</p> <p>OR</p> <p>No equipment needed</p>
<b>2</b>	The site has <u>noticeable litter</u> in certain areas		 <ul style="list-style-type: none"> <li>• Minor cleaning</li> <li>• Requires 10-30 minutes of cleanup</li> </ul>	 <p>Litter picker</p>  <p>Litter would fit in a plastic grocery bag</p>

Cleanliness Rating	Evaluation Meaning	Photographic Example	Cleaning Effort by One Person	Equipment Needed
<p style="font-size: 2em; color: #00728f; font-weight: bold;">3</p>	<p>The site has <u>consistent noticeable litter</u> or a large item or a concentrated pile of garbage/litter</p>		<div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>Major cleaning</li> <li>Requires 30-60 minutes of cleanup</li> </ul>	<div style="text-align: center;">  <p>Litter picker</p>  <p>Broom/rake</p>  <p>Litter would fit in a big garbage bag</p> </div>
<p style="font-size: 2em; color: #e31a1c; font-weight: bold;">4</p>	<p>The site may require more than one person for cleaning, <u>requires City attention</u></p>		<div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>Requires more than one person</li> <li>Requires City attention</li> </ul>	<div style="text-align: center;">  <p>Flatbed pickup truck</p> <p>OR</p>  <p>Rear loader packer</p> </div>



# Large Litter Material Category Examples

Below are examples for large litter materials categories that are more ambiguous or encompass several items.

## Home Article Photos





Misc. Cardboard Photos



Misc. Paper Photos



Home Plastic Photos





# Appendix D

## *Site Location Details*

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass HL (inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
1	730	Terminal Avenue	700	21/09/2022	9:44	9:52	A	N	14	14	14	MAJOR	5	Y	COMMERCIAL	<3"	N		N	Y	Y	N	N	N	CURB, GRASS LINE, TREE LINE	2	Y	Two staffs cleaned up the site, picked up garbage	N	CO
2	3550	West 11th Ave	3500	19/09/2022	13:37	13:54	A	N	14.5	14.5	14.5	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
3	1629	West 64th Avenue	1600	20/09/2022	8:30	8:45	B	N	14	13	13	MINOR	4	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N	Take (3-4 ft) plant/patch along Section 2	N	SF
4	2055	Stainsbury Avenue	2000	22/09/2022	15:05	15:25	A	N	11	12	13	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE LINE	3	N		N	SF
5	5400	Cartier Street	5400	21/09/2022	10:23	10:32	B	N	8	8	8	MINOR	2	N	RESIDENTIAL, INSTITUTIONAL	3" - 6"	N		N	Y	N	N	Y	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N	TRAFFIC CALMING DEVICE - HUMPS	N	INST
6	7683	Vivian Drive	7600	22/09/2022	15:56	16:03	B	N	6	6	6	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	N	N	N	N	CURB, GRASS LINE	2	N	Fraser golf course along south side of street (Vivian Dr)	N	SF
7	50	East 16th Avenue	0	21/09/2022	2:20	2:29	A	N	16	18	16	MAJOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	HEDGE, GRASS LINE	2	N		N	MF
8	2416	West 3rd Avenue	2400	19/09/2022	11:23	11:33	A	N	11	11	11	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	CURB, GRASS LINE	2	Y		N	MF
9	5916	Argyle Street	5900	22/09/2022	14:32	14:43	B	N	18	16	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
10	3419	Wellington Avenue	3400	22/09/2022	16:27	16:37	A	N	14	13.5	14	MAJOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, CURB, GRASS LINE, TREE LINE	2	Y	Talked to the local residence, they said "lots of masks coming from the bus stop"	N	SF
11	3402	East 29th Avenue	3400	22/09/2022	15:58	16:10	A	Y	18	18	18	MAJOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE LINE	3	N	Talked to 1 member of the public. Likes that we are doing this. Concerned about dog poop and mask litter.	N	SF
12	5036	Slocan Street	5000	22/09/2022	11:11	11:22	B	N	18	18	16	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	3	N	CATCH POINT - TEMPORARY FENCE ALONG SECTION 2	N	SF
13	3547	Euclid Avenue	3500	22/09/2022	16:47	16:56	B	N	18	16	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	3	N		N	MF
14	846	East 14th Avenue	800	21/09/2022	15:45	15:58	A	N	14	16.5	14.5	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
15	636	East Broadway	600	21/09/2022	16:13	16:21	A	N	18	18	14.5	MAJOR	6	Y	COMMERCIAL, RESIDENTIAL	N/A	Y	SUBWAY	Y	Y	Y	N	Y	Y	CURB, TREE LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN	N	MIX

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
16	3890	East Boulevard	3800	19/09/2022	9:37	9:47	B	N	15	13	10	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	SF
17	2130	Renfrew	2000	22-09-2022	13:25	13:32	A	N	11	11	11	MAJOR	4	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	Y	CURB, GRASS LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN	N	SF
18	845	Hornby Street	800	20/09/2022	9:01	9:12	A	N	12.5	12.5	12.5	MAJOR	2	N	COMMERCIAL, RESIDENTIAL	N/A	N		Y	Y	N	N	N	N	CURB, TREE LINE	2	Y		N	CO
19	725	Granville Street	700	20/09/2022	9:22	9:31	A	Y	18	18	18	MAJOR	2	N	COMMERCIAL	N/A	Y	FATBURGER	Y	Y	Y	Y	N	Y	CURB	1	Y		N	CO
20	4838	Quebec Street	4800	21/09/2022	13:26		B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
21	304	East 39th Avenue	300	21/09/2022	12:16	12:34	B	N	18	18	16	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
22	2431	West 41st Avenue	2400	19/09/2022	15:05	15:36	B	N	18	11	8	MAJOR	4	N	COMMERCIAL, RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, TREE LINE, OTHER	2	N	LOCAL RESTURANTS + COMMERCIAL ESTABLISHMENTS, CATCH POINT - OVER GROWN WEEDS PATCHES; 2 TREES ALONG SITE; 3 FT OF HEDGE FIN ENL PT	N	CO
23	1287	East 28th Avenue	1200	22/09/2022	9:48	10:00	B	N	16	15	17	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
24	500	Glen Drive	500	20/09/2022	15:37	15:45	A	N	9	9	9	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
25	5537	Wallace Street	5500	19/09/2022	13:25	13:37	B	N	15	16	16	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
26	2355	Wall Street	2000	22/09/2022	8:22	8:40	A	N	12	12	12	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	Y	N	FENCE, HEDGE, GRASS LINE, TREE LINE	2	N	TRAFFICE CALMING DEVICE - BUMPER	N	MF
27	4505	West 4th Avenue	4500	19/09/2022	15:07		A	N	18	9.5	8.5	MAJOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	Y	N	N	FENCE, HEDGE, CURB, GRASS LINE	2	N		N	SF
28	4304	West 12th Avenue	4300	19/09/2022	14:26	14:37	A	N	18	18	16.5	MINOR	2	Y	RESIDENTIAL	<3"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
30	8303	Beatrice Street	8300	22/09/2022	15:35	15:46	B	N	6	6	6	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	HEDGE, CURB, GRASS LINE, OTHER	1	N	CATCH POINT - FEW GARDEN PATCHES IN SECTION 3, NO CURB (SHALLOW DITCH) ALONG SECTION 2 TO 3	N	SF

