



ALBERNI-CLAYOQUOT REGIONAL DISTRICT

Garbage Composition Study Alberni Valley Landfill and West Coast Landfill

Project No.: 19-9913
July, 2019



July 25, 2019



Alberni-Clayoquot Regional District
3008 Fifth Avenue,
Port Alberni, BC
V9Y 2E3

Attention: Jenny Brunn
Manger of Operations

Garbage Composition Study – Alberni Valley and West Coast Landfills

Dear Jenny:

Dillon Consulting Limited is pleased to present the Alberni-Clayoquot Regional District with the baseline garbage composition study results for the Alberni Valley and West Coast Landfills. This report summarizes the information collected during the garbage composition studies that took place May 27-30, 2019 at the Alberni Valley Landfill and June 18-20, 2019 at the West Coast Landfill. Through this report we believe that we have proficiently collected information on the current composition of garbage entering each landfill from the residential, self-haul and industrial commercial and institutional (ICI) sectors.

Thank you for the opportunity to work with you on this important assignment. We look forward to discussing your comments on this draft report. Following any revisions, a finalized version will be prepared and submitted. In the meantime, if you have any questions or concerns regarding the content, please contact me at (604) 295-7070 ext. 4216 or hgerlach@dillon.ca.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink, appearing to read "H. Gerlach", with a long horizontal line extending to the right.

Heidi Gerlach,
Project Manager

Our file: 19-9913

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Executive Summary

Dillon Consulting Limited (Dillon) was retained by the Alberni-Clayoquot Regional District (ACRD) to complete a baseline garbage composition study at both the Alberni Valley Landfill and the West Coast Landfill. It is our understanding this information will be used for program development and future outreach and education campaigns regarding waste diversion and reduction.

This baseline study took place at the Alberni Valley Landfill from May 27-30, 2019 and at the West Coast Landfill from June 18-20, 2019. One Dillon staff member was assisted by three to four landfill staff to complete the audits. The main objective of the baseline garbage composition study was to:

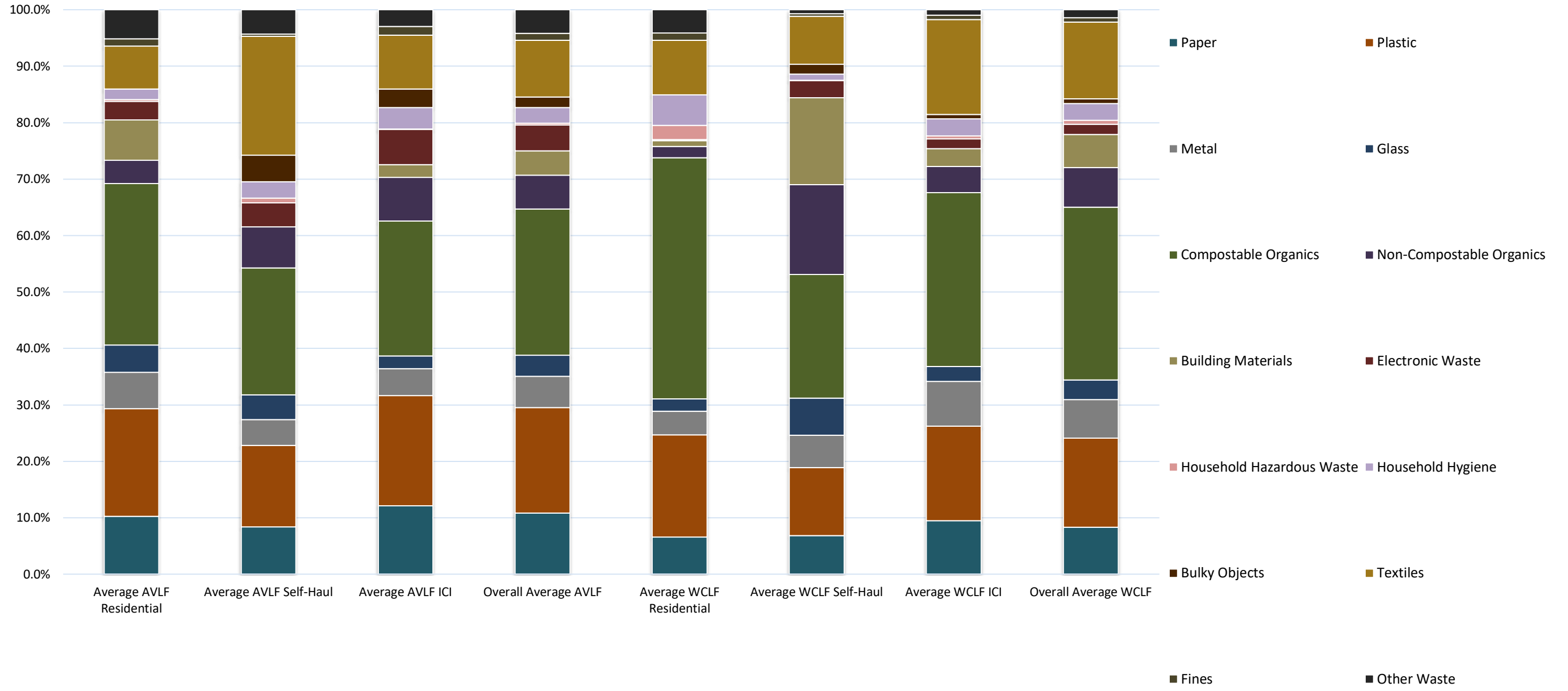
- Determine and report on the composition of material entering both landfills;
- Establish the percentage of divertible materials entering each landfill; and
- Produce garbage composition profiles for each waste generating sector (residential, self-haul and ICI) at each landfill.

Throughout each of the studies, waste was delivered, subsampled, sorted and weighed. There was a total of 26 samples audited (14 at Alberni Valley Landfill and 12 at the West Coast Landfill). Waste was sorted into 14 primary categories which included:

- Paper;
- Plastic;
- Metal;
- Glass;
- Compostable Organics;
- Non-Compostable Organics;
- Building Materials;
- Electronic Waste;
- Household Hazardous Waste;
- Household Hygiene;
- Bulky Objects;
- Textiles;
- Fines; and
- Other Waste.

Consistently throughout the entire study, in all sectors and at both landfills, compostable organics were one of the largest categories of waste representing 25.9% (Alberni Valley Landfill) to 30.6% (West Coast Landfill) of waste audited. Generally, the majority of compostable organics were food waste or yard waste.

Executive Summary Figure 1 illustrates the overall average results per sector and landfill and **Executive Summary Table 1** displays these results numerically.

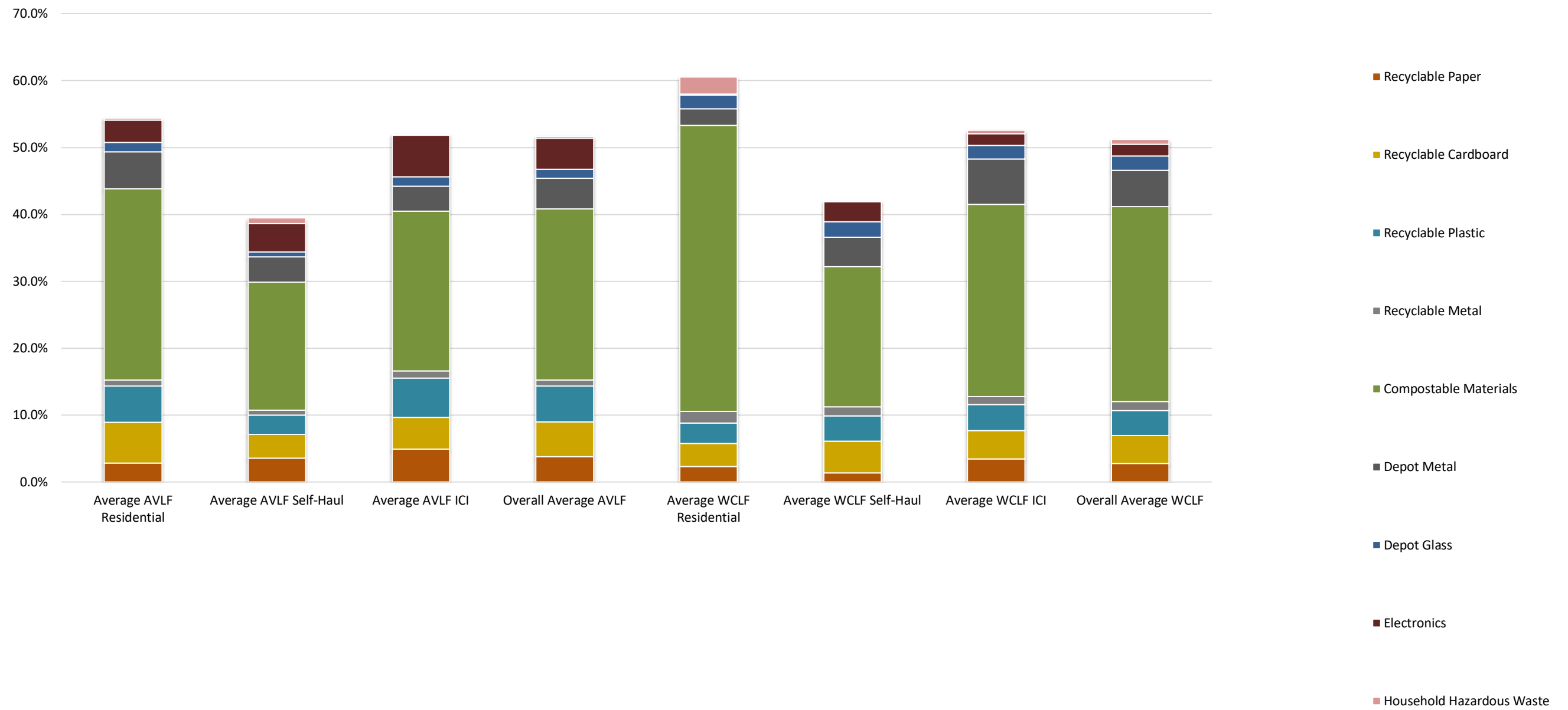


Executive Summary Figure 1: Overall Average Waste Composition per Sector and Landfill

Executive Summary Table 1: Overall Average Waste Composition per Sector and Landfill

Category	Average Residential (AVLF)	Average Self-Haul (AVLF)	Average ICI (AVLF)	Average Overall (AVLF)	Average Residential (WCLF)	Average Self-Haul (WCLF)	Average. ICI (WCLF)	Average Overall (WCLF)
Paper	10.3%	8.4%	12.1%	10.8%	6.6%	6.8%	9.5%	8.4%
Plastic	19.0%	14.4%	19.5%	18.7%	18.0%	12.0%	16.8%	15.8%
Metal	6.5%	4.6%	4.8%	5.5%	4.2%	5.8%	7.9%	6.8%
Glass	4.8%	4.4%	2.2%	3.7%	2.2%	6.6%	2.6%	3.5%
Compostable Organics	28.6%	22.5%	23.9%	25.9%	42.8%	21.9%	30.8%	30.6%
Non-Compostable Organics	4.1%	7.3%	7.8%	6.0%	2.0%	15.9%	4.6%	7.0%
Building Materials	7.2%	0.0%	2.2%	4.3%	1.0%	15.4%	3.2%	5.9%
Electronic Waste	3.3%	4.2%	6.2%	4.6%	0.2%	3.0%	1.7%	1.8%
Household Hazardous Waste	0.3%	0.9%	0.1%	0.3%	2.5%	0.1%	0.5%	0.7%
Household Hygiene	1.8%	2.9%	3.8%	2.8%	5.4%	1.1%	3.0%	2.9%
Bulky Objects	0.0%	4.7%	3.3%	1.9%	0.0%	1.7%	0.8%	0.9%
Textiles	7.6%	21.1%	9.5%	10.0%	9.6%	8.5%	16.8%	13.5%
Fines	1.3%	0.3%	1.6%	1.3%	1.3%	0.5%	0.8%	0.8%
Other Waste	5.2%	4.3%	2.9%	4.2%	4.2%	0.7%	1.0%	1.4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

All samples audited contained divertible materials, including materials that should have been collected through curbside programs or dropped off at a recycling depot. The overall potential for diversion by landfill and sector is illustrated in **Executive Summary Figure 2** and detailed numerically in **Executive Summary Table 2**.



Executive Summary Figure 2: Overall Average Divertible Materials in the Garbage Stream

Executive Summary Table 2: Overall Potential for Additional Diversion by Sector and Landfill

Category	Average Residential (AVLF)	Average Self-Haul (AVLF)	Average ICI (AVLF)	Average Overall (AVLF)	Average Residential (WCLF)	Average Self-Haul (WCLF)	Average ICI (WCLF)	Average Overall (WCLF)
Recyclable Paper	2.8%	3.6%	4.9%	3.8%	2.3%	1.4%	3.5%	2.8%
Recyclable Cardboard	6.1%	3.5%	4.7%	5.2%	3.4%	4.8%	4.2%	4.2%
Recyclable Plastic	5.4%	2.9%	5.9%	5.3%	3.1%	3.8%	3.9%	3.7%
Recyclable Metal	0.9%	0.8%	1.0%	0.9%	1.7%	1.4%	1.2%	1.3%
Compostable Materials	28.6%	19.1%	23.9%	25.5%	42.8%	21.0%	28.8%	29.1%
Depot Metal	5.6%	3.8%	3.7%	4.6%	2.5%	4.4%	6.8%	5.5%
Depot Glass	1.4%	0.7%	1.4%	1.3%	2.1%	2.3%	2.0%	2.1%
Electronics	3.3%	4.2%	6.2%	4.6%	0.2%	3.0%	1.7%	1.8%
Household Hazardous Waste	0.3%	0.9%	0.1%	0.3%	2.5%	0.1%	0.5%	0.7%
Total	55.4%	39.5%	52.0%	51.6%	60.5%	42.0%	52.5%	51.2%

1.0 Introduction

The Alberni-Clayoquot Regional District (ACRD) contracts out the operations of two landfills; the Alberni Valley Landfill (AVLF) located in Port Alberni and the West Coast Landfill (WCLF) located in Ucluelet. Dillon Consulting Limited (Dillon) was retained to complete garbage composition studies of inbound material at both landfills. The garbage composition studies took place from May 27-30, 2019 at the AVLF and June 18-20, 2019 at the WCLF.

Garbage was sorted from three sectors including residential, self-haul and industrial commercial and institutional (ICI). The construction and demolition (CD) sector was not included as a part of this study.

1.1 Background

The ACRD is the regional government for several member municipalities and electoral areas including:

- Port Alberni;
- Tofino;
- Ucluelet;
- Treaty First Nations; and
- Six Electoral Areas (Bamfield, Beaufort, Long Beach, Sproat Lake, Beaver Creek and Cherry Creek).

Curbside garbage collection is provided by the City in Port Alberni, and under ACRD managed contract in Long Beach, Tofino and Ucluelet. Residents in Sproat Lake, Beaver Creek and Cherry Creek are responsible for contracting their own curbside collection. There is no curbside garbage collection in Bamfield or Beaufort. The ACRD provides curbside recycling collection in Port Alberni, Long Beach, Tofino, Ucluelet and Beaver Creek; and there are six recycling depots located throughout the ACRD. At the time of the study, there were no source separated organics programs in place for curbside collection of materials. Residents are encouraged to purchase a compost bin from the ACRD for backyard composting.

No waste composition studies have previously been completed in the ACRD.

1.2 Scope of Work

The purpose of this project was to determine and report on the composition of material entering ACRD landfills in order to develop and create targeted diversion and public outreach campaigns. The focus of this study was to gain an understanding of organics, cardboard, curbside recyclables and Extended Producer Responsibility (EPR) materials in the garbage streams of the three selected sectors (residential, self-haul and ICI). The aim of this study was to produce garbage composition profiles for each sector at the AVLF and the WCLF.

1.3 Assumptions and Limitations

Assumptions for the garbage composition study included the following:

- Inbound materials sampled over the audit period represented the average composition of garbage generated in the ACRD;
- The samples analyzed over the collection period, when extrapolated for annual waste disposed are representative of the composition of waste generated annually in the region;
- Inbound material at AVLF is approximately 50% residential and self-haul and 50% ICI; and
- Inbound material at WCLF is approximately 25% residential and 75% commercial. There is one self-haul load tipped at the end of each day.

The following limitations occurred during the study period:

- Electoral Area A and C were not assessed as part of this study. Waste from Electoral Area A was intended to be delivered to AVLF, but this material was collected by the hauler early and disposed at the tip face without auditor knowledge.
- ICI loads at AVLF and WCLF were limited. It was noted by staff at AVLF that fewer commercial loads were off-loaded at the landfill than in an average week, however the projected number of loads were audited. At WCLF 58% of loads audited were ICI, lower than the 75% considered the norm. If self-haul samples are removed, the ratio sampled at WCLF is 25% residential and 75% ICI. Therefore sampling is still considered effective.
- One load from the fish farms at the WCLF was assessed. It was assumed all loads from this sub-sector had a similar composition (largely rope and plastic tubes). These trucks were thereafter avoided as a part of this study.
- C&D loads were not assessed during this study but C&D haulers were observed disposing of waste at both the AVLF and WCLF.

2.0 Methodology

Three sectors were included as a part of the baseline 2019 garbage composition study at the AVLF and WCLF. These three sectors included:

- Residential – seven residential loads were sorted as a part of this study (five at the AVLF and two at WCLF). Residential loads sorted at AVLF included samples from the City of Port Alberni, Electoral Areas B, D E and F. Residential loads sorted at WCLF included samples from Ucluelet and Tofino. Electoral Area A was intended to be sorted at AVLF but there was a collection error and the sample was not provided.
- Self-Haul – five self-haul loads were assessed as a part of this study (two at AVLF and three at WCLF).
- Industrial, Commercial and Institutional – 14 ICI loads (seven at each landfill) were assessed and sorted as part of this baseline study. ICI loads arrived from a variety of locations including resorts, multi-family buildings, grocery stores, hotels and ‘big box’ stores.

