City of Saskatoon
2023 to 2025 City-Wide Waste Characterization Study
Winter 2025


PRESENTED TO
City of Saskatoon

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EXECUTIVE SUMMARY

Tetra Tech Canada Inc. (Tetra Tech) was retained by the City of Saskatoon (City) to conduct a multi-season City-Wide Waste Characterization Study. The scope of the study consists of nine seasonal waste sorting events over a three-year period from 2023 to 2025. This seasonal report summarizes the sixth sampling event conducted for garbage, recycling, and organics from the single family (SF) residential sector, and the third sampling event for garbage from the multi-unit (MU) sector in February 2025 (Winter 2025).

Section 1 of the report identifies the scope of work, project limitations, and an overview of waste collection services in the City.

Section 2 identifies the methodology that was undertaken for the Winter 2025 Study, including waste collection, sorting, and data analysis. A detailed description of material categories is included in Appendix C.

Section 3 includes an overview of set out rates, types, and amounts of materials collected, and an estimate of cart fullness. Waste composition results for garbage, recycling, and organics for the SF sector are also presented in Section 3 along with diversion potential, contamination rates, capture rates, and a bag count for the organics stream. Waste composition results for garbage from the MU sector are included in Section 3. Recycling and organics streams for the MU sector were not included in this scope of work. A detailed breakdown of waste composition results by stream is included in Appendix D:

- The average percentage of carts set out for bi-weekly collection was 66% for all three SF waste streams.
- On average, the total amount of materials disposed from all three streams on a bi-weekly basis was approximately 25 kg/household.
- On average, carts that were set out were 58% full. The majority (78%) of SF garbage carts were the large 360 L size, 12% were the medium 240 L size, and 10% were the small 120 L size. All recycling and organics carts were 360 L.
- The SF garbage stream was primarily composed of food waste (34%), household hygiene (17%), plastics (13%), paper (9%), and other materials (8%).
- Organic materials accounted for 42% of the SF garbage stream, primarily consisting of avoidable food waste (25%), unavoidable food waste (9%), and tissue/toweling (6%).
- The diversion potential for the SF garbage stream based on existing programs and services was 66%.
- The recycling stream was primarily composed of paper packaging (47%), paper (16%), and plastics (15%).
- The contamination in the recycling stream was 20%.
- The organics stream was mostly composed of food waste (79%), paper (10%), and yard waste (6%).
- The contamination in the organics stream was 4%.
- MU garbage was primarily composed of food waste (31%), plastics (12%), household hygiene (12%), paper packaging (10%), and paper (9%).
- Divertible material in the MU garbage stream included organics (39%), recycling (19%), and depot materials (11%).

Section 4 summarizes the interesting finds in the Winter 2025 Study and Appendix B includes selected photographs for reference.

Section 5 includes initial comments and preliminary recommendations based on the findings from the sixth sampling event:

- The bi-weekly collection frequency appeared to be sufficient for garbage and recycling. Utilization of organics carts was low since less yard waste was being discarded at this time of year.
- The cart sizes worked well for most households; however, 14% of carts were overfilled and 35% of carts were filled to half capacity or below.
- Additional education and communication on the green cart program may be beneficial to reduce the amount of organic waste in the garbage stream. The garbage stream was comprised of 42% organic materials.
- Additional education and communication on the recycling program may be beneficial to reduce the amount of contamination in the recycling stream and increase residential utilization on the organics program.
- Additional education and communication on existing MU diversion programs would be beneficial. Materials that can be recycled made up 19% of the MU garbage stream and materials that could be dropped off at a depot made up 11% of the MU garbage stream.
- An organics diversion program for MU residents can divert more waste from the landfill. Approximately 39% of MU garbage was organic material, including avoidable food waste, tissue/towelling, and unavoidable food waste.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
City	City of Saskatoon
HASP	Health and Safety Plan
HDPE	High-density Polyethylene
Landfill	Saskatoon Regional Waste Management Centre
LDPE	Low-density Polyethylene
MU	Multi-unit
SARCAN	Saskatchewan Association of Rehabilitation Centres
SF	Single Family
Tetra Tech	Tetra Tech Canada Inc.