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
31	2720	East Hastings Street	2700	22/09/2022	9:00	9:25	A	N	14.5	14	14	MAJOR	6	N	COMMERCIAL, RESIDENTIAL	>6"	N		N	Y	Y	Y	N	Y	CURB, GRASS LINE, TREE LINE	2	N	LITTER BIN DETAILS - GARBAGE BIN; CONSTRUCTION ACROSS THE STREET	Y	CO
32	1817	Yew Street	1800	19/09/2022	10:59	11:13	A	N	15.5	15	15.5	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	CURB, GRASS LINE, TREE LINE	2	N		N	MF
33	990	Beatty Street	900	20/09/2022	13:46	13:58	A	N	10.5	16.5	16.5	MAJOR	2	N	COMMERCIAL, RESIDENTIAL, PARKLAND	<3"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE LINE	2	N		N	MF
34	4150	Knight Street	4100	22/09/2022	14:49	14:57	A	Y	11	11	11	MAJOR	6	Y	RESIDENTIAL, PARKLAND	3" - 6"	N		N	Y	Y	N	N	Y	FENCE, GRASS LINE, TREE LINE	2	N	GARBAGE BIN NEAR E KING EDWARD/KNIGHT INTERSECTION	N	SF
35	197	West 14th Avenue	100	21/09/2022	13:57	14:03	A	N	14	18	14	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
36	2222	Prince Edward Street	2200	21/09/2022	16:36	16:45	A	N	18	14.5	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	HEDGE, GRASS LINE, TREE LINE	2	N		N	MF
37	2822	West 20th Avenue	2800	19/09/2022	10:40	10:53	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
38	1025	West Georgia Street	1000	20/09/2022	10:15	10:37	A	N	17	18	18	MAJOR	6	N	COMMERCIAL, INSTITUTIONAL	N/A	Y	MCDONALDS	N	Y	Y	Y	N	Y	CURB, TREE LINE	2	Y	LITTER BIN DETAILS - 2 GARBAGE BINS	N	CO
39	1465	Kootenay Street	1000	22/09/2022	12:56	13:03	A	N	12	12	12	MINOR	2	N	COMMERCIAL, INDUSTRIAL	<3"	Y	BOSA FOODS	N	N	N	N	N	N	HEDGE, CURB, GRASS LINE	1	N		N	IN
40	43	East 1st Avenue	0	21/09/2022	11:19	11:30	A	N	15.5	14	14	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	HEDGE, GRASS LINE, TREE LINE	2	N		N	MF
41	306	Terminal Avenue	300	21/09/2022	10:08	10:37	A	N	18	12	18	MAJOR	6	Y	COMMERCIAL	>6"	Y	TIM HORTONS	N	Y	Y	N	N	N	FENCE, CURB, GRASS LINE, TREE LINE	3	N		N	CO
42	1718	West 3rd Avenue	1700	19/09/2022	10:02	10:21	A	Y	18	18	18	MINOR	2	N	COMMERCIAL	<3"	N		N	Y	N	N	N	N	CURB, GRASS LINE, TREE LINE	2	N		N	CO
43	6040	Larch Street	6000	19/09/2022	15:45	15:54	B	N	18	15	18	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	Y	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	1	N	MIDDLE SECTION FILLED WITH OVERGROWN PLANTS; CANNOT LAY DOWN TEMPLATE	N	SF
44	2837	Woodland Drive	2800	22/09/2022	14:10	14:19	A	N	13.5	13.5	13.5	MINOR	2	Y	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	3	N		N	SF
45	1218	West 37th Avenue	1200	21/09/2022	10:39	10:46	B	N	16	14	14	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type	
46	3003	East 59th Avenue	3000	22/09/2022	16:12	16:18	B	N	12	16	17	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	1	N	LIGHT POST ALONG SECTION 1	N	SF	
47	556	West 17th Avenue	500	21/09/2022	12:51	13:08	A	N	16	18	17	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N		Y	SF	
48	3789	Quebec Street	3700	21/09/2022	15:04	15:17	B	y	18	18	18	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N		N	SF	
49	3205	Carolina Street	3200	21/09/2022	14:45	14:54	A	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	2	N		N	SF	
50	2941	West 10th Avenue	2900	19/09/2022	12:10	12:29	A	N	18	18	17	MINOR	2	N	RESIDENTIAL	>6"	N		N	N	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	3	N		N	SF	
51	3405	West 8th Avenue	3400	19/09/2022	14:04	14:12	A	N	11	9	6	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE	2	N		N	SF	
52	620	Evans Street	600	21/09/2022	9:17	9:30	A	N	14	11	14.5	MINOR	2	N	COMMERCIAL , INDUSTRIAL, PARKLAND	3" - 6"	N		N	N	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	2	N	MOST ITEMS ARE BY THE CURB	N	IN	
53	1835	McLean Drive	1800	21/09/2022	8:36	8:53	A	N	18	18	17	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	CURB, GRASS LINE, TREE	3	N		N	MF	
54	1140	Clark Drive	1100	21/09/2022	8:09	8:28	A	N	10.5	10.5	12	MAJOR	6	N	COMMERCIAL	>6"	N		N	Y	Y	Y	N	Y	HEDGE, CURB, GRASS LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN	N	IN	
55	3438	Vanness Avenue	3400	22/09/2022	12:13	12:42	B	N	11	18	15	MINOR	4	N	COMMERCIAL , RESIDENTIAL	<3"	Y	A&W	N	Y	Y	N	N	N	Y	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	3	N	LITTER BIN DETAILS - SORT-BINS WITH TRAIN STATION AND BUS STOP; CATCH POINT - LIGHT POSTS; JOYCE COLLINGWOOD TRAIN STATION	N	MF
56	2965	Horley Street	2900	22/09/2022	12:58	13:19	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	2	N		N	MF	
57	7808	Ross Street	7800	20/09/2022	10:49	11:02	B	N	17	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	2	N		N	SF	
58	5780	Berkeley Street	5700	22/09/2022	13:57	14:08	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N	CATCH POINT - ELECTRIC POST	N	SF	
59	395	East 56th Avenue	300	20/09/2022	11:52	12:15	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N	LITTER WOULD FIT IN A PLASTIC GROCERY BAG	N	SF	
60	7288	Dumfries Street	7200	22/09/2022	14:50	15:04	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	CURB, GRASS LINE, TREE	2	N		N	SF	



Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass HL (inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
61	5002	Commercial Street	5000	22/06/2022	10:19	10:31	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N	CATCH POINT - LIGHT POST AND ELECTRIC POST	N	SF
62	2400	Kingsway	2400	22/09/2022	10:41	11:02	B	N	18	16	11	MAJOR	6	Y	COMMERCIAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	3	N	CATCH POINT - LIGHT POSTS; MOTEL (2400 COURT MOTEL) ALONG AREA	N	CO
63	1506	Kamloops Street	1500	20/09/2022	11:38	11:47	A	N	15.5	15.5	15.5	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N	CONSTRUCTION: 1516 KAMLOOPS STREET	Y	SF
64	2880	Venables Street	2800	22/09/2022	11:58	12:07	A	Y	18	18	18	MINOR	2	N	RESIDENTIAL, INDUSTRIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	INST
65	7596	Selkirk Street	7500	20/09/2022	9:02	9:27	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N	STARTED AT 7598 SELKIRK ST	N	SF
66	1304	Walnut Street	1300	19/09/2022	10:35	10:44	A	N	15	15	14	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	SF
67	2134	Yew Street	2100	19/09/2022	11:46	11:55	A	N	14	15.5	15	MINOR	2	Y	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N		N	MF
68	2138	West 47th Avenue	2100	19/09/2022	16:09	16:27	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N		N	SF
69	3998	Marguerite Street	2500	19/09/2022	9:06	9:27	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	SF
70	2455	East Broadway	2400	22/09/2022	13:46	13:54	A	N	15	17	17	MAJOR	6	Y	RESIDENTIAL	<3"	N		N	Y	Y	Y	N	N	HEDGE, CURB, GRASS LINE	2	Y		N	MIX
71	3906	West 20th Avenue	3900	19/09/2022	11:35	11:47	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	SF
72	3021	West 16th Avenue	3200	19/09/2022	13:07	13:22	A	N	13	15	14	MAJOR	4	Y	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	Y		N	SF
73	3205	West 24th Avenue	3200	19/09/2022	11:05	11:23	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	1	N		N	SF
74	3212	East 26th Avenue	3200	22/09/2022	15:46	15:51	A	Y	18	18	18	MINOR	2	N	RESIDENTIAL, INSTITUTIONAL	3" - 6"	N		N	Y	N	N	Y	N	FENCE, HEDGE, CURB, GRASS LINE	1	N	TRAFFIC CALMING DEVICE - SPEED BUMPS	N	SF
75	420	Homer Street	400	20/09/2022	14:16	14:26	A	N	15.5	15.5	15.5	MINOR	2	N	COMMERCIAL, PARKLAND	N/A	N		N	Y	Y	Y	N	Y	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	3	Y	LITTER BIN DETAILS - GARBAGE BIN	N	CO

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
76	710	East 30th Avenue	700	21/09/2022	13:40	13:54	B	N	13	10	11	MINOR	2	N	COMMERCIAL , RESIDENTIAL	3" - 6"	N		Y	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N	CONVENIENCE STORE- SHOPPERS DRUG MART	N	MIX
77	5599	Main Street	5500	21/09/2022	11:22	11:49	B	N	7	8	17	MAJOR	6	N	RESIDENTIAL	N/A	N		N	Y	Y	Y	N	Y	FENCE, HEDGE, CURB, TREE LINE	3	N	LITTER BIN DETAILS - MIX TRASH BIN @ BUS STOP; CATCH POINT - PATH OF OVERGROWN WEEDS ALONG SECTION 2 BY THE LIGHT POST	N	SF
78	3949	Prince Edward Street	3900	21/09/2022	14:02	14:14	B	N	14	18	17	MINOR	2	N	RESIDENTIAL, INSTITUTIONAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
79	286	Talisman Avenue	200	21/09/2022	16:30	16:44	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
80	1610	Haro Street	1600	20/09/2022	11:15	11:36	A	N	15.5	15	12.5	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	2	N	PROPERTY MANAGER TALKED TO US ABOUT DOG POP ISSUES AND LITTER FROM BC HOUSING APARTMENTS	N	MF
81	4938	Sherbrooke Street	4900	22/09/2022	9:11	9:41	B	N	12	12	11	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	3	N	CATCH POINT - TEMPORARY WRIE FENCES ALONG SECTION 2; ADDITIONAL NOTES - HOUSE CONSTRUCTION ALONG SECTION 2	Y	SF
82	957	East 24th Avenue	900	21/09/2022	14:27	14:44	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	CURB, GRASS LINE, TREE LINE	2	N		N	SF
83	5569	Inverness Street	5500	22/09/2022	8:25	8:39	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	2	N	STARTED AT ADDRESS HEADED EAST	N	SF
84	3522	West 35th Avenue	3500	19/09/2022	13:45	14:02	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
85	3707	West 29th Avenue	3700	19/09/2022	11:55	12:10	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	Y	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N	TRAFFICE CALMING DEVICE - HUMPS	N	SF
86	3483	West 30th Avenue	3400	19/09/2022	12:20	12:40	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		Y	SF
87	6692	Angus Drive	6600	21/09/2022	8:30	8:42	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	N	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N	CATCH POINT - OVERGRON WEEDS TOWARDS SECTION 3 (MORE THAN 6")	N	SF
88	2104	West 57th Avenue	2100	21/09/2022	8:00	8:11	B	N	11	8	11	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N		N	SF
89	6507	Main Street	6500	20/09/2022	12:26	12:50	B	N	18	18	12	MAJOR	4	N	COMMERCIAL , RESIDENTIAL	3" - 6"	Y	TIM HORTONS	N	Y	Y	Y	N	Y	CURB, TREE LINE	2	N	LITTER BIN DETAILS - 3 WASTE BINS ALONG SITE (NON-SORTING BINS; MIXED WASTE BINS); ADDITIONAL NOTES - STARTED FROM 6501 MAIN ST; SMALL GRASS PATCHES	N	CO