2.1 Waste Collection

During each auditing period, Dillon staff were notified when an inbound load was on the scale. If the load was selected to be a part of the study, Dillon staff would meet the hauler at the tip face and record information about the load on a collection log. A copy of this collection log is provided in **Appendix A**. Information recorded included time and date of collection, load and vehicle type, the origin of materials and any other relevant and/or additional notes.

To determine the number of samples required, Dillon staff prepared a sampling framework customized to the scope of this assignment. The study took place over four consecutive days at the AVLF and three consecutive days at the WCLF. It is assumed that approximately 50% of waste entering the AVLF is residential and self-haul materials and the other 50% is ICI. WCLF has approximately 25% of inbound material categorized as residential and 75% ICI. There is also one 40-yard roll-off bin of self-haul materials disposed of on the tip face daily. The overall number of loads that were assessed are provided in **Table 1** and **Table 2**.

Table 1: Samples Assessed by Sector AVLF

Landfill	Sector	Number of Samples	Percentage of Samples
AVLF	Residential	5	36%
	Self-Haul	2	14%
	ICI	7	50%
Total		14	100%

Table 2: Samples Assessed by Sector WCLF

Landfill	Sector	Number of Samples	Percentage of Samples
WCLF	Residential	2	17%
	Self-Haul	3	25%
	ICI	7	58%
Total		12	100%

2.2 Waste Sub-Sampling

Once a load was selected to be a part of the study, Dillon staff along with landfill staff randomly selected a representative sub-sample of 100-150 kg to be audited in detail. The sub-sampling procedure took place for all 26 loads assessed.

2.3 Waste Sorting Procedure

With assistance from landfill staff, Dillon manually sorted each load into specific categories. There was a total of 14 primary categories and 30 sub-categories. Primary categories included:

- Paper;
- Plastic;
- Metal;
- Glass;
- Compostable Organics;
- Non-Compostable Organics;
- Building Materials;
- Electronic Waste;
- Household Hazardous Waste;
- Household Hygiene;
- Bulky Objects;
- Textiles;
- Fines; and
- Other Waste.

Detailed categories and sub-categories are provided in **Appendix B**. As bins were filled for each category, they were weighed individually using a precision scale. After the entire sub-sample was audited and weighed, materials were put back on the tip face for final disposal.

2.4 Data Analysis and Evaluation

Data was compiled using field data sheets, and then electronically entered following the study completion. Data collection logs, scale tickets and data entry sheets were reviewed on a daily basis to ensure accuracy. It should be noted that weight based sorting does not take into account the volume of material. For instance, smaller, bulkier items such as diapers can represent a small volume of the waste stream, but a larger portion of the weight. Recyclable plastic is often a large portion of the inbound materials by volume, but less represented by weight. All analysis completed is weight based for this study.

3.0 Results

The garbage waste composition study results are presented in the following subsections. This includes sector results for each landfill and a summary of the results. Detailed results of the garbage composition are provided in **Appendix C** and representative photos are provided in **Appendix D**.

3.1 Residential Results

Residential waste results are based on the single-family sub-sector, only (as Multi-family samples were not available as they are all collected by private haulers). Results for each of the landfills are detailed below.

3.1.1 AVLF Residential Results

Within the residential sector at AVLF, five samples were audited. These samples included Electoral Areas (EA) B, D, E and F and the City of Port Alberni. Electoral Area B (Beaufort) does not have curbside collection, therefore materials were set aside for this audit. Inbound customers were asked where their materials originated from. When they identified they were from Beaufort these customers were asked to dispose of their materials in a specific bin. Some residents in Electoral Areas D, E and F do not have curbside collection, either. These areas had both a sample of self-hauled residential materials and curbside collection audited as a part of this study. These were smaller samples as the two samples combined made up one full sample.

Figure 1 illustrates the weighted average primary material composition for the residential sector at the AVLF. The largest material category in this sample was compostable organics (28.6%) followed by plastic (19%) and paper (10%). The majority of the compostable organics stream was food waste (22.5%) followed by compostable/food soiled paper (3.6%). The largest subcategory of the plastics category was durable plastic products (non-recyclable plastics – 7.6%), followed by film packaging (5.7%) and ridged recyclable plastic (4.7%). Paper was largely comprised of cardboard (6.1%) and recyclable paper (2.8%).

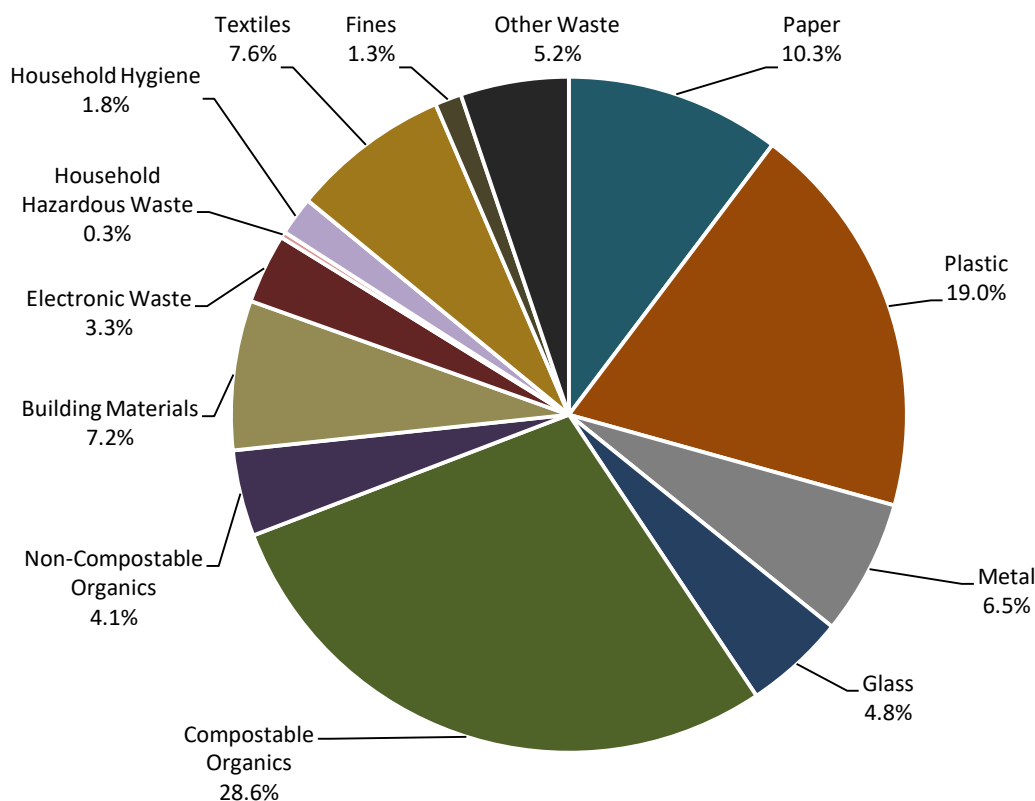


Figure 1: AVLF Residential Load Composition (Average)

3.1.1.1

Residential Results by Municipality

This sub-section of the report describes the composition of each municipality, individually at AVLF.

Table 3 provides these results for the primary categories.

Electoral Area B:

The largest component of the garbage in Electoral Area B (Beaufort) was compostable organics (32.3%) followed by plastic (23.0%).

Electoral Area D:

The largest category audited in the self-haul material from Electoral Area D (Sproat Lake) was metal (20.2%) followed by compostable organics (18.7%) and plastic (16.5%). The curbside collection material was largely paper (18.0%) and plastic (17.8%).

Electoral Area E:

Self-haul material from Electoral Area E (Beaver Creek) was comprised largely of compostable organics (44.2%) and plastic (20.3%). Curbside collected materials were mostly compostable organics (38.5%) and plastics (17.4%) as well.

Electoral Area F:

Materials disposed as self-hauled from Electoral Area F (Cheery Creek) were largely plastics (25.6%), textiles (13.6%), compostable organics (12.5%) and paper (12.5%). Materials collected curbside consisted mostly of compostable organics (31.3%), plastic (15.2%) and paper (14.8%).

City of Port Alberni:

The City of Port Alberni's curbside garbage consisted largely of compostable organics (35.5%), plastic (16.5%) and household hygiene (9.2%).

Table 3: AVL Composition of Residential Loads by EA/Municipality and Load Type

Category	Electoral Area B: Beaufort	Electoral Area D: Sproat Lake		Electoral Area E : Beaver Creek		Electoral Area F : Cherry Creek		City of Port Alberni
	Self- Haul	Self-Haul	Curbside	Self-Haul	Curbside	Self-Haul	Curbside	Curbside
Paper	4.3%	11.2%	18.0%	5.5%	10.5%	12.5%	14.8%	5.5%
Plastic	23.0%	16.5%	17.8%	20.3%	17.4%	25.6%	15.2%	16.5%
Metal	6.8%	20.2%	2.5%	3.7%	9.3%	4.4%	0.6%	4.2%
Glass	3.1%	1.4%	15.5%	2.2%	10.3%	1.6%	3.5%	1.1%
Compostable Organics	32.3%	18.7%	15.4%	44.2%	38.5%	12.5%	31.3%	35.5%
Non-Compostable Organics	4.7%	9.7%	2.5%	0.6%	0.8%	7.4%	6.1%	1.2%
Building Materials	4.0%	7.7%	0.3%	0.9%	6.2%	8.8%	17.7%	11.7%
Electronic Waste	6.6%	1.1%	3.7%	9.6%	0.6%	2.5%	0.0%	2.6%
Household Hazardous Waste	1.0%	0.1%	0.0%	0.0%	0.4%	0.4%	0.0%	0.4%
Household Hygiene	1.9%	0.3%	0.6%	0.2%	0.1%	0.8%	1.8%	9.2%
Bulky Objects	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Textiles	4.9%	8.1%	6.7%	10.9%	2.0%	13.6%	7.3%	7.3%
Fines	0.2%	0.7%	3.6%	1.8%	1.7%	1.0%	0.2%	0.9%
Other Waste	7.3%	4.2%	13.3%	0.2%	2.2%	8.8%	1.5%	4.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%

3.1.2 WCLF Residential Results

At WCLF, two residential samples were audited. These samples were from Ucluelet and Tofino. **Figure 2** illustrates the two samples average primary material composition for the residential sector at the WCLF. Residential waste was mostly compostable organics (42.8%) followed by plastic (18.0%) and paper (6.6%). The majority of the compostable organics stream was food waste (29.5%) followed by compostable/food soiled paper (7.7%). The largest subcategory of the plastics category was durable plastic products (non-recyclable plastics – 4.6%), followed by film packaging (3.4%) and ridged recyclable plastic (3.2%). Paper consisted largely of cardboard (4.8%) and recyclable paper (1.4%).

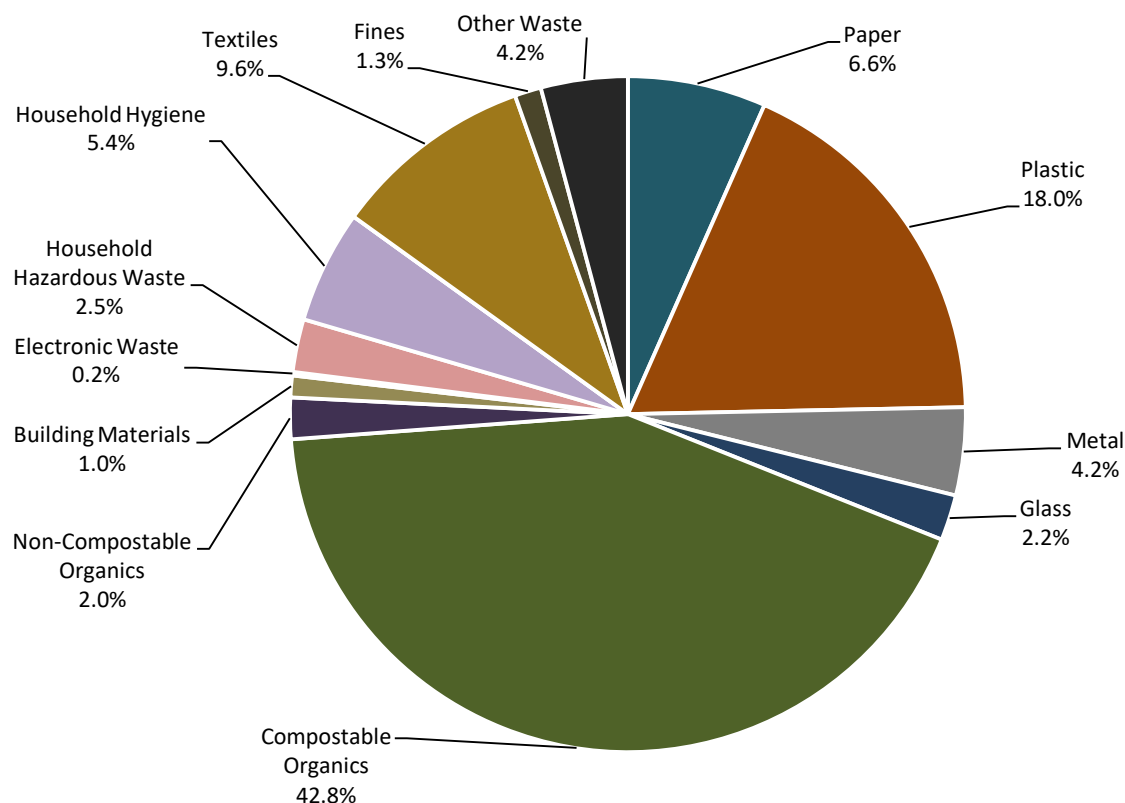


Figure 2: WCLF Residential Load Composition (Average)

3.1.2.1 Residential Results by Municipality

This sub-section of the report describes the composition of each municipality at WCLF. **Table 4** provides these results for the primary categories.

Ucluelet:

Inbound garbage from Ucluelet was largely compostable organics (44.2%) and plastic (18.5%).

Tofino:

Similarly, the garbage sample from Tofino was mainly compostable organics (41.3%) and plastic (17.6%)

Table 4: WCLF Composition of Residential Loads by Municipality

Category	Ucluelet	Tofino
	Curbside	Curbside
Paper	7.7%	5.5%
Plastic	18.5%	17.6%
Metal	4.6%	3.8%
Glass	1.1%	3.2%
Compostable Organics	44.2%	41.3%
Non-Compostable Organics	0.0%	4.0%
Building Materials	1.6%	0.5%
Electronic Waste	0.0%	0.3%
Household Hazardous Waste	2.2%	2.9%
Household Hygiene	5.0%	5.8%
Bulky Objects	0.0%	0.0%
Textiles	7.7%	11.6%
Fines	1.8%	0.8%
Other Waste	5.6%	2.7%
Total	100%	100%

3.1.3 Overall Residential Garbage Composition

A comparison of each residential sample from AVLF and WCLF is provided in **Figure 3**. Generally, compostable organics, plastics and paper are the largest categories of waste audited in the majority of residential samples.

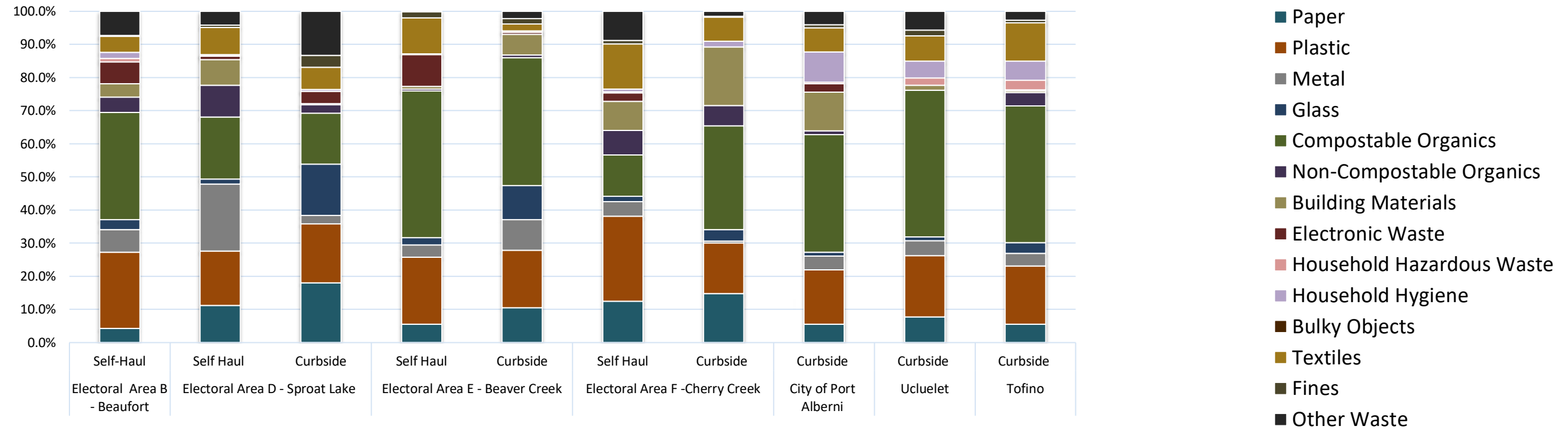


Figure 3: Overall Residential Garbage Load Composition

3.2 Self-Haul Results

Self-haul results for each of the landfills are provided in the sub-sections below.

3.2.1 AVLF Self-Haul Results

Within the self-haul sector at AVLF, two samples were audited. These samples included waste collected from all over the region. It is unknown if these were small commercial loads, residential loads, or mixed loads. **Figure 4** illustrates the weighted average primary material composition for the self-haul sector at the AVLF. The largest material category in this sample was compostable organics (22.5%) followed closely by textiles (21.1%) and then plastic (14.4%). The largest sub-categories in the self-haul loads were textiles (21.1%) (textiles are a primary and secondary category), food waste (15.2%) and dirty/treated wood (7.3%).