LIMITATIONS OF REPORT

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

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by the City of Saskatoon (City) to conduct a multi-season City-Wide Waste Characterization Study from 2023 to 2025. This project consists of nine waste sorting events over a three-year period. This report represents the sixth sorting event and was conducted from February 3 to February 28, 2025 (Winter 2025). This event sorted garbage, recycling, and organics from the single family (SF) residential sector, and garbage from the multi-unit (MU) sector.

The purpose of this study is to identify trends and changes in the City's waste profile and provide benchmarks as new programs are implemented. The following are considerations for this report:

- In 2023, the City launched a mandatory curbside organics (green) cart program for the SF sector and a mandatory organics diversion program for the industrial, commercial, and institutional sector.
- In 2024, the City implemented a variable rate fee structure for curbside garbage (black) carts. New garbage carts were rolled out in the Spring of 2024 to households that requested a smaller cart size (i.e., 120 L or 240 L). The Winter 2025 audit represents the third waste sorting event where different garbage cart sizes were available.

It is understood that results from the study are intended to improve understanding of program use, identify changes over time, identify areas for program improvement, and to inform public communication campaigns.

1.1 Scope of Work

This study characterized the composition of garbage, recycling, and organics streams from curbside SF households, and the composition of garbage from the MU sector. The fieldwork involved the following:

- Collect garbage, recycling, and organics from select SF households;
- Document waste stream set outs and fullness of the materials in the SF carts collected;
- Transport collected materials to a designated sorting area;
- Collect garbage from MU collection trucks; and
- Sort and weigh the collected waste streams.

The objectives of this study include the following:

- Document the amount and types of materials discarded in the recycling, organics, and garbage waste streams to gauge progress from the SF residential sector.
- Document the amount and types of materials discarded in the garbage waste stream to establish a baseline for the MU residential sector.
- Determine the amount of contamination found in the SF recycling and organic streams, and the amount of divertible materials in the SF and MU garbage.
- Estimate SF waste generation rates for the three waste streams.
- Determine the capture rates for SF recyclables and organic materials relative to the generation rate.
- Document the observed level of fullness in the SF cart prior to collection.

- Estimate diversion potential for other waste that could be diverted through depots such as household hazardous waste, construction waste, and textiles.
- Assess service level suitability (i.e., collection frequency and cart size) for SF residents.

For the SF curbside collected waste streams, a sampling plan was prepared in conjunction with City staff. A total of 100 households were selected from ten neighbourhoods for the Winter 2025 sorting event and included the same set of households that were selected for the Summer and Fall 2024 events. Table 1-1 summarizes the selected neighbourhoods, collection route number and code, number of households selected, cart set out location, and description.

Table 1-1: Single Family Households Characterized

Neighbourhood	Collection Route	Route Code	Number of Homes	Set Out Location	Description
Nutana	1	NUT	10	Back Lane	10 homes in a row
Nutana Park	2	NPA	10	Back Lane	10 homes in a row
Eastview	3	EAS	10	Back Lane	10 homes in a row
Rosewood	4	ROS	10	Front Street	10 homes in a row
Willowgrove	5	WIL	10	Front Street	10 homes in a row
City Park	6	CIT	10	Back Lane	10 homes in a row, one home with two sets of carts
Silverwood Heights	7	SIL	10	Front Street	10 homes in a row
Mount Royal	8	MOU	10	Front Street	10 homes in a row
Dundonald	9	DUN	10	Front Street	10 homes in a row
Parkridge	10	PAR	10	Front Street	10 homes in a row
		Total	**100**		

For MU garbage, four MU collection routes were selected. The City collected garbage from multiple MU complexes from various areas of the City. Tetra Tech obtained two samples from each route for a total of eight samples. Table 1-2 summarizes the collection of the MU garbage.