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type	
90	81	East 61st Avenue	0	20/09/2022	10:00	10:14	B	N	8	8	8	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	1	N	NO CURB ACCESS DUE TO CONSTRUCTION	Y	SF	
91	2995	West 34th Avenue	2900	19/09/2022	14:15	14:30	B	N	18	16	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N		N	SF	
92	2255	East Pender Street	2200	22/09/2022	9:52	10:02	A	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N		N	SF	
93	1225	East 35th Avenue	1200	22/09/2022	8:53	9:04	B	N	11	12	13	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE	2	N	CATCH POINT - 2 ELECTRIC POSTS INSIDE QUADRANT, ONE TREE ADJACENT TO THE QUADRANT	N	SF	
94	1875	Toimie Street	1800	19/09/2022	15:43	15:50	A	N	18	18	15	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	1	N		N	SF	
95	4494	West 9th Avenue	4900	19/09/2022	14:46	14:57	A	N	14.5	12.5	15	MINOR	2	N	RESIDENTIAL	>6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	2	N		N	SF	
96	1710	East Pender Street	1000	21/09/2022	10:17	10:26	A	N	18	13	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	3	N		N	MIX	
97	841	Commercial Drive	800	22/09/2022	10:50	11:15	A	N	13.5	12	3	MINOR	2	N	COMMERCIAL	>6"	N		Y	Y	N	N	N	N	FENCE, CURB, GRASS LINE, TREE	3	N		Y	MIX	
98	2994	East 43rd Avenue	2900	22/09/2022	13:36		B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	N		N	SF	
100	1215	Comox Street	1200	20/09/2022	13:04	13:16	A	N	15	4.5	14.5	MINOR	4	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE	2	Y		N	MF	
101	1727	West Broadway	1700	19/09/2022	8:50	9:11	A	Y	18	18	18	MAJOR	6	N	COMMERCIAL	N/A	N		N	Y	Y	Y	Y	N	Y	CURB	2	N		N	CO
102	5655	Cambie Street	5600	21/09/2022	9:50	10:04	B	Y	18	18	18	MAJOR	6	Y	COMMERCIAL	N/A	N		Y	Y	Y	N	N	Y	HEDGE, CURB	2	N	LITTER BIN DETAILS - MIX TRASH BIN @ BUS STOP; ADDITIONAL NOTES - BC LIQUOR STORE ALONG SECTION 3	N	CO	
103	1180	Broughton Street	1100	20/09/2022	12:45	12:52	A	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	CURB, GRASS LINE, TREE	2	Y		N	MF	
104	1193	Denman Street	1100	20/09/2022	7:13	7:38	A	N	13	13	13	MAJOR	4	N	COMMERCIAL	N/A	Y	SEE THE SEA PIZZA PASTA WINGS	Y	Y	Y	Y	N	Y	CURB, TREE LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN	N	CO	
105	1300	Robson Street	1300	20/09/2022	11:00	11:08	A	N	18	13.5	18	MAJOR	2	N	COMMERCIAL, RESIDENTIAL	<3"	Y	TIM HORTONS	Y	Y	Y	N	N	Y	CURB, TREE LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN	N	CO	

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass Ht. (Inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
106	1081	Burrard Street	1000	20/09/2022	8:05	8:34	A	N	18	18	11	MAJOR	6	N	COMMERCIAL , RESIDENTIAL, INSTITUTIONAL	<3"	N		N	Y	Y	N	N	Y	CURB, GRASS LINE, TREE LINE	3	Y	LITTER BIN DETAILS - GARBAGE BIN	N	INST
107	668	Powell Street	600	20/09/2022	15:11	15:25	A	N	12	12	14	MAJOR	2	N	COMMERCIAL , RESIDENTIAL	>6"	N		Y	Y	Y	N	N	Y	CURB, GRASS LINE, TREE LINE	3	N	LITTER BIN DETAILS - GARBAGE BIN	Y	MF
108	2415	Main Street	5600	21/09/2022	11:52	12:21	A	N	12	12.5	13	MAJOR	6	Y	COMMERCIAL	<3"	N		N	Y	Y	Y	N	Y	CURB, GRASS LINE, TREE LINE	3	N	LITTER BIN DETAILS - GARBAGE BIN; ADDITIONAL NOTES - CONSTRUCTION ON 8TH AVE	Y	CO
109	1045	Kingsway	1000	21/09/2022	15:16	15:30	A	N	18	15.5	15	MAJOR	6	N	COMMERCIAL , RESIDENTIAL, PARKLAND	3" - 6"	Y	NENE'S CHICKEN	Y	Y	N	N	N	Y	CURB, GRASS LINE, TREE LINE	2	Y	LITTER BIN DETAILS - GARBAGE BIN; ADDITIONAL NOTES - CONSTRUCTION NEAR 1055 KINGSWAY	Y	CO
110	426	Main Street	400				A	Y	18	18	18	MAJOR	4	N	COMMERCIAL	N/A	N		Y	Y	Y	N	N	N	CURB, OTHER	3	N	Site was not audited in 2022		CO
111	6106	Oak Street	6100	21/09/2022	9:00	9:13	B	N	12	11	11	MAJOR	6	N	RESIDENTIAL	3" - 6"	N		N	Y	Y	Y	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N	STARTED FROM 6190 OAK STREET	N	SF
112	6459	Cambie Street	6400	20/09/2022	13:08	13:23	B	N	18	18	17	MAJOR	6	Y	COMMERCIAL , RESIDENTIAL	>6"	Y	CHATIME	N	Y	Y	N	N	Y	HEDGE, CURB, GRASS LINE, TREE LINE	2	N	LITTER BIN DETAILS - MIX TRASH BINS	N	CO
113	2627	West 34th Avenue	2600	19/09/2022	14:45	14:57	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N	HEADING EAST TOWARDS LARCH ST	N	SF
114	4051	MacDonald Street	4000	19/09/2022	10:01	10:25	B	N	18	18	8	MINOR	4	N	COMMERCIAL , RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	HEDGE, CURB, TREE LINE	2	N	CATCH POINT - TREELINE ABOUT 50% OF LENGTH, HEDGE ABOUT 20% OF LENGTH; ADDITIONAL NOTES - LOCAL RESTURANTS AND BAKERIES WITHIN SITE, BIKE RACKS IN FRONT OF AREA OF LOCAL RECREALIBRARY	N	CO
115	1260	West 10th Avenue	1200	19/09/2022	9:29	9:44	A	N	7	7.5	7.5	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	N	N	CURB, GRASS LINE	2	N		N	MF
116	3001	Fir Street	3000	19/09/2022	8:15	8:38	A	N	13	13	13	MINOR	4	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	FENCE, CURB, GRASS LINE	2	N		N	SF
117	3114	East 49th Avenue	3100	22/09/2022	16:28	16:40	B	N	15	15	13	MAJOR	4	N	COMMERCIAL , RESIDENTIAL	<3"	N		Y	Y	Y	Y	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	2	N	SHELL SELECT CONVENIENCE STORE WITHIN SURVEY AREA, NO TRASH BINS @ BUS STOP	N	CO
118	3588	Kingsway	3500	22/09/2022	16:45	17:12	B	N	16	16	16	MAJOR	6	N	COMMERCIAL , RESIDENTIAL	3" - 6"	Y	POTATO CORNER	Y	Y	Y	Y	N	Y	HEDGE, CURB, TREE LINE	2	N	LITTER BIN DETAILS - MIX TRASH BIN; ADDITIONAL NOTES - GRASS PATCHES ONLY, MOSTLY PAVEMENT, RESTURANTS AND OTHER CONVENIENCE ESTABLISHMENTS, ELECTRIC POSTS ALONG AREA, BIKE RACKS PRESENT	N	CO
119	1510	West 71st Avenue	1500	20/09/2022	7:50	8:11	B	N	11	15	14	MINOR	2	N	COMMERCIAL , RESIDENTIAL	3" - 6"	N		N	Y	Y	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE	2	N	WEST OAK PRESENTATION CENTRE DURING SECTION 1	N	CO
120	7575	Cambie Street	7500	21/09/2022	17:05	17:20	B	Y	18	18	18	MAJOR	6	Y	COMMERCIAL	3" - 6"	N		N	Y	Y	Y	N	Y	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N	LITTER BIN DETAILS - MIX TRASH BIN AT BUS STOP; ADDITIONAL COMMENTS - COMMERCIAL ESTABLISHMENT	N	CO