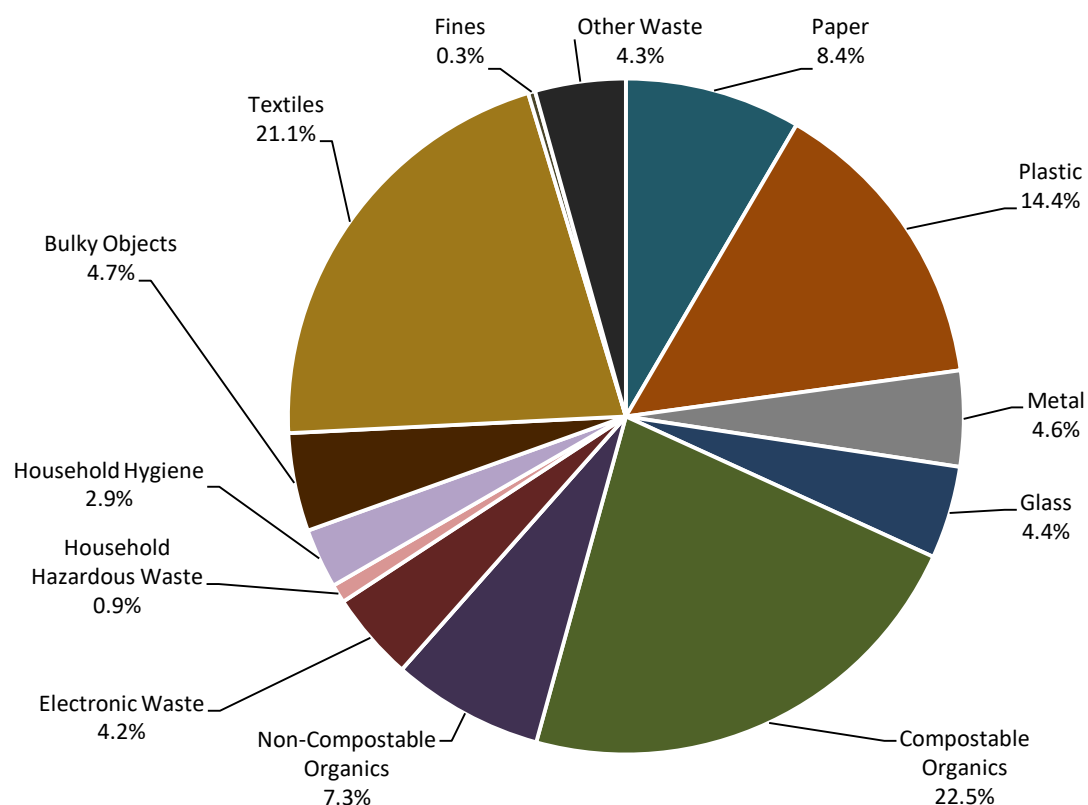


Figure 4: AVLF Self-Haul Load Composition (Average)

3.2.1.1

Self-Haul Results by Sample

This sub-section of the report describes the composition of each AVL self-haul, individually. **Table 5** provides material category results numerically for each load.

Self-Haul Load 1:

The first self-haul sample was primarily compostable organics (27.3%) and textiles (16.0%). Plastic (17.6%) and paper (11.1%) also contributed significantly to this sample.

Self-Haul Load 2:

The largest category audited in the self-haul material from the second sample was textiles (26.3%) followed by compostable organics (17.6%) and plastic (11.1%).

Table 5: AVL Composition of Self-Haul Loads by Sample

Category	Self-Haul Load 1	Self-Haul Load 2
	Self-Haul	Self-Haul
Paper	11.1%	5.8%
Plastic	17.6%	11.1%
Metal	2.7%	6.5%
Glass	2.9%	5.9%
Compostable Organics	27.3%	17.6%
Non-Compostable Organics	5.0%	9.5%
Building Materials	0.0%	0.0%
Electronic Waste	3.4%	5.0%
Household Hazardous Waste	1.6%	0.2%
Household Hygiene	2.4%	3.3%
Bulky Objects	9.4%	0.0%
Textiles	16.0%	26.3%
Fines	0.6%	0.1%
Other Waste	0.0%	8.7%
Total	100%	100%

3.2.2

WCLF Self-Haul Results

One self-haul load a day is tipped at WCLF, three of these loads were audited during the three day audit period. **Figure 5** illustrates the weighted average primary material composition for the self-haul sector at the WCLF. Self-haul waste was mostly compostable organics (21.9%) followed by non-compostable organics (15.9%) and building materials (15.4%). Dirty/treated wood (sub-category for non-compostable organics) accounted for 15.9% of the audited material. This was the largest sub-category of materials observed followed by yard waste (12.7%).

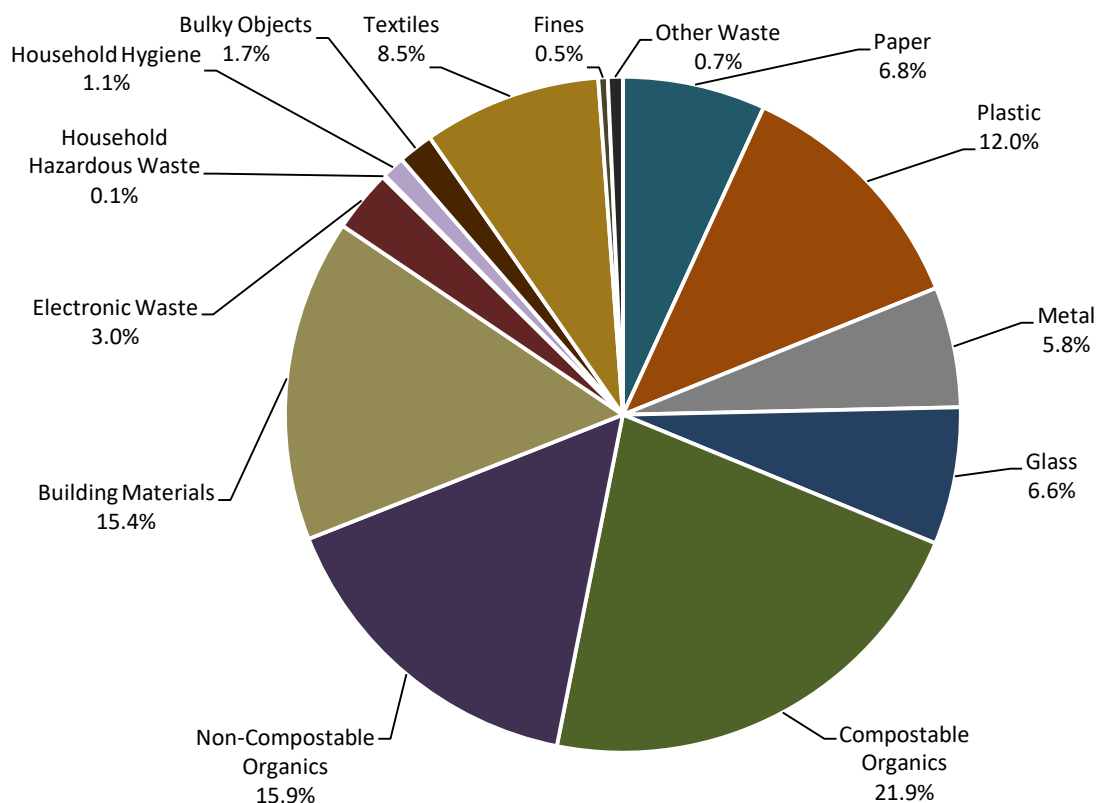


Figure 5: WCLF Self-Haul Load Composition (Average)

3.2.2.1

Self-Haul Results by Load

This sub-section of the report describes the composition of each sample. **Table 6** provides these results for the primary categories.

Self-Haul Load 1:

The first self-haul sample at WCLF was largely building materials (27.8%) and compostable organics (18.8%).

Self-Haul Load 2:

The second self-haul sample was mostly non-compostable organics (25.3%) and textiles (21.6%).

Self-Haul Load 3:

The final self-haul sample was primarily compostable organics (35.0%) and plastic (15.5%).

Table 6: WCLF Composition of Self-Haul Loads by Sample

Category	Self-Haul Load 1	Self-Haul Load 2	Self-Haul Load 3
	Self-Haul	Self-Haul	Self-Haul
Paper	6.6%	8.9%	5.1%
Plastic	8.5%	12.2%	15.5%
Metal	6.7%	6.6%	4.0%
Glass	2.5%	5.6%	11.5%
Compostable Organics	18.8%	12.0%	35.0%
Non-Compostable Organics	16.4%	25.3%	5.9%
Building Materials	37.8%	6.0%	2.5%
Electronic Waste	0.0%	1.0%	7.9%
Household Hazardous Waste	0.3%	0.1%	0.0%
Household Hygiene	0.6%	0.0%	2.6%
Bulky Objects	0.0%	0.0%	5.0%
Textiles	0.2%	21.6%	3.8%
Fines	0.4%	0.8%	0.2%
Other Waste	1.2%	0.0%	1.0%
Total	100%	100%	100%

3.2.3 Overall Self-Haul Garbage Composition

A comparison of each self-haul sample from AVLF and WCLF is provided in **Figure 6**. The results varied from load to load but overall compostable organics, textiles, building materials and non-compostable organics were often the largest categories audited in these samples.

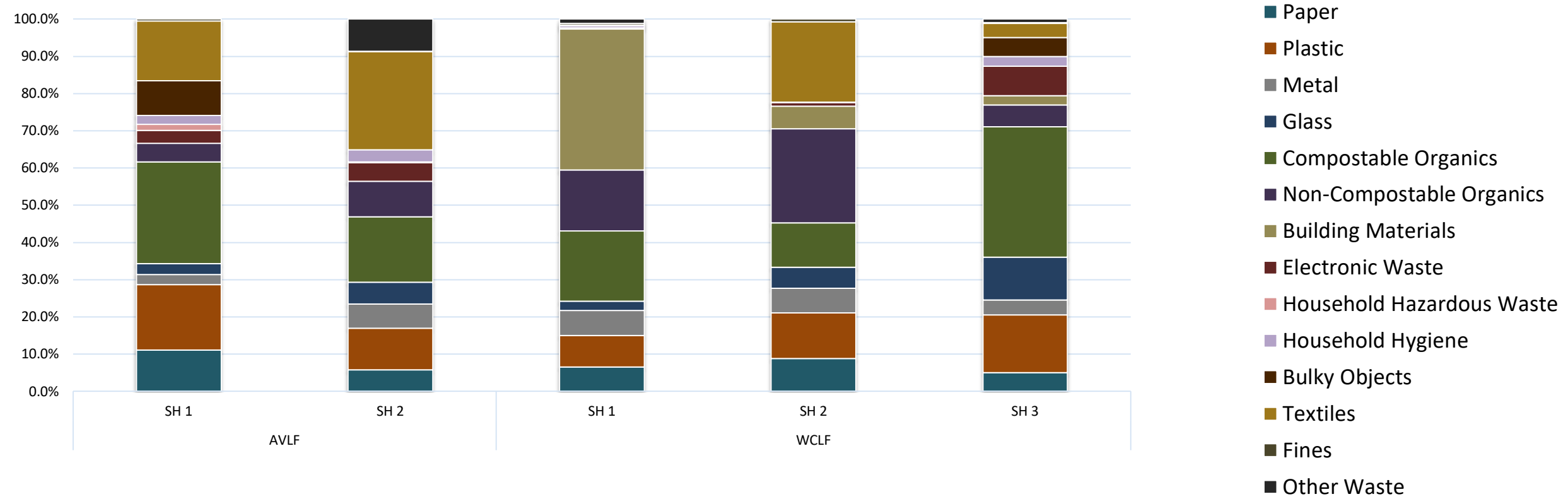


Figure 6: Overall Self-Haul Garbage Load Composition

3.3 ICI Results

Results for each of the landfills are detailed below for the audited inbound ICI loads.

3.3.1 AVL F ICI Results

Within the ICI sector at AVL F, seven samples were audited. These samples included waste collected from multi-family homes, grocery stores, small businesses, 'big box' stores and other commercial and industrial enterprises.

Figure 7 illustrates the weighted average primary material composition for the AVL F ICI sector. The largest material categories audited in these samples were compostable organics (23.9%), plastic (19.5%) and paper (12.1%). On average, 12.2% of the loads were food waste and an additional 6.1% was yard waste. Plastics, largely film packaging (6.9%) and durable plastic products (6.6%), made up a significant portion of ICI waste.

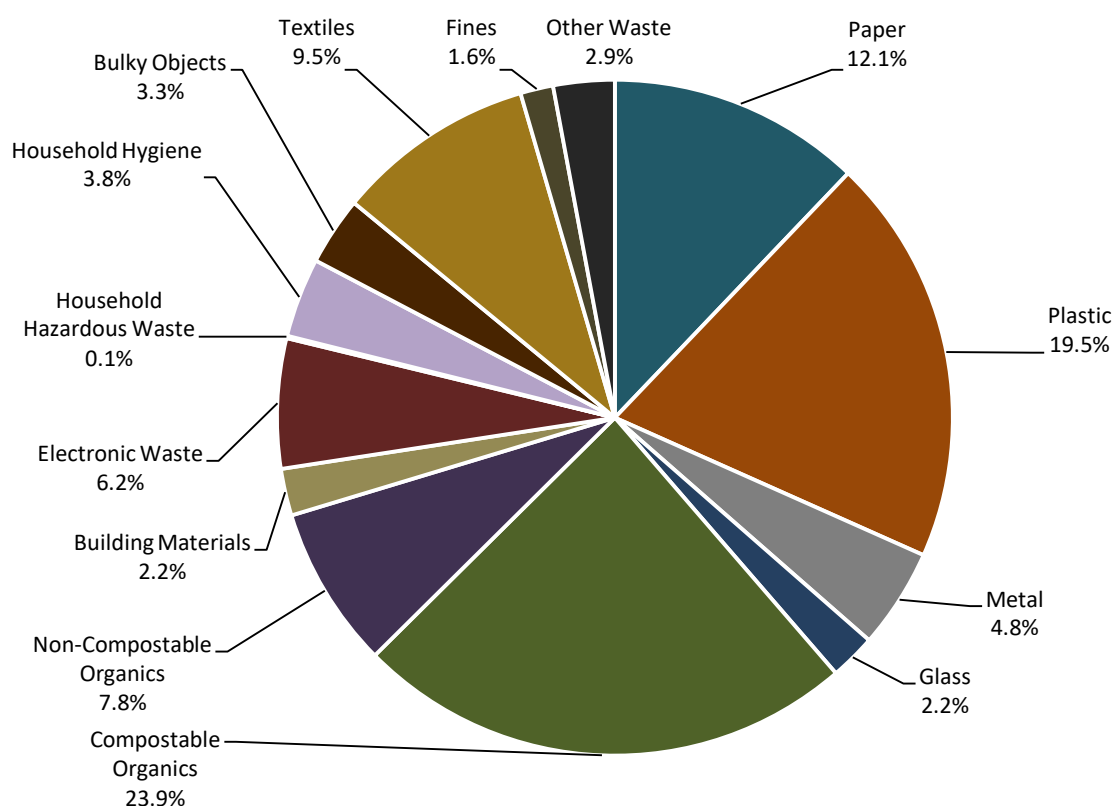


Figure 7: AVL F ICI Load Composition (Average)

3.3.1.1 ICI Results by Sample

This sub-section of the report describes the composition of each AVL F ICI sample. **Table 7** provides material category results numerically for each load.

ICI Load 1:

The first ICI load was largely plastics (22.8%), compostable organics (21.0%) and paper (16.1%). A lot of plastic film was audited in this load. It was observed that there were garbage bags full of plastic film.

ICI Load 2:

Once the audit team started to sort ICI load 2, it was noted that materials from Nanaimo were in the sample. This included evidence of waste from Thrifty's and The Noodle Box. This sample was largely compostable organics (46.0%) and plastic (27.5%).

ICI Load 3:

ICI load 3 was comprised largely of plastics (22.9%). This was mostly non-recyclable durable plastic products. Other major categories included compostable organics (17.7%) and paper (14.3%).

ICI Load 4:

The fourth ICI sample was mostly compostable organics (19.6%), textiles (18.0%) and household hygiene (11.7%). The hauler noted that there were a large number of multi-family households on this route.

ICI Load 5:

Compostable organics (27.4%) and plastics (23.2%) made up the majority of this sample. Recyclable ridged plastic packaging accounted for 6.1% of the material audited.

ICI Load 6:

The sixth load was mainly plastics (21.9%), electronics (19.7% - mostly computers – several in the sample) and paper (14.2%).

ICI Load 7:

The final ICI load was largely comprised of compostable organics (24.9%), bulky objects (22.9%) and paper (9.8%).

Table 7: AVL Composition of ICI Loads by Sample

Category	ICI Load 1	ICI Load 2	ICI Load 3	ICI Load 4	ICI Load 5	ICI Load 6	ICI Load 7
	Hauler	Hauler	Hauler	Hauler	Hauler	Hauler	Hauler
Paper	16.1%	16.3%	14.3%	5.0%	8.8%	14.2%	9.8%
Plastic	22.8%	29.0%	22.9%	10.2%	23.2%	21.9%	8.3%
Metal	1.9%	5.0%	2.6%	4.8%	10.0%	2.9%	6.2%
Glass	2.5%	1.1%	4.4%	3.0%	4.4%	0.0%	0.1%
Compostable Organics	21.0%	46.0%	17.7%	19.6%	27.4%	10.0%	24.9%
Non-Compostable Organics	1.8%	2.1%	13.8%	10.2%	1.2%	17.5%	7.7%
Building Materials	0.0%	0.0%	1.0%	4.7%	3.0%	0.4%	6.6%
Electronic Waste	12.5%	0.7%	0.7%	9.5%	0.0%	19.7%	0.4%
Household Hazardous Waste	0.0%	0.0%	0.1%	0.5%	0.0%	0.0%	0.2%
Household Hygiene	9.2%	0.0%	1.3%	11.7%	4.1%	0.3%	0.0%
Bulky Objects	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.9%
Textiles	9.1%	0.0%	12.0%	18.0%	11.4%	7.9%	8.3%
Fines	2.3%	0.0%	0.5%	1.0%	3.2%	3.3%	0.8%
Other Waste	0.9%	0.0%	8.8%	1.8%	3.3%	1.9%	3.9%
Total	100%	100%	100%	100%	100%	100%	100%

3.3.2

WCLF ICI Results

The majority of inbound waste disposed at the WCLF is ICI waste. This includes waste in the form of pallet trucks, fish farm waste, resort waste, multi-family buildings and commercial enterprises. **Figure 8** illustrates the composition of the weighted average for primary material categories. Compostable organics, plastics and textiles, represented 30.8%, 16.8% and 16.8% of the overall ICI results, respectively.