Table 1-2: MU Collection Days and Samples

Day of the Week	Number of Samples
Monday	2
Tuesday	2
Wednesday	2
Thursday	2
Total	**8**

1.2 Overview of Garbage, Recycling, and Organics Collection

1.2.1 Single Family Residential Garbage, Recycling, and Organics

The City provides SF households with curbside collection services for garbage, recycling, and organics waste streams.

Garbage (black cart) is collected on a bi-weekly basis year-round. Collection is conducted in-house by the City. The default cart size is 360 L; however, households have the option to request smaller cart sizes (240 L or 120 L carts). In 2024, the City implemented a utility fee system for garbage collection that is based on the variable cart size.

Recycling (blue cart) is collected on a bi-weekly basis year-round. The default cart size is 360 L. Collection operations are conducted under contract with a third-party service provider. Recycling collection is funded through a recycling utility fee and residents have the option to pay for an additional cart, if desired.

Organics (green cart) is collected on a bi-weekly basis during the spring, summer, and fall seasons and on a monthly basis during the winter. Organics includes yard waste, food waste, and food soiled paper. The default cart size is 360 L. Organics are collected in-house by the City. Prior to 2023, the green cart program was a voluntary, subscription-based program. In the spring of 2023, the green cart program became mandatory and was expanded city-wide to all SF households. The organics program was funded through property taxes in 2023 and changed to a utility fee in 2024.

All three waste streams are collected on different days of the week (e.g., no more than one cart is placed out for collection on any given day). Set out locations for carts vary depending on the location in the City but include both front street and back lane. Front street collections occur on both sides of the street; however, back lane collections occur on only one side of the lane. Materials placed outside the carts are not collected.

1.2.2 Multi-Unit Residential Garbage

MU residential apartments and condominiums receive weekly garbage collection from communal metal garbage bins. Collection is conducted in-house by the City; however, buildings can choose to contract garbage collection with private service providers. Garbage collection costs are funded through property taxes. There is currently no organics diversion program for MU residents.

1.3 Project Limitations

The findings of this study may be limited by the following factors:

- **Sampling Methodology:** Results from this sampling methodology are directly correlated to the ten households that were selected for collection in each neighbourhood. It was assumed that these households would be representative of the entire neighbourhood.
- **Residential Behaviour:** A few residents approached the collection crew and asked questions about the project. This may have affected residents' behaviour patterns with respect to waste disposal practices for other waste streams and future sorting events due to their awareness of the waste characterization study.
- **Diversion Potential:** The diversion potential is calculated based on an ideal scenario where residents are correctly utilizing all waste diversion options that were available at the time of the study. Diversion potential is considered a theoretical maximum and represents the upper boundary of what could be possible given the current waste composition and waste diversion programs.

- **Set Out Rates:** Residents with back lane collection could be skewed to show higher participation. Carts at these locations are usually kept adjacent to the back alley, providing an impression that the cart is being set out for collection even when no waste is placed inside the cart.
- **Waste Produced Per Household Estimation:** The amount of waste produced every two weeks per household is calculated by dividing the total weight collected by the total number of possible households. It does not take into account the set out rate.

2.0 METHODOLOGY

The following section describes the methodology that was undertaken to conduct this study. Appendix B includes photos that highlight some of the activities.

2.1 Health and Safety

A Health and Safety Plan (HASP) was developed for this project to identify potential hazards in advance of the waste composition study. The HASP was reviewed and updated to account for seasonal changes (e.g., winter weather conditions) as well as inputs and lessons learned from past sorting events. Tetra Tech staff conducting field work for this study were required to have up-to-date safety certifications and training for waste sorting activities. Personal protective equipment, including face masks, safety goggles, gloves, steel toe boots, coveralls, and hi-vis vests, was worn by all field staff according to Tetra Tech's HASP.