Site #	Building Number	Street	Hundred Block	Date	Start	End	Team	Fixed	Width 1	Width 2	Width 3	Street Type	Lanes	Divided	Area	Grass HL (inches)	Fast Food	Name of Fast Food	Conv. Store	Stop	Bus Stop within Sight	Bus Stop Within Survey Area	Traffic Calming	Litter Bin	Catch Points	Litter Visual Index	Clean Up	Comments	Construction	City Type
121	649	West 52nd Avenue	600	20/09/2022	13:38	13:50	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	N	N	N	N	N	HEDGE, CURB, GRASS LINE TREE LINE	1	N		N	SF
122	1345	West 55th Avenue	1300	20/09/2022	14:36	14:52	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL	<3"	N		N	Y	N	N	N	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N		N	SF
123	6018	Alberta Street	6000	21/09/2022	9:30	9:39	B	Y	18	18	18	MINOR	2	N	RESIDENTIAL, PARKLAND	3" - 6"	N		N	Y	N	N	Y	N	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	1	N	TRAFFIC CALMING DEVICE - HUMPS	N	MF
124	6525	Oak Street	6500	20/09/2020	14:13	14:26	B	N	18	10	12	MAJOR	4	N	COMMERCIAL, RESIDENTIAL	3" - 6"	Y	TIM HORTONS, SMART SHOP 24/7 WITHIN ESSO GAS STATION	Y	Y	Y	Y	N	Y	FENCE, HEDGE, CURB, GRASS LINE, TREE LINE	2	N	LITTER BIN DETAILS - MIX TRASH BIN IN BUS STOP	N	CO
125	595	West 23rd Avenue	500	21/09/2022	15:29	15:47	B	N	17	18	18	MINOR	2	N	RESIDENTIAL	3" - 6"	N		N	Y	N	N	N	N	HEDGE, CURB, GRASS LINE, TREE LINE, OTHER	2	N		N	SF
126	3880	Oak Street	3800	21/09/2022	16:05	16:18	B	N	10	14	12	MAJOR	6	N	COMMERCIAL	>6"	N		N	Y	Y	N	N	N	FENCE, CURB	1	N	CATCH POINT - GRASS PATCHES, MOSTLY PAVEMENT; ADDITIONAL COMMENTS - RESTURANTS AND OTHER COMMERCIAL ESTABLISHMENTS	N	CO

# Appendix E

## *Field Forms*

### Site Surveyor Form

Site ID Number: \_\_\_\_\_ Site Name: \_\_\_\_\_

Site Description (Hundred block, street, side of street, etc)

Hundred Block: \_\_\_\_\_ Street Name: \_\_\_\_\_ Side of Street (NSEW) \_\_\_\_\_

Date: \_\_\_\_\_(DD/MM/YYYY) Start Time: \_\_\_\_\_(AM/PM) End Time: \_\_\_\_\_(AM/PM)

Team ID \_\_\_\_\_ Surveyors Names: \_\_\_\_\_

Site type:  Fixed  Variable Site length: Always 200 feet long

If variable:

Width 1 - Start: \_\_\_\_\_ft. (up to 18ft.)

Width 2 - Middle: \_\_\_\_\_ft. (up to 18ft.)

Width 3 - End: \_\_\_\_\_ft. (up to 18ft.)