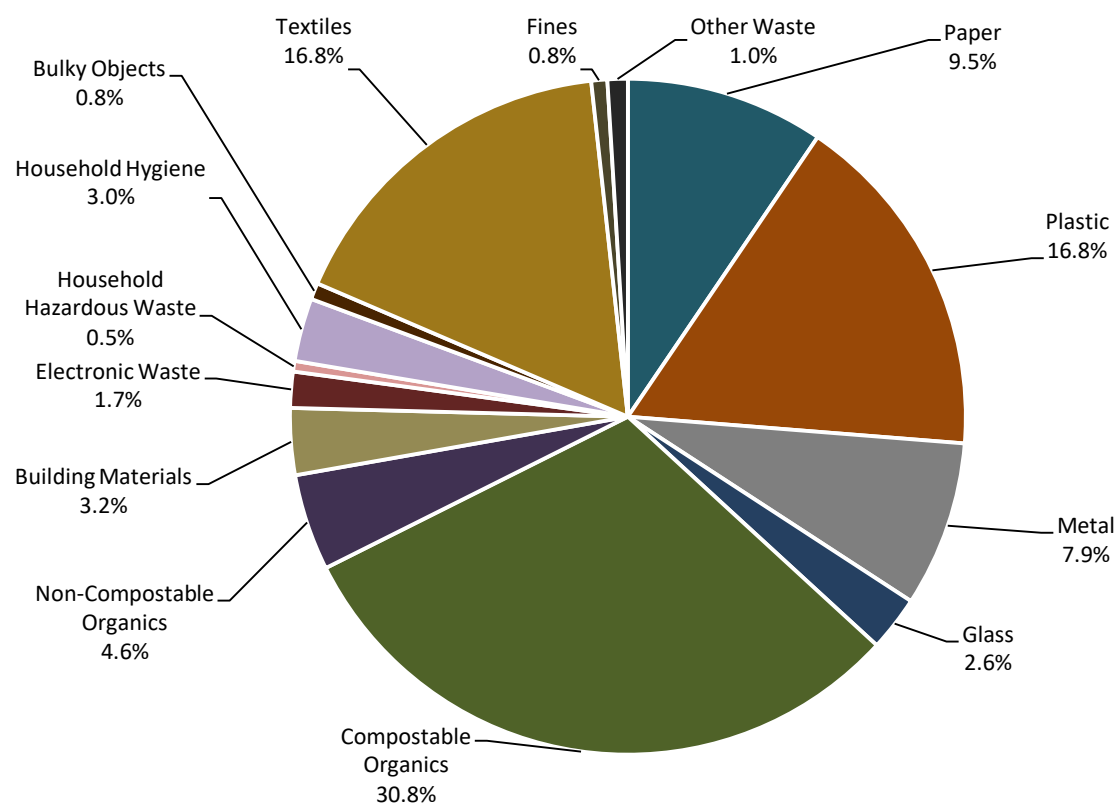


Figure 8: WCLF ICI Load Composition (Average)

3.3.2.1

ICI Results by Sample

This sub-section of the report describes the composition of each WCLF ICI sample. **Table 8** provides material category results numerically for each load.

ICI Load 1:

Inbound material from the first ICI load was primarily compostable organics (51.9%) and plastics (15.0%). This load was largely multi-family and resorts.

ICI Load 2:

The second ICI load was largely compostable organics (34.1%), plastic (20.6%) and paper (15.7%). Similar to ICI load 1, this sample was largely multi-family and resorts.

ICI Load 3:

ICI load 3 was comprised largely of compostable organics, plastic, textiles and metal. Each category represented 18.7%, 16.5%, 15.4% and 14.2% of the sample, respectively.

ICI Load 4:

Textiles (78.4%) was the bulk of this load. ICI load 4 was one of several inbound loads from the fish farm. As each load had very similar composition, only one fish farm load was selected to be audited. The textiles audited were all rope used on the fish farm.

ICI Load 5:

This ICI load was largely compostable organics (47.4%), plastic (16.8%) and paper (14.0%). It was noted in this sample that bags of waste had separated bags of recycling in them. This would likely indicate that at the source, waste is separated as recycling but not disposed of as such.

ICI Load 6:

The sixth ICI load was comprised mostly of compostable organics (42.6%), metal (15.4%) and plastic (13.4%). This load was from campsites and commercial enterprises.

ICI Load 7:

The final audited commercial load was largely compostable organics (19.8%), metal (16.7%) and plastic (16.1%). It was noted by the hauler that this material came from resorts. Observed in the sample were bags of waste which again had separated bags of recycling in them.

Table 8: WCLF Composition of ICI Loads by Sample

Category	ICI Load 1	ICI Load 2	ICI Load 3	ICI Load 4	ICI Load 5	ICI Load 6	ICI Load 7
	Hauler	Hauler	Hauler	Hauler	Hauler	Hauler	Hauler
Paper	7.4%	15.7%	6.5%	0.5%	14.0%	8.2%	14.2%
Plastic	15.0%	20.6%	16.5%	18.6%	16.8%	13.7%	16.1%
Metal	1.5%	6.0%	14.2%	0.0%	1.6%	15.4%	16.7%
Glass	1.9%	6.0%	3.2%	0.3%	2.2%	3.4%	1.4%
Compostable Organics	51.9%	34.1%	18.7%	0.9%	47.4%	42.6%	19.8%
Non-Compostable Organics	7.1%	0.0%	6.0%	0.0%	4.6%	4.1%	10.6%
Building Materials	0.0%	9.7%	11.0%	0.0%	0.0%	0.0%	1.6%
Electronic Waste	0.1%	0.0%	2.2%	1.2%	1.3%	0.9%	6.3%
Household Hazardous Waste	0.3%	0.0%	0.0%	0.0%	0.4%	1.9%	0.9%
Household Hygiene	10.4%	1.8%	4.5%	0.0%	1.6%	1.0%	1.9%
Bulky Objects	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.5%
Textiles	2.6%	2.8%	15.4%	78.4%	7.2%	8.2%	3.1%
Fines	0.7%	1.2%	1.1%	0.0%	0.3%	0.3%	1.8%
Other Waste	1.2%	2.0%	0.6%	0.0%	2.5%	0.4%	0.1%
Total	100%	100%	100%	100%	100%	100%	100%

3.3.3 Overall ICI Garbage Composition

A comparison of each self-haul sample from AVL and WCLF is provided in **Figure 9** (AVL) and **Figure 10** (WCLF). The results varied from load to load but overall compostable organics, textiles, plastics and metal were the largest primary categories of the ICI garbage.

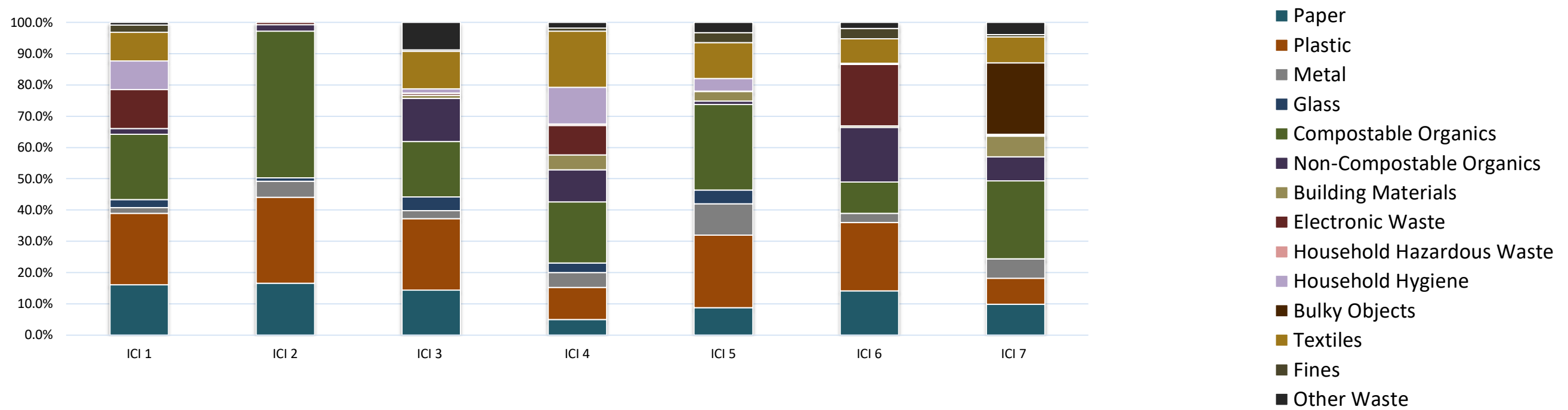


Figure 9: Overall ICI Garbage Load Composition AVLF

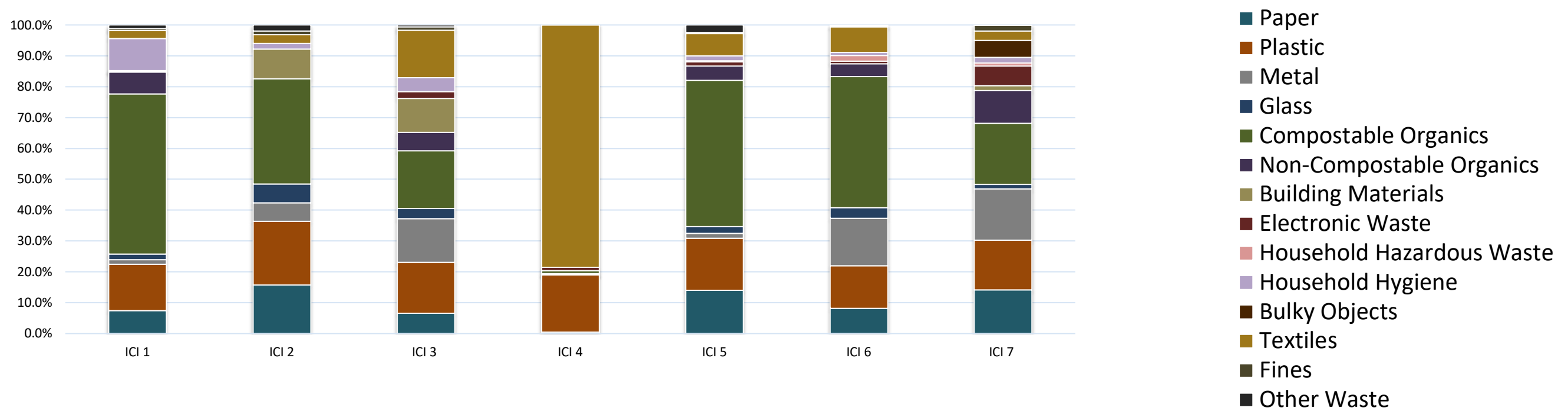


Figure 10: Overall ICI Garbage Load Composition WCLF

3.4 Overall ACRD Waste Composition Results By Landfill

All sectors were combined to determine the overall composition of waste at each of the landfill sites. **Figure 11** illustrates the overall composition of inbound material at AVL. Overall, 25.9% of waste is compostable organics, 18.7% is plastics and 10.8% is paper. These are the largest categories of waste entering AVL.

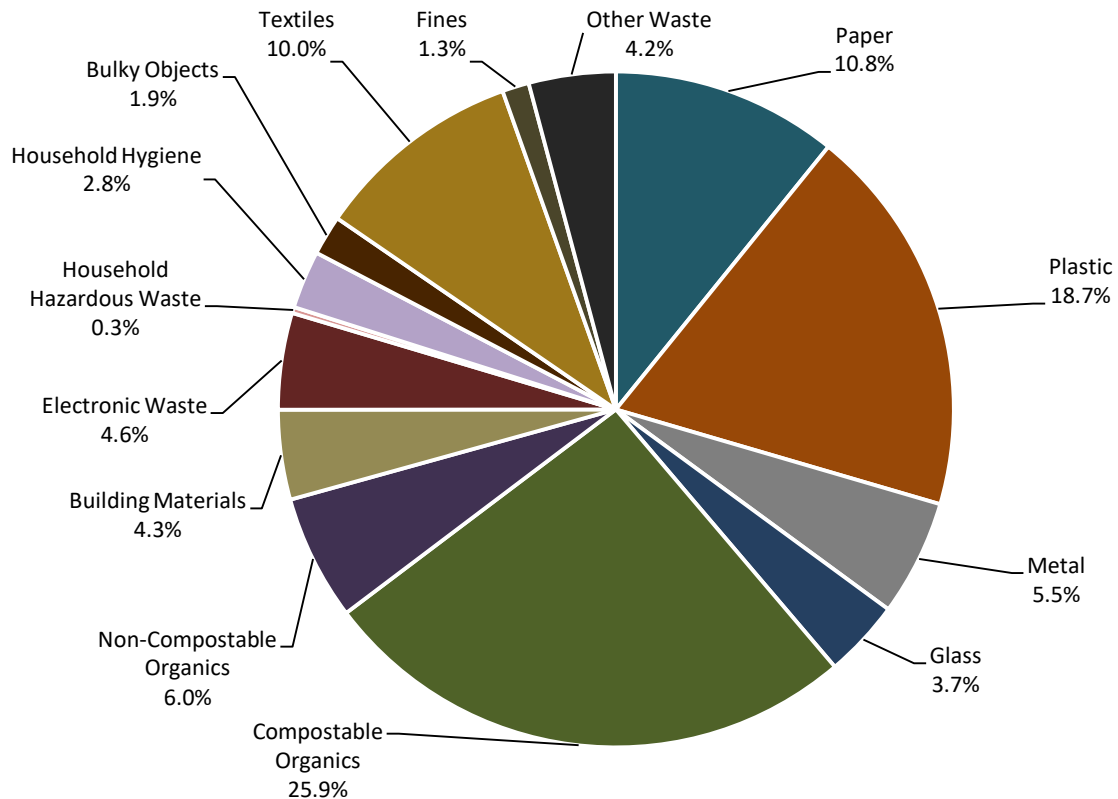


Figure 11: Overall Garbage Composition at AVL

Figure 12 illustrates the results of the overall composition of inbound materials at the WCLF. The largest material categories audited included compostable organics (30.6%), plastic (15.8%) and textiles (13.5%).

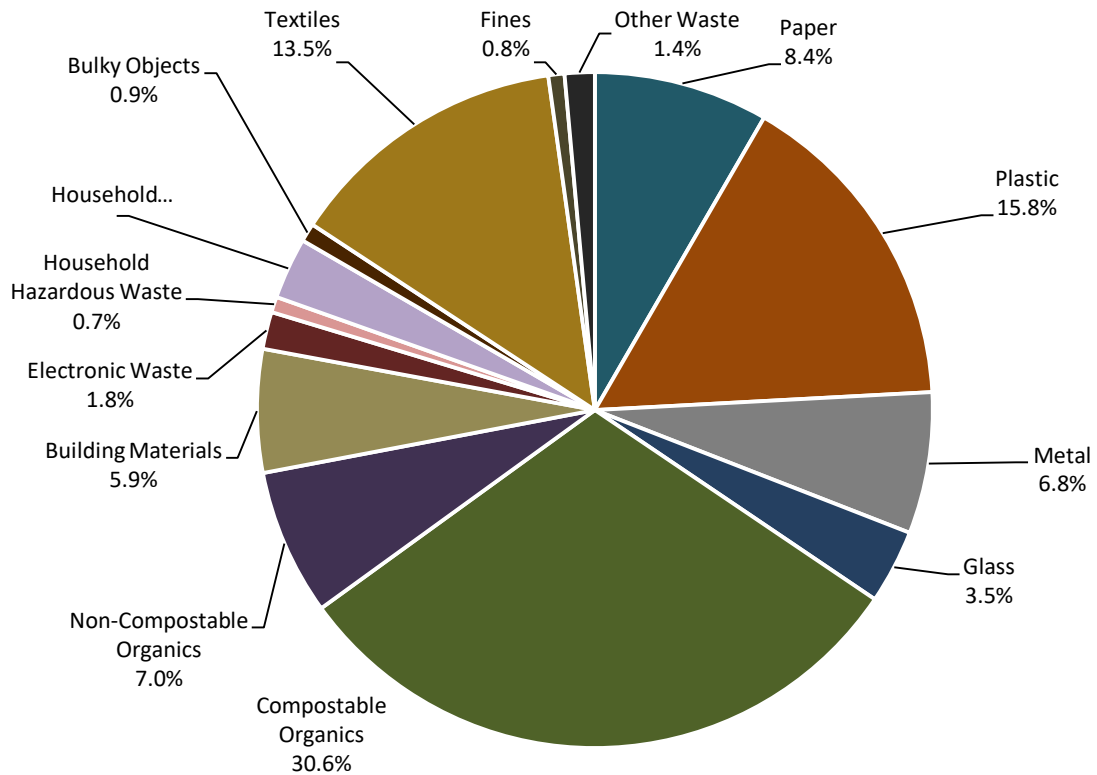


Figure 12: Overall Garbage Composition at WCLF

4.0 Potential for Additional Waste Diversion

This section provides insight into the amount of divertible materials being disposed for each waste sector at each of the two landfills. It should be noted that divertible items encompassed in this analysis include recyclable paper, recyclable cardboard, recyclable plastics (including beverage containers), recyclable metal (including beverage containers) and compostable materials. Compostable materials include food waste, yard waste and food soiled paper. Should a source separated organics collection program be implemented in the ACRD, it is assumed these items would be accepted. Diversion for materials collected by depots (metal, glass, Styrofoam, electronics and hazardous waste) are analyzed separately.

4.1 Residential Diversion Opportunities

Recyclable materials in the residential stream accounted for 8.8% (Beaufort Self-Haul) to 21.4% (Sprout Lake Curbside) of the garbage stream. The majority of recyclable materials was recyclable cardboard (2.9%-13.3%) and recyclable plastic (1.9%-12.0%). The municipal breakdown of recyclable materials in the garbage stream is presented in **Figure 13**. Compostable materials (food waste, yard waste and food soiled paper) in the residential stream accounted for 12.5% (Cherry Creek Self-Haul) to 44.2% (Ucuelet and Beaver Creek Self-Haul). The residential breakdown of compostable materials is provided in **Figure 14**.