As the waste sorting was conducted at the Saskatoon Regional Waste Management Centre (Landfill), all Tetra Tech staff completed a landfill safety orientation required by the City to understand site-specific hazards, controls, and expectations. A safe working location was selected and clearly demarcated. Safety meetings were conducted by Tetra Tech at the beginning of each day to review and identify key concerns and hazard mitigation strategies, including how to handle material hazards such as sharps or hazardous materials, lifting of heavy material, working around large vehicles, and driving around the City.

2.2 Seasonal Weather Conditions

Table 2-1 documents the weather conditions in Saskatoon during the Winter 2025 sorting event. The City experienced snow prior to the waste characterization study and a cold snap during the fieldwork. This may have affected residential behaviours as it related to waste disposal practices.

Table 2-1: Weather Conditions – Winter 2025

Date	Temperature (°C)[1]			Precipitation (mm)[1]	Max Wind Speed (km/hr)[1]
	Average	Min	Max		
February 3, 2025	-28.2	-31.8	-24.5	N/A	N/A
February 4, 2025	-26.3	-32.0	-20.6	N/A	N/A
February 5, 2025	-19.5	-21.0	-18.0	N/A	48
February 6, 2025	-15.8	-19.2	-12.3	N/A	31
February 7, 2025	-19.9	-27.7	-12.1	N/A	N/A
February 10, 2025	-29.4	-35.2	-23.5	N/A	34
February 11, 2025	-26.5	-32.0	-20.9	N/A	N/A

Date	Temperature (°C)[1]			Precipitation (mm)[1]	Max Wind Speed (km/hr)[1]
	Average	Min	Max		
February 12, 2025	-28.5	-34.6	-22.3	N/A	N/A
February 13, 2025	-29.0	-33.9	-24.1	N/A	N/A
February 14, 2025	-25.4	-29.8	-21.0	N/A	N/A
February 17, 2025	-32.4	-39.5	-25.2	N/A	N/A
February 18, 2025	-33.5	-40.5	-26.4	N/A	N/A
February 19, 2025	-27.4	-33.7	-21.0	N/A	N/A
February 20, 2025	-22.2	-28.5	-15.9	N/A	32
February 21, 2025	-9.9	-18.1	-1.7	N/A	N/A
February 24, 2025	-4.4	-11.4	2.6	N/A	N/A
February 25, 2025	-4.2	-10.6	2.3	N/A	N/A
February 26, 2025	-2.5	-8.6	3.6	N/A	37
February 27, 2025	2.1	-0.9	5.1	N/A	52
February 28, 2025	-3.0	-8.9	3.0	N/A	N/A

Note:
[1] Obtained from Government of Canada Climate for the City of Saskatoon.

2.3 Sampling Plan

2.3.1 Single Family Households

Tetra Tech worked with City staff to select households for the study. During the Winter 2025 event, a total of 100 households were selected from ten neighbourhoods with different collection routes in the City. Table 2-2 summarizes the collection days, routes, and waste streams from the Winter 2025 sorting event. It should be noted that garbage and recycling are each collected every other week while organics is collected once every four weeks. During the winter months, the organics stream was collected once per month.

Table 2-2: SF Collection Days and Waste Streams Sampled – Winter 2025

Collection Day	Neighbourhood	Waste Stream
Monday, February 3, 2025	Nutana	Garbage
	Rosewood	Recycling
Tuesday, February 4, 2025	Rosewood	Organics
Friday, February 7, 2025	Parkridge	Organics
Tuesday, February 11, 2025	Eastview	Organics
Wednesday, February 12, 2025	Willowgrove	Organics

[1] Government of Canada. (2025). Daily Data Report for February 2025.
Daily Data Report for February 2025 - Climate - Environment and Climate Change Canada.