Street Type (check one):  Major City Street  Minor City Street  Laneway

Number of Lanes:  2  4  6  Other (explain): \_\_\_\_\_

Is the roadway divided: Y / N

Area Attributes:

(Check all that apply):  Commercial  Residential  Industrial  Parkland  Institutional

Grass Height (Check one):  N/A  < 3"  3" – 6"  Over 6"

Fast Food:	Name of Fast food facility:	Convenience Store:	Stop sign or Traffic light:	Bus stop within sight:	Bus stop within Survey Area:
Y / N		Y / N	Y / N	Y / N	Y / N

Traffic Calming Device within survey area? (Median budge etc.): Y / N

If yes, then describe \_\_\_\_\_

City street/park litter bin within 50 meter radius of site boundary: Y / N

City street/park litter bin details: \_\_\_\_\_

Catch point:  fence  hedge  curb  grass line  tree line  other (explain in details)

Details: \_\_\_\_\_

Visual rating of site (refer to cleanliness index) \_\_\_\_\_ Number of Photos taken: \_\_\_\_\_

Evidence of litter cleanup: Y / N

Cleanup details: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

Is the Site Immediately Adjacent to Construction? Y / N





Site ID

	Pass 1	Total	Pass 2	Total	Brand Names Observed
<b>BEVERAGE CONTAINERS</b>					
Beer Cans					
Beer Bottles (glass)					
Soft Drink (glass)					
Soft Drink (cans)					
Soft Drink (plastic)					
Sport Drink (glass)					
Sport Drink (plastic)					
Water (glass)					
Water (plastic)					
Wine/ Liquor (glass)					
Wine/ Liquor (plastic/other)					
Juice (plastic)					
Milk-Milk Type Beverage (plastic)					
Juice (glass)					
Milk-Milk Type Beverage (Glass)					
Juice (gable top)					
Milk-Milk Type Beverage (gable top)					
Non-Milk Aseptic (box)					
Milk-Milk Type Beverage (Aseptic)					
Drink Foil Pouches					
Beverage Bi-Metal					
<b>OTHER PACKAGING</b>					
Foil Pouches					
Non-Beverage Aseptic Box					
Non-Beverage Gable Top					
Broken Cont. Glass					
Six Pack Plastic Rings					
Foil Containers					
<b>CUPS</b>					
Plastic Drink Cups					
Paper Cups (cold)					
Paper Cups (hot)					
Polystyrene Cups (foam)					
Other Paper Cups					
Cup Lids, Pieces					
<b>BAGS</b>					
Plastic Retail Bags & Grocery					
Paper Retail Bags& Grocery					
Paper Bags - Fast Food					
Plastic Bags - Fast Food					
Plastic Bags -Consumable Packaging					
Paper Bags -Consumable Packaging					
Plastic Bags-Dry-Cleaning Bags					
Other Plastic Bags					
Pet Waste Bags (Empty)					
Plastic Bags Non-Packaging					
Paper Bags Non-Packaging					
Zipper Bags/Sandwich Bags					

Site ID

	Pass 1	Total	Pass 2	Total	Brand Names Observed
<b>OTHER PACKAGING (BOXES)</b>					
Cardboard Boxes/ Box Material					
Paperboard (boxboard)					
Paper Beverage Cases/Sleeves					
Polystyrene Clamshells					
Paper Clamshells					
Other Plastic Shells/Boxes					
<b>OTHER CONTAINERS</b>					
Plastic Jars / Bottles/ Lids					
Paint Containers/Cans					
Pesticide Containers					
Used Lubricating Oil Containers					
Solvent Containers					
Gasoline Containers					
Glass Jars/ Bottles Misc					
Cans/Containers-Steel					
Cans-Aluminum					
Spiral Wound Containers					
Container Lids					
Other Aerosol Containers					
<b>FOOD WRAPS/CONTAINERS</b>					
Paper Food Wrap					
Paper /Foil Composite Wrap					
Plastic Wrap					
<b>TAKE OUT EXTRAS</b>					
Condiment Packaging					
Utensils					
Branded Napkins / Serviettes					
Paper Fast Food Plates					
Poly Fast Food Plates					
Aluminum Food Containers					
Other Plastic Fast Food Plates					
Plates-Other Materials					
Plastic Stir Sticks					
Straws					
<b>TRAYS</b>					
Polystyrene Trays					
Paper Trays					
Other Material Trays					
<b>CONFECTIONARY/SNACK</b>					
Gum Wrappers					
Candy Bar Wrappers					
Candy Pouches					
Sweet Packaging (describe)					
Other Confectionary (describe)					
Snack Food Packaging					
<b>CLOTH</b>					
Clothing or Clothing Pieces					
Other Cloth					
<b>OTHER MISCELLANEOUS PACKAGING</b>					
Plastic Packaging Other					
Paper Packaging Other					
Plastic/ Composite Other					
Foil Materials/Foil Pieces					

Site ID

	Pass 1	Total	Pass 2	Total	Brand Names Observed
<b>PAPER/FIBRE MATERIAL</b>					
Non-Brand Towels/Napkins					
Lottery \Ticket Debris					
Printed Material					
Stationary (school, business etc.)					
Receipts (business forms, bus tickets)					
<b>TOBACCO PRODUCTS</b>					
Cigarette / Cigar Debris					
Tobacco other					
<b>OTHER MISCELLANEOUS</b>					
Misc. Paper					
Misc. Plastic					
Misc. Paperboard					
Misc. Cardboard					
Misc. Glass					
Vehicle & Metal Road Debris					
Gypsum/ Drywall					
Rigid Asphalt Products					
Carpet					
Other Construction/ Demolition Debris					
Tire & Rubber Debris					
Cell Phones					
Batteries					
Audio-Visual Devices					
Electronic Toys					
Small Appliances, Power Tools					
Alarms					
Light Bulbs					
Home Articles					
Medications					
Food					
Pet Waste (bagged)					
Pet Waste (loose)					
Popsicle Sticks					
<b>MEDICAL WASTE</b>					
Disposable Gloves					
Masks					
Disinfecting Wipes					

Super Site Litter Survey Form

Site ID: \_\_\_\_\_ Site Name: \_\_\_\_\_

Date (DD/MM/YY): \_\_\_\_\_ Time: \_\_\_\_\_ Survey Team: \_\_\_\_\_

CATEGORY	Pass 1	Total
Small Litter Categories		
Cigarette butts/debris		
Other tobacco		
Bottle caps		
Straws		
Candy packaging & wrappers		
Expanded polystyrene packing materials (ie. Foam peanuts)		
Other polystyrene debris (ie. Poly foam pieces)		
Glass		
Paper		
Cup Sleeves		
Plastic film		
Hard Plastic		
Aluminum foil/debris		
Rubber		
Metal (not aluminum)		
Chewing gum (stuck on pavement)		
Food & food scraps		
Pet waste (bagged)		
Pet waste (loose)		
Needles/syringes		
Medications		
Cell Phones		
Audio-visual devices		
Batteries		
Other electronic waste		
Other material		
Vapes		
Vaping equipment		