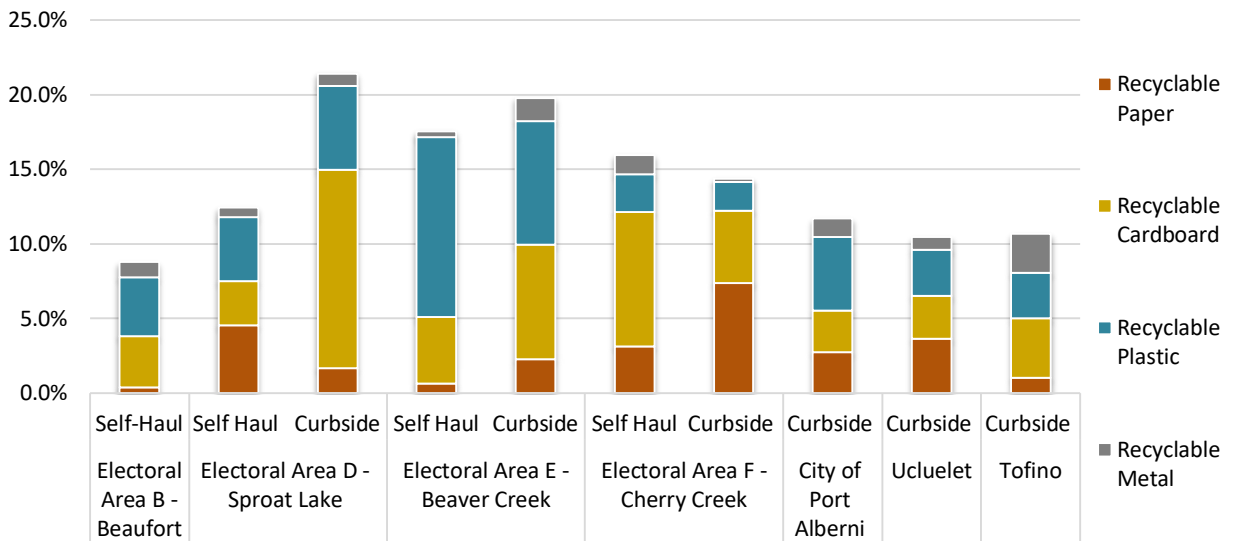


Figure 13: Residential Diversion Opportunities – Recycling

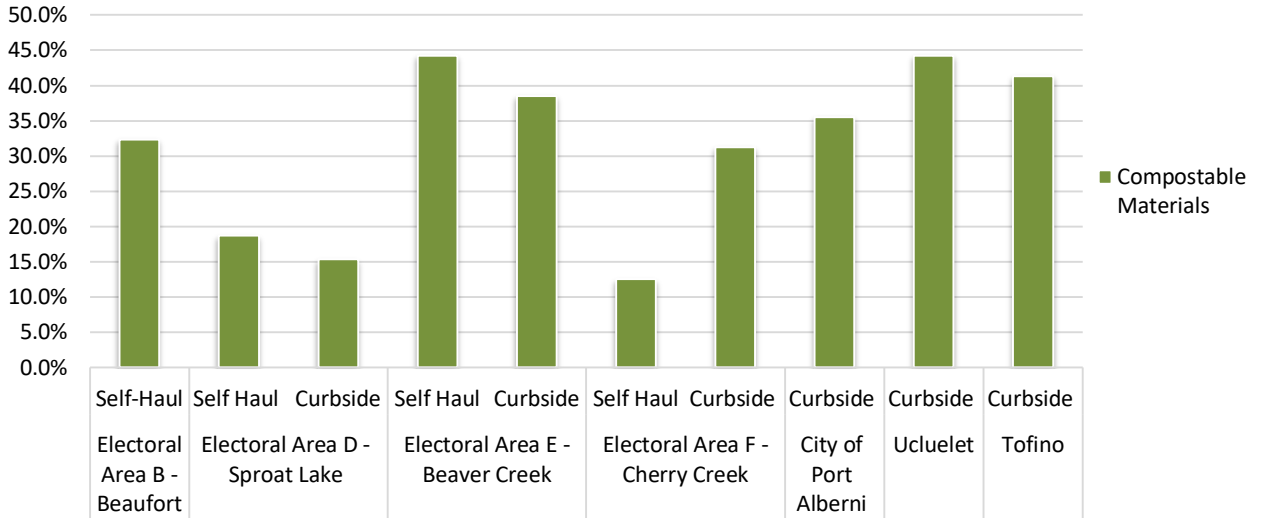


Figure 14: Residential Diversion Opportunities – Compostable Materials

4.2 Self-Haul Diversion Opportunities

Self-Haul material varied in the amount of recyclable and compostable materials audited in each load. Self-Haul sample 2 at AVLF had the least recyclable materials audited (7.4%) and self-haul load 1 at AVLF had the most at 14.0%. **Figure 15** illustrates these results for recyclable materials. The majority of the divertible materials were compostable organics. Compostable organics accounted for 12.0% (self-haul load 2 at WCLF) to 35.0% (self-haul load 3 at WCLF). Results for the percentage of materials that were compostable organics for all self-haul loads is provided in **Figure 16**.

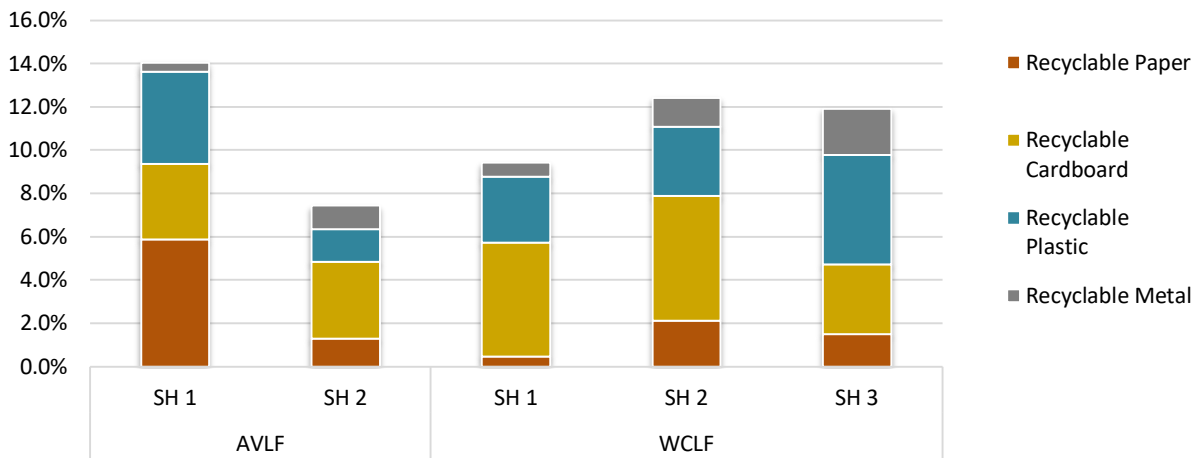


Figure 15: Self-Haul Diversion Opportunities – Recycling

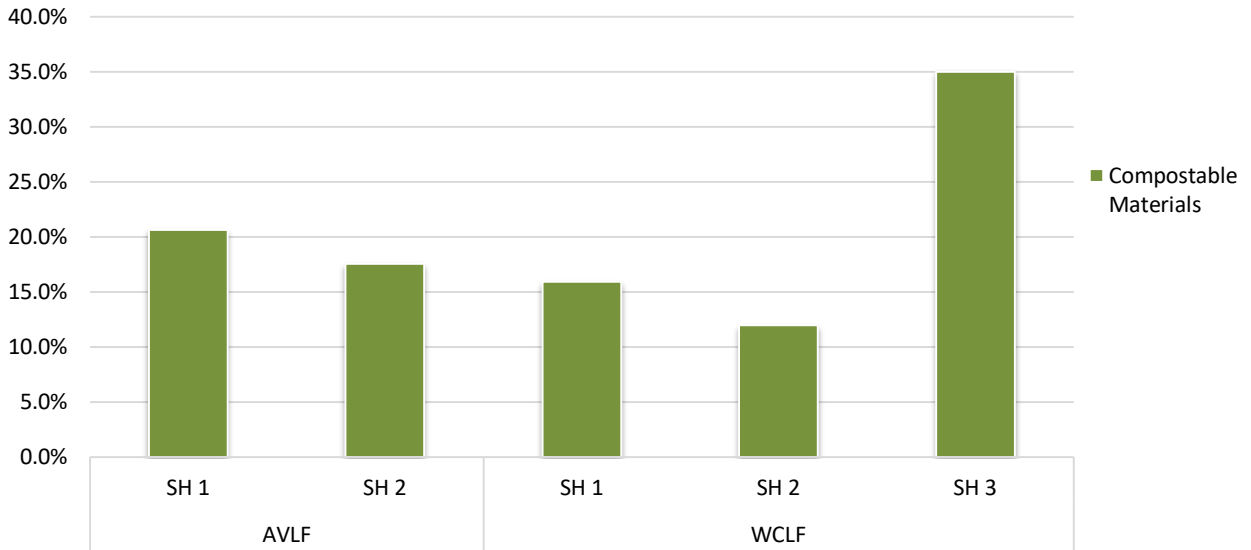


Figure 16: Self-Haul Diversion Opportunities – Compostable Materials

4.3 ICI Diversion Opportunity

The ICI sector had the largest range of audited divertible materials in the inbound material. The range of divertible materials was evident in the amount of recyclable and compostable materials. Recyclable materials ranged from 0.9% (ICI load 4 at the WCLF) to 21.7% (ICI load 1 at AVLF). The variation in the percentage of recyclable materials audited for the ICI sector is illustrated in **Figure 17**. Compostable materials in the ICI sector ranged from 0.9% (ICI load 4 at the WCLF) to 48.4% (ICI load 1 at WCLF). **Figure 18** provides the results per ICI sample for the audited percentage of compostable materials.

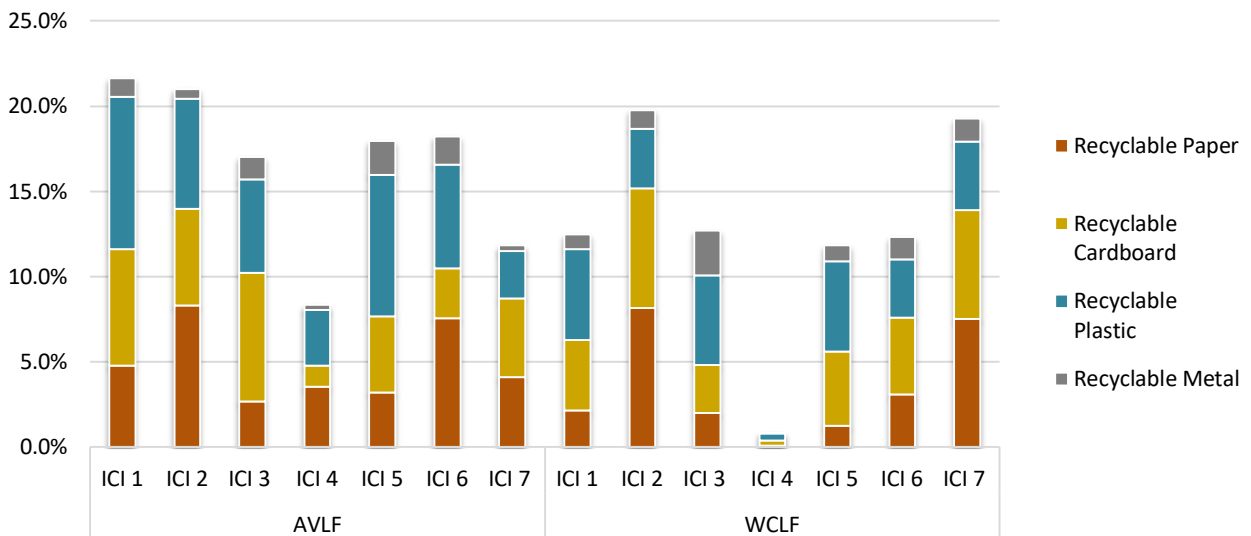


Figure 17: ICI Diversion Opportunities – Recycling

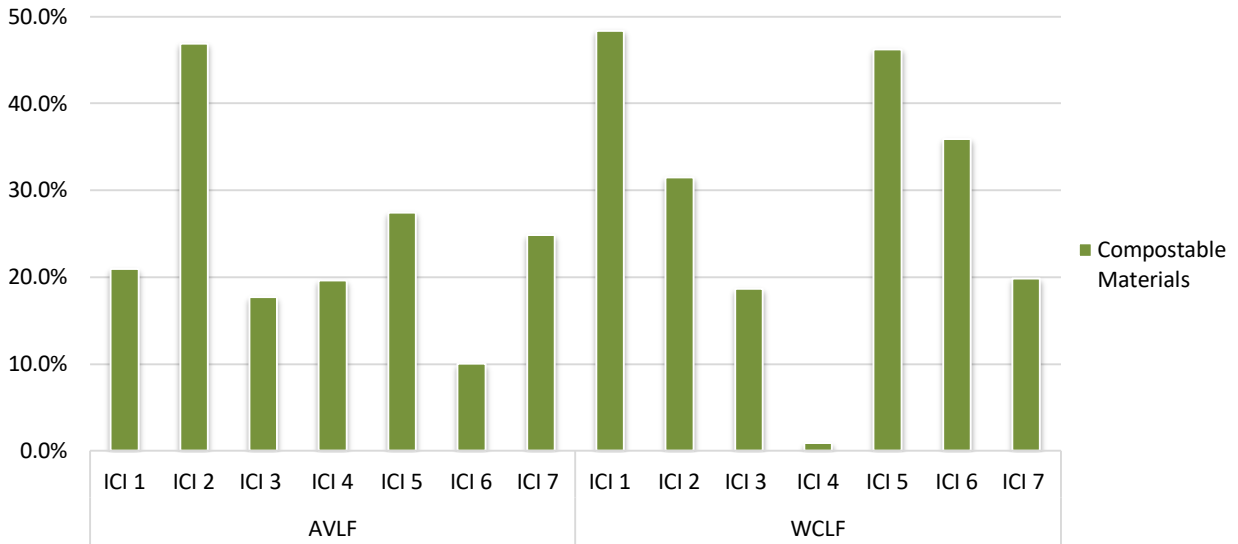


Figure 18: ICI Diversion Opportunities – Compostable Materials

4.4 Diversion Opportunities for Depot Materials

Materials accepted at depots around ACRD include scrap metal, glass, electronics and household hazardous waste. **Figure 19** illustrates the percentage of each sector’s waste stream (on average) that is material accepted at depots. It should be noted that these values do not include plastic film as all film was sorted together as a part of this study and not all plastic film is accepted at recycling depots. The ICI sectors at both the AVLF and WCLF had the largest amounts of depot materials in their waste streams (11.5% and 11.0%, respectively).

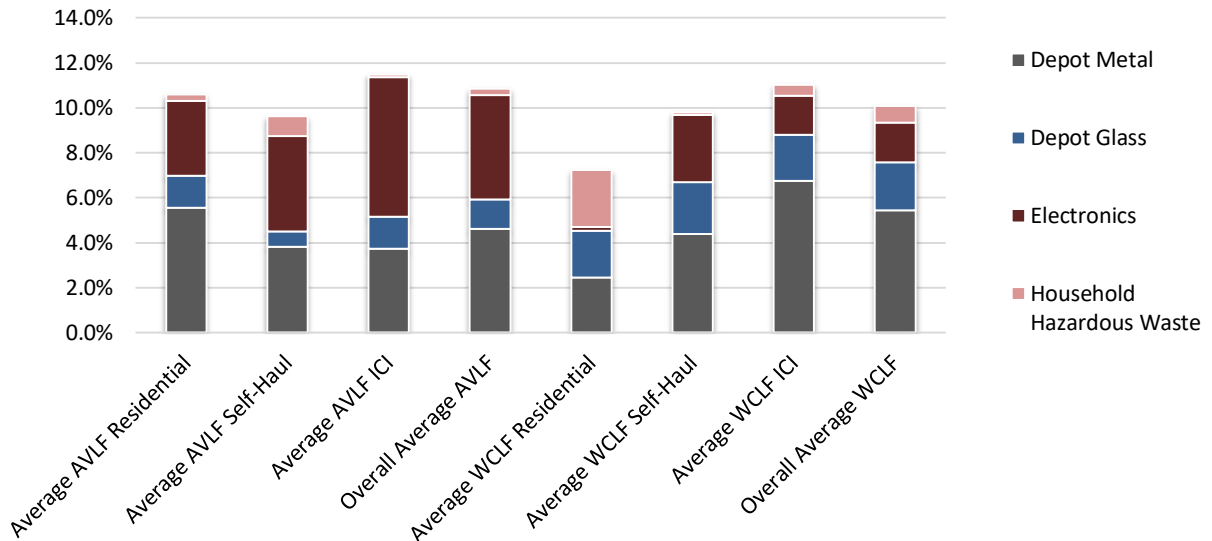


Figure 19: Overall Diversion Opportunities for Depot Materials

5.0 Conclusions

Throughout each of the studies, waste was delivered, subsampled, sorted and weighed. At AVLFL there were 14 samples audited and an additional 12 were sampled at the WCLF. Waste was sorted based on sector into 14 primary categories. Consistently throughout samples, sectors and landfills compostable organics was the largest primary category of waste representing 25.9% of the waste audited at AVLFL and 30.6% of waste audited at WCLF. Generally, the majority of compostable organics were food waste or yard waste. **Figure 20** illustrates the overall average results by sector and landfill graphically, and **Table 9** displays these results numerically.