Collection Day	Neighbourhood	Waste Stream
Monday, February 17, 2025	Nutana Park	Organics
Tuesday, February 18, 2025	Eastview	Garbage
	City Park	Recycling
Wednesday, February 19, 2025	Willowgrove	Garbage
	Mount Royal	Recycling
	City Park	Organics
Thursday, February 20, 2025	Silverwood Heights	Garbage
	Parkridge	Recycling
	Mount Royal	Organics
Friday, February 21, 2025	Dundonald	Garbage
	Nutana Park	Recycling
Monday, February 24, 2025	Nutana Park	Garbage
	Eastview	Recycling
	Nutana	Organics
Tuesday, February 25, 2025	Rosewood	Garbage
	Willowgrove	Recycling
Wednesday, February 26, 2025	City Park	Garbage
	Silverwood Heights	Recycling
Thursday, February 27, 2025	Mount Royal	Garbage
	Dundonald	Recycling
	Silverwood Heights	Organics
Friday, February 28, 2025	Parkridge	Garbage
	Nutana	Recycling
	Dundonald	Organics

2.3.2 Multi-Unit Residential

Four MU collection routes were selected for the Winter 2025 event. Tetra Tech obtained and sorted two samples from each route for a total of eight samples. Each load included multiple MU complexes from various areas of the City. Table 2-3 summarizes the collection dates for MU garbage.

Table 2-3: MU Collection Days and Samples

Date	Number of Samples
Monday, February 10, 2025	2
Tuesday, February 11, 2025	2
Wednesday, February 12, 2025	2
Thursday, February 13, 2025	2
Total	**8**

2.4 Sample Collection Methodology

2.4.1 Single Family Curbside Collection

Each day, Tetra Tech arrived at the first collection location no earlier than 8:00 a.m. (note that carts are required to be placed out at the curb for collection by 7:00 a.m. as per the City's Waste Bylaw). Prior to material collection, Tetra Tech field staff recorded the number of garbage, organics, or recycling carts that were set out from the selected households as well as the estimated percent cart fullness. Cart fullness was estimated by visually comparing the height of materials to the height of the cart. If there was a low number of carts set out (e.g., less than 70%), staff recorded this and returned at a later time that morning to collect materials from any additional carts set out. During collection, staff also recorded general observations and resident encounters. Recorded observations would include any additional materials placed outside of the garbage cart or if there was a large amount of contamination (e.g., building materials) in or around the cart. During the Winter 2025 sampling event, cart sizes (e.g., 360 L, 240 L, or 120 L) were noted for the garbage stream.

Tetra Tech field staff collected contents from each household's carts. Only materials that were placed inside the carts were collected and characterized. Materials collected from carts in each neighbourhood were combined and represented a single sample. Tetra Tech labelled material while collecting to make sure samples were not mixed or co-mingled. All home addresses were confidential and were only provided to the field supervisor for coordination purposes. Measures were taken to ensure all data collected remained anonymous and results were aggregated.

Once the samples were collected, Tetra Tech staff transported the materials to the designated sorting area at the Landfill. Samples were then unloaded, and the sorting team organized the materials to make sure samples were not mixed or co-mingled.

2.4.2 Multi-Unit Residential Collection

Tetra Tech's field lead worked closely with City staff to identify loads for sampling that were considered representative of the MU residential sector. The City coordinated, collected, and delivered selected loads to the landfill face, and Tetra Tech's field lead worked closely with City staff and facility operators to confirm the load was emptied at the designated area for sampling. Two samples were taken from each of the four trucks for a total of eight samples. Tetra Tech documented the load details (including origin of waste, photographs) and sample selection methodology was followed. All MU samples were hand sorted. The samples from the MU residential sector only consisted of the garbage stream.

2.5 Waste Characterization Approach

SF loads were collected and transported by Tetra Tech staff and taken to the designated sorting area. MU loads were collected and transported by the City and taken to the Landfill working face where Tetra Tech's field lead would collect two samples for sorting.