# Appendix F

## *Litter Data*

Large Litter Item	Total	Percentage
Non-Brand Towels/Napkins	145.5	12.9%
Misc. Plastic	72	6.4%
Receipts (business forms, bus tickets)	69.5	6.1%
Masks	56	4.9%
Cup Lids, Pieces	54	4.8%
Printed Material	47.5	4.2%
Home Articles	44	3.9%
Disinfecting Wipes	42	3.7%
Plastic Bags -Consumable Packaging	40	3.5%
Straws	34.5	3.0%
Stationary (school, business etc.)	31	2.7%
Other Cloth	29	2.6%
Paper Cups (hot)	27	2.4%
Paperboard (boxboard)	27	2.4%
Plastic Drink Cups	25	2.2%
Snack Food Packaging	21	1.9%
Paper Food Wrap	20	1.8%
Tobacco other	19	1.7%
Pet Waste (loose)	19	1.7%
Plastic Wrap	18	1.6%
Candy Bar Wrappers	18	1.6%
Plastic Packaging Other	14	1.2%
Paper Cups (cold)	13	1.1%
Zipper Bags/Sandwich Bags	12.5	1.1%
Cardboard Boxes/ Box Material	12	1.1%
Other Construction/ Demolition Debris	11	1.0%
Disposable Gloves	11	1.0%
Utensils	11	1.0%
Paper /Foil Composite Wrap	11	1.0%
Other Plastic Shells/Boxes	9	0.8%
Beer Cans	9	0.8%
Plastic Jars / Bottles/ Lids	9	0.8%
Paper Bags - Fast Food	7	0.6%
Soft Drink (cans)	7	0.6%
Pet Waste Bags (Empty)	7	0.6%
Branded Napkins / Serviettes	6	0.5%

Large Litter Item	Total	Percentage
Paper Beverage Cases/Sleeves	6	0.5%
Clothing or Clothing Pieces	6	0.5%
Foil Pouches	6	0.5%
Gum Wrappers	6	0.5%
Pet Waste (bagged)	5.5	0.5%
Paper Bags -Consumable Packaging	5.5	0.5%
Popsicle Sticks	5.5	0.5%
Paper Packaging Other	5	0.4%
Plastic Retail Bags & Grocery	5	0.4%
Misc. Paper	5	0.4%
Paper Clamshells	5	0.4%
Food	4	0.4%
Sweet Packaging (describe)	4	0.4%
Water (plastic)	3	0.3%
Other Plastic Bags	3	0.3%
Container Lids	3	0.3%
Paper Retail Bags& Grocery	3	0.3%
Plates-Other Materials	3	0.3%
Rigid Asphalt Products	3	0.3%
Foil Materials/Foil Pieces	2	0.2%
Paper Fast Food Plates	2	0.2%
Six Pack Plastic Rings	2	0.2%
Candy Pouches	2	0.2%
Sport Drink (plastic)	2	0.2%
Soft Drink (plastic)	2	0.2%
Paper Bags Non-Packaging	2	0.2%
Cigarette / Cigar Debris	2	0.2%
Other Material Trays	2	0.2%
Lottery \Ticket Debris	2	0.2%
Cell Phones	2	0.2%
Vehicle & Metal Road Debris	1	0.1%
Other Paper Cups	1	0.1%
Plastic Bags Non-Packaging	1	0.1%
Misc. Glass	1	0.1%
Broken Cont. Glass	1	0.1%
Cans/Containers-Steel	1	0.1%
Stir Sticks	1	0.1%
Other Confectionary (describe)	1	0.1%

Large Litter Item	Total	Percentage
Beer Bottles (glass)	1	0.1%
Wine/ Liquor (plastic/other)	1	0.1%
Drink Foil Pouches	1	0.1%
Pesticide Containers	1	0.1%
Gypsum/ Drywall	1	0.1%
Batteries	1	0.1%
Small Appliances, Power Tools	1	0.1%
Tire& Rubber Debris	0	0.0%
Wine/ Liquor (glass)	0	0.0%
Condiment Packaging	0	0.0%
Milk-Milk Type Beverage (plastic)	0	0.0%
Water (glass)	0	0.0%
Juice (glass)	0	0.0%
Milk-Milk Type Beverage (gable top)	0	0.0%
Non-Milk Aseptic (box)	0	0.0%
Foil Containers	0	0.0%
Polystyrene Cups (foam)	0	0.0%
Cans-Aluminum	0	0.0%
Aluminum Food Containers	0	0.0%
Plastic/ Composite Other	0	0.0%
Misc. Paperboard	0	0.0%
Audio-Visual Devices	0	0.0%
Misc. Cardboard	0	0.0%
Soft Drink (glass)	0	0.0%
Sport Drink (glass)	0	0.0%
Juice (plastic)	0	0.0%
Milk-Milk Type Beverage (Glass)	0	0.0%
Juice (gable top)	0	0.0%
Milk-Milk Type Beverage (Aseptic)	0	0.0%
Beverage Bi-Metal	0	0.0%
Non-Beverage Aseptic Box	0	0.0%
Non-Beverage Gable Top	0	0.0%
Plastic Bags - Fast Food	0	0.0%
Plastic Bags-Dry-Cleaning Bags	0	0.0%
Polystyrene Clamshells	0	0.0%
Paint Containers/Cans	0	0.0%
Used Lubricating Oil Containers	0	0.0%
Solvent Containers	0	0.0%



<b>Large Litter Item</b>	<b>Total</b>	<b>Percentage</b>
Gasoline Containers	0	0.0%
Glass Jars/ Bottles Misc	0	0.0%
Spiral Wound Containers	0	0.0%
Other Aerosol Containers	0	0.0%
Poly Fast Food Plates	0	0.0%
Other Plastic Fast Food Plates	0	0.0%
Polystyrene Trays	0	0.0%
Paper Trays	0	0.0%
Carpet	0	0.0%
Electronic Toys	0	0.0%
Alarms	0	0.0%
Light Bulbs	0	0.0%
Medications	0	0.0%