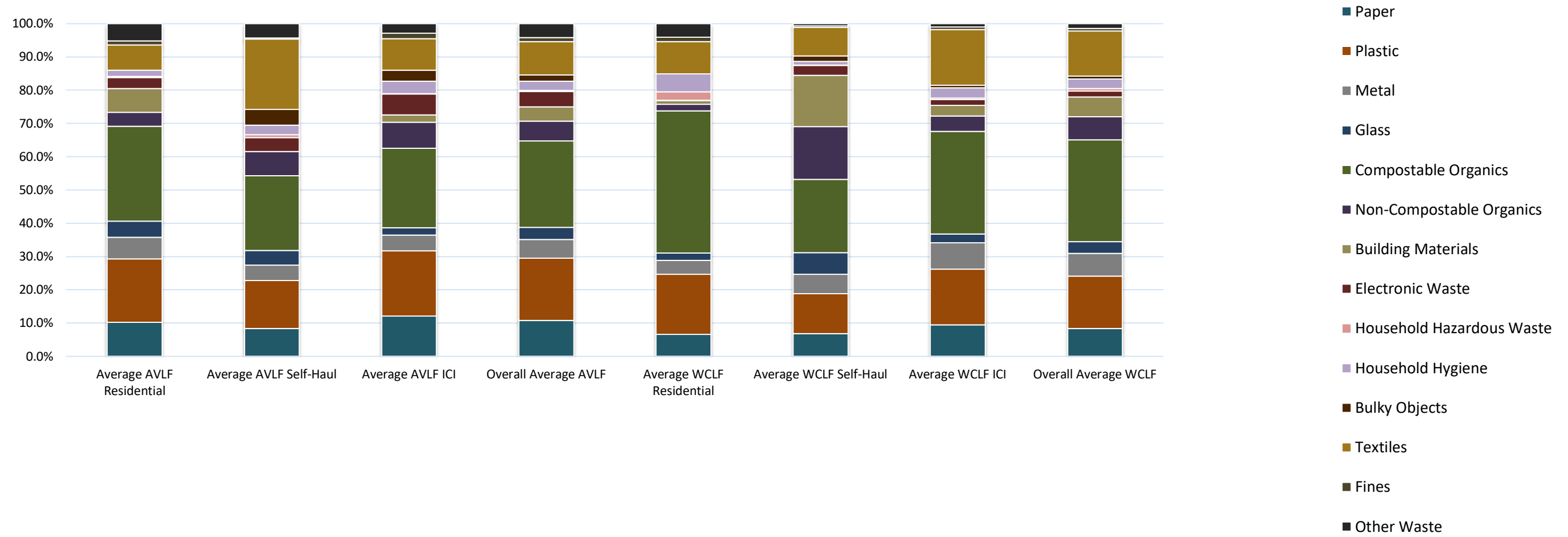


Figure 20: Overall Average Waste Composition per Sector and Landfill

Table 9: Overall Average Waste Composition Results per Sector and Landfill

Category	Average Residential (AVLF)	Average Self-Haul (AVLF)	Average ICI (AVLF)	Average Overall (AVLF)	Average Residential (WCLF)	Average Self-Haul (WCLF)	Average ICI (WCLF)	Average Overall (WCLF)
Paper	10.3%	8.4%	12.1%	10.8%	6.6%	6.8%	9.5%	8.4%
Plastic	19.0%	14.4%	19.5%	18.7%	18.0%	12.0%	16.8%	15.8%
Metal	6.5%	4.6%	4.8%	5.5%	4.2%	5.8%	7.9%	6.8%
Glass	4.8%	4.4%	2.2%	3.7%	2.2%	6.6%	2.6%	3.5%
Compostable Organics	28.6%	22.5%	23.9%	25.9%	42.8%	21.9%	30.8%	30.6%
Non-Compostable Organics	4.1%	7.3%	7.8%	6.0%	2.0%	15.9%	4.6%	7.0%
Building Materials	7.2%	0.0%	2.2%	4.3%	1.0%	15.4%	3.2%	5.9%
Electronic Waste	3.3%	4.2%	6.2%	4.6%	0.2%	3.0%	1.7%	1.8%
Household Hazardous Waste	0.3%	0.9%	0.1%	0.3%	2.5%	0.1%	0.5%	0.7%
Household Hygiene	1.8%	2.9%	3.8%	2.8%	5.4%	1.1%	3.0%	2.9%
Bulky Objects	0.0%	4.7%	3.3%	1.9%	0.0%	1.7%	0.8%	0.9%
Textiles	7.6%	21.1%	9.5%	10.0%	9.6%	8.5%	16.8%	13.5%
Fines	1.3%	0.3%	1.6%	1.3%	1.3%	0.5%	0.8%	0.8%
Other Waste	5.2%	4.3%	2.9%	4.2%	4.2%	0.7%	1.0%	1.4%
Total	100%	100%	100%	100%	100%	100%	100%	100%

All samples audited contained divertible materials, including materials that should have been collected through curbside programs or dropped off at a recycling depot. The overall potential for diversion by landfill and sector is illustrated in **Figure 21** and detailed in **Table 10**, but averaged between approximately 40 – 60%. The primary category with the greatest potential impact on diversion is compostable materials (average 27.3% of each load). Metal accepted at the depot for recycling (4.6% average), recyclable cardboard (4.5% average) and recyclable plastic (4.2%) are the next largest, divertible material categories found in the inbound samples.

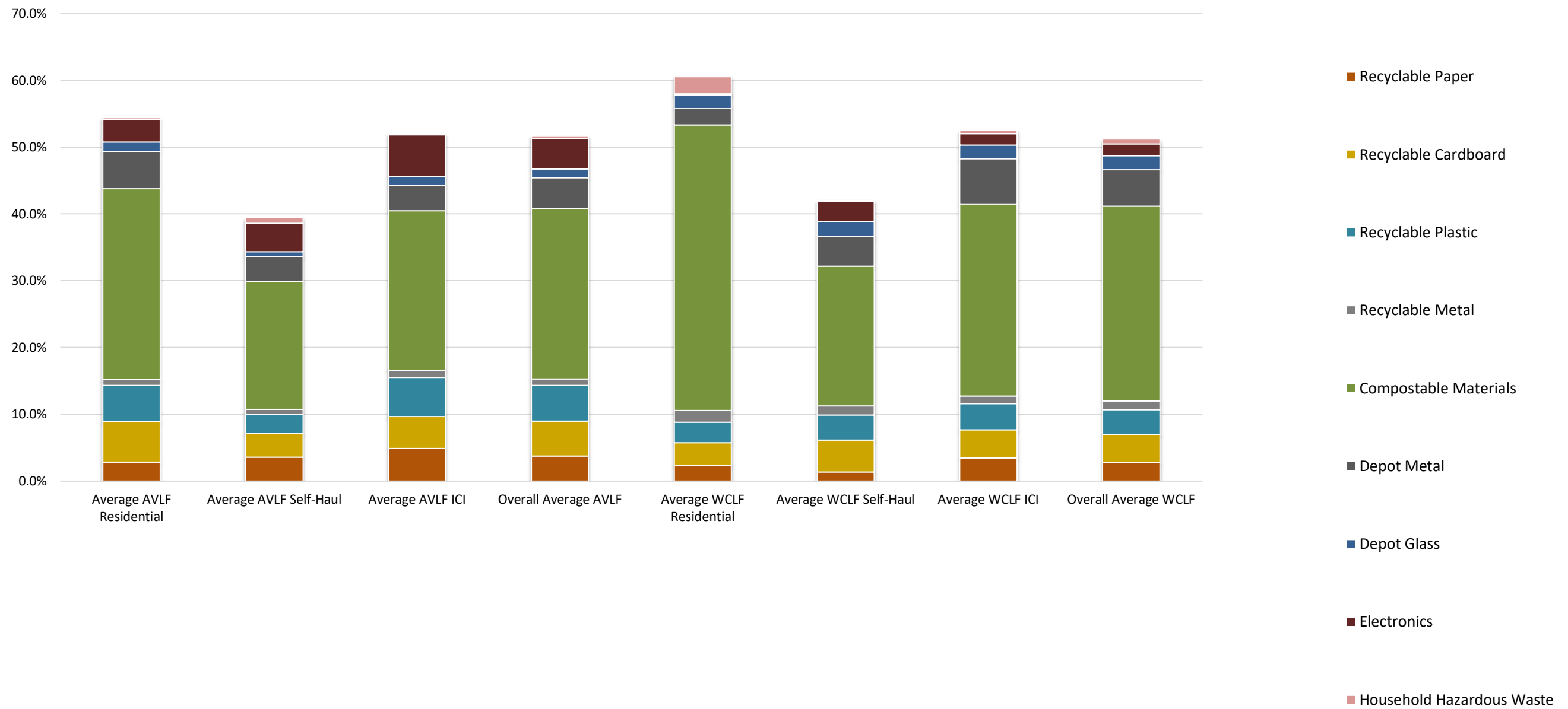


Figure 21: Overall Average Divertible Materials in the Garbage Stream

Table 10: Overall Potential for Additional Diversion by Sector and Landfill

Category	Average Residential (AVLF)	Average Self-Haul (AVLF)	Average ICI (AVLF)	Average Overall (AVLF)	Average Residential (WCLF)	Average Self-Haul (WCLF)	Average ICI (WCLF)	Average Overall (WCLF)
Recyclable Paper	2.8%	3.6%	4.9%	3.8%	2.3%	1.4%	3.5%	2.8%
Recyclable Cardboard	6.1%	3.5%	4.7%	5.2%	3.4%	4.8%	4.2%	4.2%
Recyclable Plastic	5.4%	2.9%	5.9%	5.3%	3.1%	3.8%	3.9%	3.7%
Recyclable Metal	0.9%	0.8%	1.0%	0.9%	1.7%	1.4%	1.2%	1.3%
Compostable Materials	28.6%	19.1%	23.9%	25.5%	42.8%	21.0%	28.8%	29.1%
Depot Metal	5.6%	3.8%	3.7%	4.6%	2.5%	4.4%	6.8%	5.5%
Depot Glass	1.4%	0.7%	1.4%	1.3%	2.1%	2.3%	2.0%	2.1%
Electronics	3.3%	4.2%	6.2%	4.6%	0.2%	3.0%	1.7%	1.8%
Household Hazardous Waste	0.3%	0.9%	0.1%	0.3%	2.5%	0.1%	0.5%	0.7%
Total	55.4%	39.5%	52.0%	51.6%	60.5%	42.0%	52.5%	51.2%

6.0 Project Limitations

This report was prepared exclusively for the purposes, project and locations outlined in this report. The report is based on the composition of the inbound material over a specific period of time as indicated in the report. Although a reasonable analysis was conducted by Dillon, Dillon's analysis was by no means exhaustive. Rather, Dillon's report represents a reasonable review of the available material, within the established scope and schedule.

Dillon prepared this report for the sole benefit of the Alberni-Clayoquot Regional District. The material in the report reflects Dillon's best judgement in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decision based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Appendix A

Collection Logs

Waste Facility	Sample Number	Date	Collection Time	Hauling Company	Truck Number	License Plate	Vehicle Type	Bin Size (cubic yards)	Fullness	Type of Load	Source of Load	Net Weight (kg)	Additional Notes
Alberni Valley Landfill	Residential 1 - Beauford	27-May-19	8:15 AM	Self-haul	-	-	Roll-off	40 yard	1/4	Residential	Beauford	790	Weekend collection of residential drop-off
Alberni Valley Landfill	ICI 1	27-May-19	11:00 AM	Waste Connections Canada	180865	2402 KR	Front Loader	40 yard	Full	ICI	Multi-family, commercial, grocery store	10,790	very compacted
Alberni Valley Landfill	ICI 2	27-May-19	1:10 PM	Waste Management	213408	LV 5021	Front Loader	40 yard	Full	ICI	Multi-family, commercial, Marks, dollar store	6,270	not very compacted
Alberni Valley Landfill	Residential 2 - Port Alberni	27-May-19	3:20 PM	City of Polt Alberni	402	MR 4511	Side Loader	40 yard	Full	Residential	Wallace st to Burg st	8,580	very compacted
Alberni Valley Landfill	Residential 3.1 - Sprout Lake	28-May-19	9:30 AM	Self-haul	-	-	Roll-off	40 yard	1/4	Residential	Sprout Lake drop off	640	Took 50 kg sample, will take 50 kg sample from municipal curbside collection
Alberni Valley Landfill	ICI 3	28-May-19	9:40 AM	Waste Connections Canada	180865	2402 KR	Front Loader	40 yard		ICI	Multi-family mostly, Mcdonalds, commercial	8,030	not very compacted
Alberni Valley Landfill	Residential 4.1 - Beaver Creek	28-May-19	1:10 PM	Self-haul	-	-	Roll-off	40 yard	1/8	Residential	Beaver Creek self-haul	280	Took 50 kg sample, will take 50 kg sample from municipal curbside collection
Alberni Valley Landfill	Residential 3.2 - Sprout Lake	28-May-19	2:10 PM	Midland	-	ML 6377	Small hauler	16-18 cubic yards	Full	Residential	Sprout Lake Single-family Curbside collection	730	Curbside collection vehicle, took 50 kg sample
Alberni Valley Landfill	Self-haul 1	28-May-19	3:20 PM	Self-haul	-	-	Roll-off	40 yard	7/8	Residential self-haul	Alberni-Clayoquot Regional District	530	
Alberni Valley Landfill	Residential 5.1 - Cherry Creek	29-May-19	8:15 AM	Self-haul	-	-	Roll-off	40 yard	1/4	Residential	Cherry Creek	280	Took 50 kg sample, will take 50 kg sample from municipal curbside collection
Alberni Valley Landfill	ICI 4	29-May-19	8:20 AM	Waste Connections Canada	180865	2402 KR	Front Loader	40 yard	Full	ICI	Lots of multi-family, BC Hydro, Mall, Buy-Low Foods	4,300	
Alberni Valley Landfill	Self-haul 2 (Residential substitution Bamfield)	29-May-19	11:05 AM	Self-haul	-	-	Roll-off	40 yard	1/3	Residential drop-off	Alberni-Clayoquot Regional District	290	Substituion for Bamfield - hauler error on collection
Alberni Valley Landfill	Residential 4.2 - Beaucreek	29-May-19	2:20 PM	Midland	-	ML 6377	Small hauler	16-18 cubic yards	-	Full	Residential drop-off	1,110	Curbside collection vehicle, took 50 kg sample
Alberni Valley Landfill	ICI 5	29-May-19	3:05 PM	Nicklin Waste Disposal	-	MT 1725	Front Loader	-	Full	ICI	Mostly commercial, some multi-family	8,340	Very industrial, oil
Alberni Valley Landfill	ICI 6	30-May-19	12:20 PM	Nicklin Waste Disposal	-	BT 1725	Front Loader	-	Full	ICI	Clam Bucket, Multi-family, commercial, Canadian Tire	8,290	Very smelly
Alberni Valley Landfill	ICI 7	30-May-19	1:25 PM	Waste Management	434	NE 4762	Front Loader	-	Full	ICI	Mostly commnity, some Multi-family	5,020	Mostly loose, medium compaction
Alberni Valley Landfill	Residential 5.2 - Cherry Creek	30-May-19	2:15 PM	Midland	-	ML 6571	Small hauler	16-18 cubic yards	Full	Residential	Cheery Creek	1,570	Curbside collection vehicle, took 50 kg sample
West Coast Landfill	Self-haul 1	18-Jun-19	10:00 AM	Self-haul	-	-	Roll-off	40 yard	2/3	Self-haul	All over	1,730	Lots of brush

Waste Facility	Sample Number	Date	Collection Time	Hauling Company	Truck Number	License Plate	Vehicle Type	Bin Size (cubic yards)	Fullness	Type of Load	Source of Load	Net Weight (kg)	Additional Notes
West Coast Landfill	ICI 1	18-Jun-19	12:10 PM	Ucluelet Rental Centre	FL 1	ML 6461	Front Loader	-	1/3	ICI	Condo, 2 resorts	1,110	mattress in load
West Coast Landfill	ICI 2	18-Jun-19	1:05 PM	Son Bird	1	JR 0196	Front Loader	-	Full	ICI	Multi-family, resorts	6,470	-
West Coast Landfill	Residential 1 - Ucluelet	18-Jun-19	3:15 PM	Son Bird	-	JR 0189	Side Loader	-	Full	Residential	Ucluelet	5,420	All Ucluelet
West Coast Landfill	Self-haul 2	19-Jun-19	9:40 AM	Self-haul	-	-	Roll-off	40 yard	Full	Self-haul	All over	3,000 estimate	2 mattresses in load; lots of bursh; didn't weigh (no scale ticket)
West Coast Landfill	ICI 3	19-Jun-19	10:05 AM	Son Bird	1	JR 0196	Front Loader	-	Full	ICI	Restaurant, Appartments, Reserve	6,780	-
West Coast Landfill	ICI 4	19-Jun-19	1:05 PM	Crow Excavating & Trucking	-	ET 1146	Roll-off	30 yard	Full	ICI	Fish Farm	2,250	-
West Coast Landfill	ICI 5	19-Jun-19	1:15 PM	Son Bird	1	JR 0196	Front Loader	-	2/3	ICI	Co-Op, Reserve, Ucluelet, Resort	2,350	-
West Coast Landfill	Shelf-haul 3	20-Jun-19	8:05 AM	Self-haul	-	-	Roll-off	40 yard	Full	Self-haul	All over	1,850	2 mattresses in load; lots of brush
West Coast Landfill	ICI 6	20-Jun-19	12:40 PM	Son Bird	1	JR 0196	Front Loader	-	Full	ICI	Tofino campsites commerical only	6,400	-
West Coast Landfill	ICI 7	20-Jun-19	1:35 PM	Son Bird	-	LIC 0687	Front Loader	-	Full	ICI	Commercial; Ucluelet	6,600	Stores, multi-family, resorts
West Coast Landfill	Residential 2	20-Jun-19	2:15 PM	Son Bird	-	JR 0189	Side Loader	-	Full	Residential	Tofino	5,230	-