2.5.1 Hand Sort

All SF and MU loads were hand sorted. For all three waste streams, staff weighed each sample to determine the pre-weight. For the garbage stream, the field team took a subsample that was approximately 100 kg for hand sorting, collecting material from each collection bag to minimize potential bias. For the recycling and organics streams, the entire samples were sorted. Each sample was then hand sorted into its respective material categories.

All samples were sorted as per the categories agreed upon with the City. Each categorized item was placed into respective bins. The contents of each bin were then weighed and recorded to determine the weight for each secondary category. Details of the sorting categories are included in Appendix C, along with their description, and preferred diversion/disposal method.

The waste streams were characterized into 13 primary categories which were then further divided into 67 secondary categories. Primary categories include the following:

- Paper.
- Metals.
- Food waste.
- Yard waste.
- Bulky waste.
- Paper packaging.
- Glass.
- Construction and demolition waste.
- Household hygiene.
- Plastics.
- Household hazardous waste.
- Waste electrical and electronic equipment.
- Other materials.

Note that the term "household hazardous waste" is an industry term that refers to household products that may be flammable, corrosive, or toxic under certain conditions, but are generally safe to handle under normal conditions. The "household hygiene" category includes materials such as diapers, sanitary products, and pet waste. The "other materials" primary category includes materials such as textiles, tires and other rubber, other waste, and wooden utensils.

2.6 Data Analysis

Data analysis was performed using Tetra Tech's spreadsheet analysis tool. Data was compiled into primary and secondary categories by weight. The composition for each stream was calculated as weighted averages.

The types of data analysis undertaken by Tetra Tech include the following:

- Set out rates, fullness, and cart size of curbside carts.
- Bi-weekly generation rates.
- Composition of materials by material type and weight.
- Diversion potential or contamination rate of materials.
- Capture rates of recyclable and organic materials.

- Counts of plastic film bags (non-packaging) and compostable/biodegradable bags.
- Notable items.

3.0 RESULTS

The following summarizes the waste composition results for the various streams investigated. Results are presented by primary category. Primary category percentages were calculated by aggregating all sample data for each stream. An average percentage by weight was determined for each stream. Waste composition results for all samples by material categories are presented in Appendix D. Selected photographs of samples are shown in Appendix B.

Following the waste composition results, the proportion of materials that could be diverted from disposal was estimated and presented as the diversion potential or contamination rate. Classifications for the diversion potential of each secondary category can be found in Appendix C. The diversion potential had changed from the previous seasons as plastic film and #6 polystyrene – expanded switched to being accepted at recycling depots as of December 2024. The materials were categorized as follows:

- **Organics:** materials accepted by the City's composting program (e.g., yard waste, food scraps, and food soiled paper).
- **Recycling**: materials accepted by the City's curbside collection services or at recycling depots.
- **Depot**: materials accepted for drop off at a depot or other drop off location for diversion (e.g., the Recycling Division of Saskatchewan Association of Rehabilitation Centres [SARCAN], Material Recovery Centre).
- **No Program**: materials that do not currently have a diversion program in the City but could theoretically be diverted from landfill with future diversion programs.
- **Garbage**: materials that do not fall within the above diversion options and would be landfilled.

The diversion potential is calculated based on an ideal scenario where residents are correctly utilizing all waste diversion options that were available at the time of the study. This is the theoretical maximum and represents the upper boundary of what is possible given the current waste composition and waste diversion programs.

3.1 Single Family Overview

3.1.1 Set Out Rates

Table 3-1 summarizes the set out rates from each stream in SF residential carts during the Winter 2025 sorting event. The average total percentage of carts set out was 66% for all three streams and the average set out rates in the garbage, recycling, and organics stream was 81%, 76%, and 29% respectively. The range of set out rates for routes with all three streams collected was between 40% and 80%.