Small Litter Item	All	Percentage
Glass	277	28.73%
Paper	202	20.95%
Cigarette Butts/Debris	169	17.53%
Hard Plastic	90	9.34%
Plastic Film	64	6.64%
Chewing Gum (stuck on pavement)	35	3.63%
Food & Food Scraps	35	3.63%
Candy Packaging and Wrappers	33	3.42%
Other Material	20	2.07%
Aluminum/Foil Debris	19	1.97%
Metal (not aluminum)	5	0.52%
Other Polystyrene Debris, ie. Poly Foam Pieces	4	0.41%
Cup Sleeves	3	0.31%
Rubber	3	0.31%
Straws	2	0.21%
Bottle Caps	1	0.10%
Pet Waste (loose)	1	0.10%
Medications	1	0.10%
Other Tobacco	0	0.00%
Expanded Polystyrene Packing Materials, ie. Foam Peanuts	0	0.00%
Pet Waste (bagged)	0	0.00%
Needles/Syringes	0	0.00%
Cell Phones	0	0.00%
Audio-Visual devices	0	0.00%
Batteries	0	0.00%
Other Electronic Waste	0	0.00%
Vapes	0	0.00%
Vaping Equipment	0	0.00%

# Appendix G

## *Ranking of Sites*

Site Number	Large Litter	CI
55	95.5	3
13	39	3
59	32	2
50	30	3
89	26	2
77	25.5	3
61	25	2
125	24	2
114	23.5	2
124	22	2
96	21	3
116	21	2
117	20	2
60	19	2
53	18.5	3
58	18	2
76	18	2
41	17.5	3
4	17	3
17	17	2
44	17	3
57	17	2
75	17	3
87	17	2
98	17	2
23	14	2
42	14	2
112	14	2
12	13	3
92	13	2
119	12.5	2
14	12	2
27	12	2
51	12	2
78	12	2
82	12	2
11	11	3
35	11	2
52	11	2
7	10	2
48	10	2
85	10	2
120	10	2
67	9	2
3	8	1
6	8	2
20	8	1
22	8	2
26	8	2
32	8	2
62	8	3
69	8	1
83	8	2
2	7	1
49	7	2
56	7	2
95	7	2
106	7	3
115	7	2
91	6.5	2
1	6	2
15	6	2
33	6	2
37	6	1
72	6	1
88	6	2
93	6	2

Site Number	Small Litter	CI
62	289	3
68	35	2
55	34	3
41	28	3
118	27	2
54	21	2
123	20	1
106	19	3
23	17	2
59	17	2
104	17	2
52	16	2
58	16	2
124	14	2
13	12	3
89	11	2
117	11	2
34	10	2
57	10	2
61	10	2
80	10	2
112	10	2
33	9	2
67	9	2
75	9	3
105	9	2
56	8	2
70	8	2
102	8	2
26	7	2
38	7	2
50	7	3
51	7	2
77	7	3
121	7	1
126	7	1
7	6	2
78	6	2
84	6	1
4	5	3
8	5	2
17	5	2
19	5	1
44	5	3
60	5	2
76	5	2
120	5	2
10	4	2
24	4	1
30	4	1
35	4	2
36	4	2
69	4	1
83	4	2
88	4	2
93	4	2
95	4	2
100	4	2
101	4	2
103	4	2
116	4	2
2	3	1
9	3	1
11	3	3
15	3	2
22	3	2
27	3	2

Site Number	Total	CI
62	297	3
55	129.5	3
13	51	3
59	49	2
41	45.5	3
68	38.5	2
50	37	3
89	37	2
124	36	2
61	35	2
58	34	2
118	33	2
77	32.5	3
23	31	2
117	31	2
52	27	2
57	27	2
54	26	2
75	26	3
106	26	3
125	26	2
116	25	2
123	25	1
114	24.5	2
60	24	2
112	24	2
76	23	2
96	23	3
4	22	3
17	22	2
44	22	3
98	20	2
53	19.5	3
51	19	2
67	18	2
78	18	2
87	18	2
42	17	2
104	17	2
7	16	2
92	16	2
26	15	2
27	15	2
33	15	2
35	15	2
56	15	2
80	15	2
82	15	2
120	15	2
11	14	3
102	14	2
119	13.5	2
12	13	3
34	13	2
48	13	2
85	13	2
14	12	2
69	12	1
83	12	2
22	11	2
70	11	2
95	11	2
2	10	1
6	10	2
8	10	2
20	10	1
38	10	2

Site Number	Large Litter	CI
102	6	2
118	6	2
8	5	2
9	5	1
30	5	1
40	5	2
54	5	2
79	5	2
80	5	2
113	5	1
123	5	1
10	4	2
18	4	2
21	4	2
36	4	2
65	4	1
84	4	1
100	4	2
103	4	2
68	3.5	2
5	3	1
34	3	2
38	3	2
66	3	1
70	3	2
101	3	2
126	3	1
25	2	1
43	2	1
45	2	1
71	2	1
73	2	1
94	2	1
121	2	1
28	1	1
39	1	1
105	1	2
111	1	1
122	1	1
16	0	1
19	0	1
24	0	1
46	0	1
64	0	1
74	0	1
104	0	2

Site Number	Small Litter	CI
42	3	2
48	3	2
72	3	1
79	3	2
82	3	2
85	3	2
92	3	2
98	3	2
113	3	1
6	2	2
18	2	2
20	2	1
21	2	2
39	2	1
40	2	2
49	2	2
71	2	1
91	2	2
96	2	3
111	2	1
115	2	2
125	2	2
1	1	2
5	1	1
16	1	1
25	1	1
28	1	1
32	1	2
37	1	1
43	1	1
45	1	1
46	1	1
53	1	3
64	1	1
74	1	1
87	1	2
114	1	2
119	1	2
3	0	1
12	0	3
14	0	2
65	0	1
66	0	1
73	0	1
94	0	1
122	0	1

Site Number	Total	CI
84	10	1
88	10	2
93	10	2
105	10	2
126	10	1
15	9	2
30	9	1
32	9	2
49	9	2
72	9	1
115	9	2
121	9	1
91	8.5	2
3	8	1
9	8	1
10	8	2
36	8	2
79	8	2
100	8	2
103	8	2
113	8	1
1	7	2
37	7	1
40	7	2
101	7	2
18	6	2
21	6	2
19	5	1
5	4	1
24	4	1
65	4	1
71	4	1
25	3	1
39	3	1
43	3	1
45	3	1
66	3	1
111	3	1
28	2	1
73	2	1
94	2	1
16	1	1
46	1	1
64	1	1
74	1	1
122	1	1