Appendix B

Detailed Audit Categories

Primary	Secondary	Description
Paper	Recyclable Paper	Office paper, newspaper, coffee cups
	Cardboard	Corrugated cardboard, boxboard
	Other	Non-RecycleBC, books, tar paper, composites
Plastic	Deposit	Refundable plastic bottles and Tetrapacks
	Rigid recyclable packaging	#1-7, uncoded,
	Durable Products	Non-packaging plastics,
	Syrofoam	Expanded Polystyrene
	Hot and Cold Beverage Containers (Polycoat)	Coffee cups, cold drink cups (all polycoat)
	Film Packaging	Any type of plastic bags including retail bags, wrap, Ziploc bags, biodegradable/compostable plastics
Metal	Deposit	Refundable cans, drink cans
	Recyclable	Soup cans, aluminium foil
	Other	Metal objects
Glass	Deposit	Refundable glass bottles
	Recyclable	Glass containers
	Other	Non-RecycleBC, glass or ceramic objects
Compostable Organics	Food Waste	Any food
	Yard Waste	Yard trimming, branches, manure
	Compostable/food-soiled Paper	Napkins, paper towels, pizza boxes
	Clean Wood	Pallets, plywood (without paint, treatment or glue)
Non-Compostable Organics	Dirty/treated Wood	Plywood, glulam, flakeboard, stained or painted wood, treated
	Other	Leather, rubber, wax (Non-clothing)
Building Materials	Building Materials	Carpet, gypsum, asphalt, insulation, aggregate
Electronic Waste	Electronic Waste	Anything with a cord or battery operated
Household Hazardous Waste (HHW)	EPR	Batteries, products, mercury containing, paints, oils
	Non-EPR	Sharps, glues, caulking
Household Hygiene	Household Hygiene	Diapers, hygiene products, personal care and pet waste
Bulky Objects	Bulky Objects	Furniture, appliances, mattresses
Textiles	Textiles	Clothing, linens, bags, shoes
Fines	Fines	Fines <1" size
Other Waste	Other Waste	All other waste

Appendix C

Detailed Audit Results

Sample Number	Residential 1 - Beauford		ICI 1		ICI 2		Residential 2 - Port Alberni		ICI 3		Residential 3 - Sprout Lake				Residential 4 - Beaver Creek			
Sub-sample Number	-		-		-		-		-		3.1 Self-haul		3.2 Curbside Collection		4.1 Self-haul		4.2 Curbside collection	
Date Audited	27-May-19		27-May-19		27-May-19		27-May-19 (Audited 28-May-19)		28-May-19		28-May-19		28-May-19		28-May-19		29-May-19	
Time Audited	8:30 AM		11:00 AM		1:10 PM		3:30 PM		9:45 AM		9:30 AM		2:10 PM		1:10 PM		2:10 PM	
Load Type	Residential		ICI		ICI		Residential		ICI		Residential		Residential		Residential		Residential	
Notes	-		-		lots of waste from Nanaimo/Tri-Cities (thriftiest and noodle box)		-		-		-		-		-		-	
Weather	Sunny, warm		Sunny, warm		Sunny, hot		Sunny, hot		Sunny, warm		Sunny, hot		Sunny, hot		Sunny, hot		Sunny, hot	
Net Weight of Sub-sample (kg)	113.9		133.05		117.65		140.05		137.85		77.7		75.65		66.65		73.9	
Net Weight Inbound Load (kg)	790		10,790		6,270		8,580		8,030		640		730		280		1,110	
Material Category	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)
Paper																		
Recyclable Paper	0.40	0.4%	6.20	4.8%	8.10	8.3%	3.80	2.7%	3.45	2.7%	3.50	4.6%	1.25	1.7%	0.40	0.6%	1.65	2.3%
Cardboard	3.65	3.5%	8.80	6.8%	5.50	5.7%	3.90	2.8%	9.75	7.6%	2.25	2.9%	9.95	13.3%	2.75	4.4%	5.55	7.7%
Other	0.50	0.5%	5.85	4.5%	2.55	2.6%	0.00	0.0%	5.30	4.1%	2.85	3.7%	2.25	3.0%	0.25	0.4%	0.40	0.6%
Subtotal	4.55	4.3%	20.85	16.1%	16.15	16.6%	7.70	5.5%	18.50	14.3%	8.60	11.2%	13.45	18.0%	3.40	5.5%	7.60	10.5%
Plastic																		
Deposit	0.10	0.1%	0.55	0.4%	1.65	1.7%	0.55	0.4%	0.85	0.7%	0.10	0.1%	0.15	0.2%	0.20	0.3%	0.25	0.3%
Rigid recyclable packaging	3.50	3.3%	9.25	7.2%	1.95	2.0%	5.65	4.1%	5.35	4.1%	2.75	3.6%	3.45	4.6%	6.70	10.8%	5.15	7.1%
Durable products	14.30	13.5%	6.70	5.2%	8.90	9.1%	6.65	4.8%	15.35	11.9%	2.95	3.8%	4.60	6.2%	1.00	1.6%	3.45	4.8%
Styrofoam	0.65	0.6%	0.20	0.2%	0.85	0.9%	0.45	0.3%	0.75	0.6%	0.25	0.3%	0.30	0.4%	0.15	0.2%	0.20	0.3%
Film Packaging	5.25	5.0%	11.00	8.5%	10.70	11.0%	8.95	6.4%	6.40	5.0%	6.15	8.0%	4.20	5.6%	3.95	6.4%	2.95	4.1%
Hot and Cold Drink Cups (Polycat)	0.55	0.5%	1.75	1.4%	2.70	2.8%	0.65	0.5%	0.85	0.7%	0.45	0.6%	0.60	0.8%	0.55	0.9%	0.60	0.8%
Subtotal	24.35	23.0%	29.45	22.8%	26.75	27.5%	22.90	16.5%	29.55	22.9%	12.65	16.5%	13.30	17.8%	12.55	20.3%	12.60	17.4%
Metal																		
Deposit	0.35	0.3%	0.30	0.2%	0.20	0.2%	0.20	0.1%	0.85	0.7%	0.05	0.1%	0.30	0.4%	0.10	0.2%	1.10	1.5%
Recyclable	0.75	0.7%	1.15	0.9%	0.35	0.4%	1.50	1.1%	0.85	0.7%	0.45	0.6%	0.30	0.4%	0.15	0.2%	0.00	0.0%
Other	6.05	5.7%	1.00	0.8%	4.40	4.5%	4.10	2.9%	1.60	1.2%	15.05	19.6%	1.30	1.7%	2.05	3.3%	5.60	7.7%
Subtotal	7.15	6.8%	2.45	1.9%	4.95	5.1%	5.80	4.2%	3.30	2.6%	15.55	20.2%	1.90	2.5%	2.30	3.7%	6.70	9.3%
Glass																		
Deposit	0.00	0.0%	0.95	0.7%	1.05	1.1%	0.00	0.0%	3.35	2.6%	0.00	0.0%	1.05	1.4%	0.00	0.0%	1.50	2.1%
Recyclable	0.70	0.7%	0.70	0.5%	0.00	0.0%	0.65	0.5%	0.70	0.5%	0.45	0.6%	0.85	1.1%	1.30	2.1%	1.50	2.1%
Other	2.55	2.4%	1.60	1.2%	0.00	0.0%	0.90	0.6%	1.60	1.2%	0.65	0.8%	9.70	13.0%	0.05	0.1%	4.45	6.1%
Subtotal	3.25	3.1%	3.25	2.5%	1.05	1.1%	1.55	1.1%	5.65	4.4%	1.10	1.4%	11.60	15.5%	1.35	2.2%	7.45	10.3%
Compostable Organics																		
Food Waste	25.05	23.7%	17.85	13.8%	17.45	17.9%	37.70	27.1%	17.45	13.5%	8.45	11.0%	8.80	11.8%	23.05	37.3%	23.20	32.0%
Yard Waste	7.10	6.7%	0.70	0.5%	22.90	23.5%	4.55	3.3%	0.85	0.7%	4.75	6.2%	0.15	0.2%	1.75	2.8%	0.00	0.0%
Compostable/Food Soiled Paper	2.00	1.9%	8.55	6.6%	5.30	5.4%	7.10	5.1%	4.50	3.5%	1.15	1.5%	2.55	3.4%	2.55	4.1%	4.70	6.5%
Clean Wood	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	34.15	32.3%	27.10	21.0%	45.65	46.9%	49.35	35.5%	22.80	17.7%	14.35	18.7%	11.50	15.4%	27.35	44.2%	27.90	38.5%
Non-Compostable Organics																		
Dirty/Treated Wood	4.95	4.7%	2.30	1.8%	0.15	0.2%	1.60	1.2%	17.80	13.8%	7.45	9.7%	1.90	2.5%	0.35	0.6%	0.60	0.8%
Other	0.00	0.0%	0.00	0.0%	1.90	2.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	4.95	4.7%	2.30	1.8%	2.05	2.1%	1.60	1.2%	17.80	13.8%	7.45	9.7%	1.90	2.5%	0.35	0.6%	0.60	0.8%
Building Materials																		
Building Materials	4.25	4.0%	0.00	0.0%	0.00	0.0%	16.20	11.7%	1.30	1.0%	5.90	7.7%	0.25	0.3%	0.55	0.9%	4.50	6.2%
Subtotal	4.25	4.0%	0.00	0.0%	0.00	0.0%	16.20	11.7%	1.30	1.0%	5.90	7.7%	0.25	0.3%	0.55	0.9%	4.50	6.2%
Electronic Waste																		
Electronic Waste	6.95	6.6%	16.15	12.5%	0.70	0.7%	3.60	2.6%	0.85	0.7%	0.85	1.1%	2.75	3.7%	5.95	9.6%	0.45	0.6%
Subtotal	6.95	6.6%	16.15	12.5%	0.70	0.7%	3.60	2.6%	0.85	0.7%	0.85	1.1%	2.75	3.7%	5.95	9.6%	0.45	0.6%
Household Hazardous Waste																		
EPR	0.20	0.2%	0.00	0.0%	0.00	0.0%	0.10	0.1%	0.10	0.1%	0.10	0.1%	0.00	0.0%	0.00	0.0%	0.30	0.4%
Non-ERP	0.85	0.8%	0.00	0.0%	0.00	0.0%	0.50	0.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	1.05	1.0%	0.00	0.0%	0.00	0.0%	0.60	0.4%	0.10	0.1%	0.10	0.1%	0.00	0.0%	0.00	0.0%	0.30	0.4%
Household Hygiene																		
Household Hygiene	2.00	1.9%	11.90	9.2%	0.00	0.0%	12.75	9.2%	1.65	1.3%	0.25	0.3%	0.45	0.6%	0.10	0.2%	0.05	0.1%
Subtotal	2.00	1.9%	11.90	9.2%	0.00	0.0%	12.75	9.2%	1.65	1.3%	0.25	0.3%	0.45	0.6%	0.10	0.2%	0.05	0.1%
Bulky Objects																		
Bulky Objects	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Textiles																		
Textiles	5.20	4.9%	11.75	9.1%	0.00	0.0%	10.10	7.3%	15.50	12.0%	6.25	8.1%	5.00	6.7%	6.75	10.9%	1.45	2.0%
Subtotal	5.20	4.9%	11.75	9.1%	0.00	0.0%	10.10	7.3%	15.50	12.0%	6.25	8.1%	5.00	6.7%	6.75	10.9%	1.45	2.0%
Fines																		
Fines	0.20	0.2%	2.95	2.3%	0.00	0.0%	1.30	0.9%	0.60	0.5%	0.55	0.7%	2.70	3.6%	1.10	1.8%	1.20	1.7%
Subtotal	0.20	0.2%	2.95	2.3%	0.00	0.0%	1.30	0.9%	0.60	0.5%	0.55	0.7%	2.70	3.6%	1.10	1.8%	1.20	1.7%
Other Waste																		
Other Waste	7.70	7.3%	1.15	0.9%	0.00	0.0%	5.60	4.0%	11.35	8.8%	3.20	4.2%	9.95	13.3%	0.10	0.2%	1.60	2.2%
Subtotal	7.70	7.3%	1.15	0.9%	0.00	0.0%	5.60	4.0%	11.35	8.8%	3.20	4.2%	9.95	13.3%	0.10	0.2%	1.60	2.2%
Total	105.75																	

Sample Number	Self-haul 1		ICI 4		Residential 5 - Cherry Creek				Self-haul 2		ICI 5		ICI 6		ICI 7	
Sub-sample Number	-		-		5.1 Self-haul		5.2 Curbside collection		-		-		-		-	
Date Audited	28-May-19		29-May-19		28-May-19		30-May-19		29-May-19		29-May-19		30-May-19		30-May-19	
Time Audited	3:15 PM		8:20 AM		8:30 AM		2:15 PM		11:10 AM		3:20 PM		12:30 PM		1:30 PM	
Load Type	Self-haul		ICI		Residential		Residential		Residential		ICI		ICI		ICI	
Notes	-		-		-		-		Residential 6 substitution - Bamfield collected - hauler error		Seems rather industrial, sharps bag		-		-	
Weather	Sunny, hot		Cloudy, cool		Sunny, hot		Sunny, hot		-		Sunny, hot		Sunny, hot		Sunny, hot	
Net Weight of Sub-sample (kg)	108.55		134.2		82.55		67.4		140.85		130.4		108.78		118.3	
Net Weight Inbound Load (kg)	530		4,300		280		1,570		290		8,340		8,290		5,020	
Material Category	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)
Paper																
Recyclable Paper	6.30	5.9%	4.60	3.6%	2.40	3.1%	4.75	7.4%	1.70	1.3%	4.00	3.2%	7.80	7.6%	4.20	4.1%
Cardboard	3.75	3.5%	1.60	1.2%	6.95	9.0%	3.10	4.8%	4.75	3.6%	5.60	4.5%	3.00	2.9%	4.70	4.6%
Other	1.85	1.7%	0.30	0.2%	0.25	0.3%	1.65	2.6%	1.25	0.9%	1.40	1.1%	3.80	3.7%	1.15	1.1%
Subtotal	11.90	11.1%	6.50	5.0%	9.60	12.5%	9.50	14.8%	7.70	5.8%	11.00	8.8%	14.60	14.2%	10.05	9.8%
Plastic																
Deposit	0.20	0.2%	0.25	0.2%	0.25	0.3%	0.00	0.0%	0.25	0.2%	1.00	0.8%	0.30	0.3%	0.65	0.6%
Rigid recyclable packaging	3.95	3.7%	3.20	2.5%	1.55	2.0%	1.15	1.8%	1.70	1.3%	7.65	6.1%	4.75	4.6%	1.55	1.5%
Durable products	6.90	6.4%	3.90	3.0%	13.40	17.4%	5.50	8.6%	9.10	6.8%	6.71	5.4%	10.05	9.8%	1.90	1.9%
Styrofoam	0.20	0.2%	0.25	0.2%	0.10	0.1%	0.05	0.1%	0.25	0.2%	0.55	0.4%	0.15	0.1%	0.05	0.0%
Film Packaging	7.25	6.7%	4.90	3.8%	4.30	5.6%	3.00	4.7%	3.50	2.6%	11.40	9.1%	6.05	5.9%	3.70	3.6%
Hot and Cold Drink Cups (Polycost)	0.45	0.4%	0.75	0.6%	0.15	0.2%	0.10	0.2%	0.05	0.0%	1.75	1.4%	1.20	1.2%	0.65	0.6%
Subtotal	18.95	17.6%	13.25	10.2%	19.75	25.6%	9.80	15.2%	14.85	11.1%	29.06	23.2%	22.50	21.9%	8.50	8.3%
Metal																
Deposit	0.05	0.0%	0.10	0.1%	0.35	0.5%	0.05	0.1%	0.10	0.1%	0.35	0.3%	0.80	0.8%	0.15	0.1%
Recyclable	0.40	0.4%	0.30	0.2%	0.65	0.8%	0.10	0.2%	1.35	1.0%	2.15	1.7%	0.90	0.9%	0.20	0.2%
Other	2.40	2.2%	5.80	4.5%	2.40	3.1%	0.25	0.4%	7.20	5.4%	10.05	8.0%	1.30	1.3%	5.95	5.8%
Subtotal	2.85	2.7%	6.20	4.8%	3.40	4.4%	0.40	0.6%	8.65	6.5%	12.55	10.0%	3.00	2.9%	6.30	6.2%
Glass																
Deposit	1.00	0.9%	0.50	0.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	3.45	2.8%	0.00	0.0%	0.00	0.0%
Recyclable	0.50	0.5%	0.00	0.0%	0.30	0.4%	0.25	0.4%	0.00	0.0%	1.45	1.2%	0.00	0.0%	0.10	0.1%
Other	1.65	1.5%	3.35	2.6%	0.95	1.2%	2.00	3.1%	7.90	5.9%	0.60	0.5%	0.00	0.0%	0.00	0.0%
Subtotal	3.15	2.9%	3.85	3.0%	1.25	1.6%	2.25	3.5%	7.90	5.9%	5.50	4.4%	0.00	0.0%	0.10	0.1%
Compostable Organics																
Food Waste	20.65	19.2%	18.45	14.3%	6.45	8.4%	18.70	29.1%	14.80	11.1%	13.70	10.9%	6.95	6.8%	8.50	8.3%
Yard Waste	0.00	0.0%	1.40	1.1%	0.05	0.1%	0.00	0.0%	5.55	4.2%	9.90	7.9%	0.00	0.0%	9.35	9.2%
Compostable/Food Soiled Paper	1.55	1.4%	5.55	4.3%	3.15	4.1%	1.40	2.2%	3.05	2.3%	10.75	8.6%	3.35	3.3%	7.55	7.4%
Clean Wood	7.20	6.7%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	29.40	27.3%	25.40	19.6%	9.65	12.5%	20.10	31.3%	23.40	17.6%	34.35	27.4%	10.30	10.0%	25.40	24.9%
Non-Compostable Organics																
Dirty/Treated Wood	5.40	5.0%	13.25	10.2%	5.70	7.4%	3.95	6.1%	12.65	9.5%	1.45	1.2%	18.00	17.5%	7.85	7.7%
Other	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	5.40	5.0%	13.25	10.2%	5.70	7.4%	3.95	6.1%	12.65	9.5%	1.45	1.2%	18.00	17.5%	7.85	7.7%
Building Materials																
Building Materials	0.00	0.0%	6.05	4.7%	6.75	8.8%	11.35	17.7%	0.00	0.0%	3.80	3.0%	0.45	0.4%	6.70	6.6%
Subtotal	0.00	0.0%	6.05	4.7%	6.75	8.8%	11.35	17.7%	0.00	0.0%	3.80	3.0%	0.45	0.4%	6.70	6.6%
Electronic Waste																
Electronic Waste	3.70	3.4%	12.30	9.5%	1.90	2.5%	0.00	0.0%	6.70	5.0%	0.05	0.0%	20.25	19.7%	0.40	0.4%
Subtotal	3.70	3.4%	12.30	9.5%	1.90	2.5%	0.00	0.0%	6.70	5.0%	0.05	0.0%	20.25	19.7%	0.40	0.4%
Household Hazardous Waste																
EPR	1.75	1.6%	0.60	0.5%	0.30	0.4%	0.00	0.0%	0.20	0.2%	0.00	0.0%	0.05	0.0%	0.20	0.2%
Non-ERP	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	1.75	1.6%	0.60	0.5%	0.30	0.4%	0.00	0.0%	0.20	0.2%	0.00	0.0%	0.05	0.0%	0.20	0.2%
Household Hygiene																
Household Hygiene	2.55	2.4%	15.10	11.7%	0.60	0.8%	1.15	1.8%	4.45	3.3%	5.15	4.1%	0.30	0.3%	0.05	0.0%
Subtotal	2.55	2.4%	15.10	11.7%	0.60	0.8%	1.15	1.8%	4.45	3.3%	5.15	4.1%	0.30	0.3%	0.05	0.0%
Bulky Objects																
Bulky Objects	10.10	9.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	23.35	22.9%
Subtotal	10.10	9.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	23.35	22.9%
Textiles																
Textiles	17.15	16.0%	23.30	18.0%	10.50	13.6%	4.70	7.3%	35.00	26.3%	14.35	11.4%	8.10	7.9%	8.45	8.3%
Subtotal	17.15	16.0%	23.30	18.0%	10.50	13.6%	4.70	7.3%	35.00	26.3%	14.35	11.4%	8.10	7.9%	8.45	8.3%
Fines																
Fines	0.60	0.6%	1.25	1.0%	0.80	1.0%	0.15	0.2%	0.15	0.1%	4.00	3.2%	3.40	3.3%	0.80	0.8%
Subtotal	0.60	0.6%	1.25	1.0%	0.80	1.0%	0.15	0.2%	0.15	0.1%	4.00	3.2%	3.40	3.3%	0.80	0.8%
Other Waste																
Other Waste	0.00	0.0%	2.35	1.8%	6.80	8.8%	0.95	1.5%	11.55	8.7%	4.10	3.3%	1.95	1.9%	3.95	3.9%
Subtotal	0.00	0.0%	2.35	1.8%	6.80	8.8%	0.95	1.5%	11.55	8.7%	4.10	3.3%	1.95	1.9%	3.95	3.9%
Total	107.50	100.0%	129.40	100.0%	77.00	100.0%	64.30	100.0%	133.20	100.0%	125.36	100.0%	102.90	100.0%	102.10	100.0%

Sample Number	Self-haul 1	ICI 1	ICI 2	Residential 1 - Ucluelet	Self-haul 2	ICI 3	ICI 4	ICI 5	Self-haul 3									
Sub-sample Number	-	-	-	-	-	-	-	-	-									
Date Audited	18-Jun-19	18-Jun-19	18-Jun-19	Dropped off June 18, Sorted June 19, 2019	19-Jun-19	19-Jun-19	19-Jun-19	19-Jun-19	20-Jun-19									
Time Audited	10:00 AM	12:15 PM	2:00 PM	8:00 AM	10:00 AM		1:15 PM	1:45 PM	8:15 AM									
Load Type	Self-haul	ICI	ICI	Residential	Self-haul	ICI	ICI	ICI	Self-haul									
Notes								may be collecting recycling separately but putting with garbage - recycling bagged in with garbage										
Weather	sunny, warm	sunny, warm	sunny, warm	sunny, warm	sunny, warm, windy	sunny, warm, windy	windy	windy	sunny, cool									
Net Weight of Sub-sample (kg)	142.3	126.45	118.85	131.75	137.8	125.35	118.15	115.95	124.95									
Net Weight Inbound Load (kg)	1,730	1,110	6,470	5,420	3,000 estimate	6,780	2,250	2,350	1,850									
Material Category	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)
Paper																		
Recyclable Paper	0.65	0.5%	2.70	2.2%	9.05	8.2%	4.55	3.7%	2.80	2.1%	2.35	2.0%	0.10	0.1%	1.40	1.2%	1.85	1.5%
Cardboard	7.35	5.3%	5.10	4.1%	7.75	7.0%	3.55	2.9%	7.60	5.8%	3.25	2.8%	0.35	0.3%	4.95	4.4%	4.05	3.2%
Other	1.15	0.8%	1.40	1.1%	0.60	0.5%	1.50	1.2%	1.30	1.0%	1.50	1.2%	0.05	0.0%	9.45	8.4%	0.45	0.4%
Subtotal	9.15	6.6%	9.20	7.4%	17.40	15.7%	9.60	7.7%	11.70	8.9%	7.60	6.5%	0.50	0.5%	15.80	14.0%	6.35	5.1%
Plastic																		
Deposit	0.75	0.5%	0.85	0.7%	0.50	0.5%	0.35	0.3%	0.45	0.3%	1.00	0.9%	0.00	0.0%	0.30	0.3%	0.20	0.2%
Rigid recyclable packaging	2.95	2.1%	5.05	4.1%	2.65	2.4%	3.30	2.7%	3.70	2.8%	4.70	4.0%	0.45	0.4%	4.45	3.9%	5.90	4.7%
Durable products	3.25	2.3%	1.50	1.2%	5.40	4.9%	8.95	7.2%	7.65	5.8%	7.70	6.6%	19.95	18.0%	3.20	2.8%	7.10	5.7%
Styrofoam	0.50	0.4%	0.50	0.4%	0.10	0.1%	1.30	1.0%	0.00	0.0%	0.15	0.1%	0.05	0.0%	4.00	3.5%	0.45	0.4%
Hot and Cold Drink Cups (Polycarbonate)	0.55	0.4%	0.75	0.6%	0.75	0.7%	0.20	0.2%	0.05	0.0%	0.40	0.3%	0.00	0.0%	1.20	1.1%	0.20	0.2%
Film Packaging	3.80	2.7%	9.95	8.0%	13.45	12.1%	8.90	7.1%	4.25	3.2%	5.25	4.5%	0.20	0.2%	5.85	5.2%	5.45	4.4%
Subtotal	11.80	8.5%	18.60	15.0%	22.85	20.6%	23.00	18.5%	16.10	12.2%	19.20	16.5%	20.65	18.6%	19.00	16.8%	19.30	15.5%
Metal																		
Deposit	0.90	0.6%	0.30	0.2%	0.80	0.7%	0.15	0.1%	0.10	0.1%	0.60	0.5%	0.05	0.0%	0.45	0.4%	1.65	1.3%
Recyclable	0.00	0.0%	0.75	0.6%	0.40	0.4%	0.90	0.7%	1.65	1.3%	2.45	2.1%	0.00	0.0%	0.60	0.5%	1.00	0.8%
Other	8.50	6.1%	0.85	0.7%	5.45	4.9%	4.70	3.8%	6.95	5.3%	13.40	11.5%	0.00	0.0%	0.80	0.7%	2.30	1.8%
Subtotal	9.40	6.7%	1.90	1.5%	6.65	6.0%	5.75	4.6%	8.70	6.6%	16.45	14.2%	0.05	0.0%	1.85	1.6%	4.95	4.0%
Glass																		
Deposit	1.75	1.3%	1.55	1.2%	1.70	1.5%	0.00	0.0%	0.50	0.4%	0.45	0.4%	0.00	0.0%	0.55	0.5%	0.40	0.3%
Recyclable	1.60	1.1%	0.20	0.2%	3.70	3.3%	1.10	0.9%	2.50	1.9%	1.50	1.3%	0.00	0.0%	1.90	1.7%	2.40	1.9%
Other	0.20	0.1%	0.55	0.4%	1.30	1.2%	0.30	0.2%	4.40	3.3%	1.80	1.6%	0.35	0.3%	0.00	0.0%	11.60	9.3%
Subtotal	3.55	2.5%	2.30	1.9%	6.70	6.0%	1.40	1.1%	7.40	5.6%	3.75	3.2%	0.35	0.3%	2.45	2.2%	14.40	11.5%
Compostable Organics																		
Food Waste	7.85	5.6%	49.40	39.8%	14.30	12.9%	31.65	25.4%	2.75	2.1%	18.80	16.2%	0.90	0.8%	47.25	41.9%	15.90	12.7%
Yard Waste	11.45	8.2%	0.00	0.0%	1.20	1.1%	13.25	10.6%	12.35	9.4%	0.00	0.0%	0.10	0.1%	0.00	0.0%	25.50	20.4%
Compostable/Food Soiled Paper	2.95	2.1%	10.70	8.6%	19.35	17.5%	10.15	8.2%	0.70	0.5%	2.85	2.5%	0.00	0.0%	4.85	4.3%	2.25	1.8%
Clean Wood	4.00	2.9%	4.40	3.5%	2.95	2.7%	0.00	0.0%	0.00	0.0%	0.05	0.0%	0.00	0.0%	1.40	1.2%	0.00	0.0%
Subtotal	26.25	18.8%	64.50	51.9%	37.80	34.1%	55.05	44.2%	15.80	12.0%	21.70	18.7%	1.00	0.9%	53.50	47.4%	43.65	35.0%
Non-Compostable Organics																		
Dirty/Treated Wood	22.90	16.4%	8.80	7.1%	0.00	0.0%	0.00	0.0%	33.35	25.3%	6.95	6.0%	0.00	0.0%	5.15	4.6%	7.40	5.9%
Other	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	22.90	16.4%	8.80	7.1%	0.00	0.0%	0.00	0.0%	33.35	25.3%	6.95	6.0%	0.00	0.0%	5.15	4.6%	7.40	5.9%
Building Materials																		
Building Materials	52.80	37.8%	0.00	0.0%	10.75	9.7%	1.95	1.6%	7.90	6.0%	12.75	11.0%	0.00	0.0%	0.00	0.0%	3.10	2.5%
Subtotal	52.80	37.8%	0.00	0.0%	10.75	9.7%	1.95	1.6%	7.90	6.0%	12.75	11.0%	0.00	0.0%	0.00	0.0%	3.10	2.5%
Electronic Waste																		
Electronic Waste	0.00	0.0%	0.15	0.1%	0.00	0.0%	0.00	0.0%	1.35	1.0%	2.55	2.2%	1.35	1.2%	1.50	1.3%	9.85	7.9%
Subtotal	0.00	0.0%	0.15	0.1%	0.00	0.0%	0.00	0.0%	1.35	1.0%	2.55	2.2%	1.35	1.2%	1.50	1.3%	9.85	7.9%
Household Hazardous Waste																		
EPR	0.40	0.3%	0.40	0.3%	0.00	0.0%	2.75	2.2%	0.10	0.1%	0.00	0.0%	0.00	0.0%	0.50	0.4%	0.00	0.0%
Non-ERP	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	0.40	0.3%	0.40	0.3%	0.00	0.0%	2.75	2.2%	0.10	0.1%	0.00	0.0%	0.00	0.0%	0.50	0.4%	0.00	0.0%
Household Hygiene																		
Household Hygiene	0.90	0.6%	12.90	10.4%	2.00	1.8%	6.25	5.0%	0.00	0.0%	5.25	4.5%	0.00	0.0%	1.80	1.6%	3.30	2.6%
Subtotal	0.90	0.6%	12.90	10.4%	2.00	1.8%	6.25	5.0%	0.00	0.0%	5.25	4.5%	0.00	0.0%	1.80	1.6%	3.30	2.6%
Bulky Objects																		
Bulky Objects	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	6.30	5.0%
Subtotal	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	6.30	5.0%
Textiles																		
Textiles	0.30	0.2%	3.20	2.6%	3.05	2.8%	9.55	7.7%	28.45	21.6%	17.85	15.4%	87.15	78.4%	8.15	7.2%	4.70	3.8%
Subtotal	0.30	0.2%	3.20	2.6%	3.05	2.8%	9.55	7.7%	28.45	21.6%	17.85	15.4%	87.15	78.4%	8.15	7.2%	4.70	3.8%
Fines																		
Fines	0.50	0.4%	0.85	0.7%	1.35	1.2%	2.20	1.8%	1.00	0.8%	1.30	1.1%	0.00	0.0%	0.30	0.3%	0.30	0.2%
Subtotal	0.50	0.4%	0.85	0.7%	1.35	1.2%	2.20	1.8%	1.00	0.8%	1.30	1.1%	0.00	0.0%	0.30	0.3%	0.30	0.2%
Other Waste																		
Other Waste	1.65	1.2%	1.45	1.2%	2.20	2.0%	7.00	5.6%	0.00	0.0%	0.70	0.6%	0.05	0.0%	2.80	2.5%	1.20	1.0%
Subtotal	1.65	1.2%	1.45	1.2%	2.20	2.0%	7.00	5.6%	0.00	0.0%	0.70	0.6%	0.05	0.0%	2.80	2.5%	1.20	1.0%
Total	139.60	100.0%	124.25	100.0%	110.75	100.0%	124.50	100.0%	131.85	100.0%	116.05	100.0%	111.10	100.0%	112.80	100.0%	124.80	100.0%

Sample Number	ICI 6		ICI 7		Residential 2 - Tofino	
Sub-sample Number	-		-		-	
Date Audited	20-Jun-19		20-Jun-19		20-Jun-19	
Time Audited	12:40 PM		1:40 PM		2:40 PM	
Load Type	ICI		ICI		Residential	
Notes	-		recycling inside bags with bags of garbage (me be collecting recycling seperately but putting in garbage)		-	
Weather	sunny, hot		sunny, hot		sunny, hot	
Net Weight of Sub-sample (kg)	117.65		122.7		121.6	
Net Weight Inbound Load (kg)	6,400		6,600		5,230	
Material Category	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)	Composition by Weight (kg)	Composition by Weight (%)
Paper						
Recyclable Paper	3.60	3.1%	9.15	7.5%	1.20	1.0%
Cardboard	5.30	4.5%	7.75	6.4%	4.70	4.0%
Other	0.65	0.6%	0.30	0.2%	0.60	0.5%
Subtotal	9.55	8.2%	17.20	14.2%	6.50	5.5%
Plastic						
Deposit	0.85	0.7%	0.95	0.8%	0.60	0.5%
Rigid recyclable packaging	2.90	2.5%	3.05	2.5%	2.60	2.2%
Durable products	6.90	5.9%	7.25	6.0%	7.90	6.7%
Styrofoam	0.55	0.5%	2.05	1.7%	0.35	0.3%
Hot and Cold Drink Cups (Polycoat)	0.25	0.2%	0.90	0.7%	0.35	0.3%
Film Packaging	4.60	3.9%	5.35	4.4%	8.90	7.6%
Subtotal	16.05	13.7%	19.55	16.1%	20.70	17.6%
Metal						
Deposit	1.15	1.0%	0.90	0.7%	0.75	0.6%
Recyclable	0.35	0.3%	0.75	0.6%	2.35	2.0%
Other	16.55	14.2%	18.60	15.3%	1.35	1.1%
Subtotal	18.05	15.4%	20.25	16.7%	4.45	3.8%
Glass						
Deposit	2.20	1.9%	1.20	1.0%	1.45	1.2%
Recyclable	1.00	0.9%	0.55	0.5%	2.35	2.0%
Other	0.75	0.6%	0.00	0.0%	0.00	0.0%
Subtotal	3.95	3.4%	1.75	1.4%	3.80	3.2%
Compostable Organics						
Food Waste	28.90	24.7%	14.05	11.6%	39.50	33.6%
Yard Waste	8.80	7.5%	5.10	4.2%	0.40	0.3%
Compostable/Food Soiled Paper	4.30	3.7%	4.95	4.1%	8.60	7.3%
Clean Wood	7.80	6.7%	0.00	0.0%	0.00	0.0%
Subtotal	49.80	42.6%	24.10	19.8%	48.50	41.3%
Non-Compostable Organics						
Dirty/Treated Wood	4.80	4.1%	12.85	10.6%	4.65	4.0%
Other	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	4.80	4.1%	12.85	10.6%	4.65	4.0%
Building Materials						
Building Materials	0.00	0.0%	2.00	1.6%	0.60	0.5%
Subtotal	0.00	0.0%	2.00	1.6%	0.60	0.5%
Electronic Waste						
Electronic Waste	1.00	0.9%	7.70	6.3%	0.40	0.3%
Subtotal	1.00	0.9%	7.70	6.3%	0.40	0.3%
Household Hazardous Waste						
EPR	2.20	1.9%	1.10	0.9%	3.35	2.9%
Non-ERP	0.00	0.0%	0.00	0.0%	0.00	0.0%
Subtotal	2.20	1.9%	1.10	0.9%	3.35	2.9%
Household Hygiene						
Household Hygiene	1.15	1.0%	2.25	1.9%	6.80	5.8%
Subtotal	1.15	1.0%	2.25	1.9%	6.80	5.8%
Bulky Objects						
Bulky Objects	0.00	0.0%	6.70	5.5%	0.00	0.0%
Subtotal	0.00	0.0%	6.70	5.5%	0.00	0.0%
Textiles						
Textiles	9.60	8.2%	3.75	3.1%	13.65	11.6%
Subtotal	9.60	8.2%	3.75	3.1%	13.65	11.6%
Fines						
Fines	0.30	0.3%	2.20	1.8%	0.90	0.8%
Subtotal	0.30	0.3%	2.20	1.8%	0.90	0.8%
Other Waste						
Other Waste	0.45	0.4%	0.15	0.1%	3.15	2.7%
Subtotal	0.45	0.4%	0.15	0.1%	3.15	2.7%
Total	116.90	100.0%	121.55	100.0%	117.45	100.0%

Appendix D

Representative Photos

Photo Set 1: Collection and Inbound Loads Representative Photos



Residential Load - AVLF



Residential Load - WCLF



Self-Haul Load - AVLF



Self-Haul Load - WCLF



ICI Load - AVLF



ICI Load - WCLF

Photo Set 2: Repetitive Sort Photos -AVLF



Compostable Materials – Food Waste



Textiles – Textiles



Paper - Cardboard



Plastic – Film Packaging



Electronics – Electronics



Plastics – Film Packaging

Photo Set 3: Repetitive Sort Photos - WCLF



Compostable Materials – Yard Waste



Plastics – Durable Plastic Products



Compostable Materials – Compostable/Food Soiled Paper



Textiles – Textiles



Metal – Other Metal



Compostable Materials – Food Waste