Table 3-1: Cart Set Out Rates – Winter 2025

Route	Set Out Location	Garbage (%)	Recycling (%)	Organics (%)	Average (%)
Nutana	Back Lane	80%	90%	60%	77%
Nutana Park	Back Lane	70%	60%	-	65%*
Eastview	Back Lane	90%	90%	40%	73%

Route	Set Out Location	Garbage (%)	Recycling (%)	Organics (%)	Average (%)
Rosewood	Front Street	100%	90%	50%	80%
Willowgrove	Front Street	90%	90%	20%	67%
City Park	Back Lane	55%	64%	9%	42%
Silverwood Heights	Front Street	80%	70%	30%	60%
Mount Royal	Front Street	70%	50%	0%	40%
Dundonald	Front Street	90%	100%	-	95%*
Parkridge	Front Street	90%	60%	20%	57%
	Average	**81%**	**76%**	**29%**	**66%**

Note:
*Organics samples were not included as they had been collected by the hauler.

3.1.2 Waste Collected Per Household

Table 3-2 summarizes the amount of material collected per household for each stream in SF residential carts during the Winter 2025 sorting event. The average amount of materials for all three streams over a two-week period was 25 kg/household. The average amount of materials collected per household in the garbage, recycling, and organics streams was 15 kg/household, 5 kg/household, and 5 kg/household, respectively. The generation rate for homes with all three streams collected ranged between 19 kg/household and 43 kg/household (over a two-week period).

Table 3-2: Amount of Waste Materials Disposed per Household per Two-Week Period – Winter 2025

Route	Number of Carts	Garbage (kg/household)	Recycling (kg/household)	Organics (kg/household)*	Total (kg/household)**
Nutana	10	7.27	5.20	7.74	20.21
Nutana Park	10	10.31	3.04	-	13.35***
Eastview	10	11.71	6.68	6.51	24.89
Rosewood	10	28.83	5.28	8.53	42.64
Willowgrove	10	13.61	4.36	1.42	19.39
City Park	11	15.21	3.37	1.32	19.90
Silverwood Heights	10	12.88	5.32	8.96	27.15
Mount Royal	10	15.99	6.54	0.00	22.54
Dundonald	10	16.41	8.98	-	25.39***
Parkridge	10	17.84	2.50	2.43	22.77
	Average	**15.00**	**5.13**	**4.61**	**24.74**

Notes:
*Organics samples represent the amount of material disposed of over a four-week period.
**Total kilograms collected divided by total number of carts per route (regardless of the number of carts set out).
***Organics samples were not included as they had been collected by the hauler.

3.1.3 Cart Fullness

Table 3-3 summarizes the average cart fullness from each stream in SF residential carts during the Winter 2025 sorting event. The average fullness of carts was 61% for all three streams and the average fullness in the garbage, recycling, and organics streams was 70%, 74%, and 26%, respectively. The average fullness for households with all three streams collected was between 50% and 70%.

Table 3-3: Cart Fullness – Winter 2025

Route	Set Out Location	Garbage (%)	Recycling (%)	Organics (%)	Average (%)
Nutana	Back Lane	62%	73%	18%	51%
Nutana Park	Back Lane	57%	60%	-	59%*
Eastview	Back Lane	62%	83%	46%	64%
Rosewood	Front Street	83%	88%	39%	70%
Willowgrove	Front Street	75%	66%	10%	50%
City Park	Back Lane	80%	72%	10%	54%
Silverwood Heights	Front Street	63%	75%	30%	56%
Mount Royal	Front Street	74%	89%	-	82%**
Dundonald	Front Street	74%	68%	-	71%*
Parkridge	Front Street	66%	63%	30%	53%
	Average	**70%**	**74%**	**26%**	**61%**

Notes:
*Organics samples were not included as they had been collected by the hauler.
**Organics samples were not included as there were no carts set out for collection.

3.2 Single Family Garbage

The following summarizes the waste composition results and diversion potential for SF garbage.

3.2.1 SF Garbage Composition Results

Figure 3-1 illustrates the average waste composition of the garbage stream from the SF sector in Winter 2025. This is a snapshot of the types and relative quantities of materials that were discarded by residents at this time of the year.

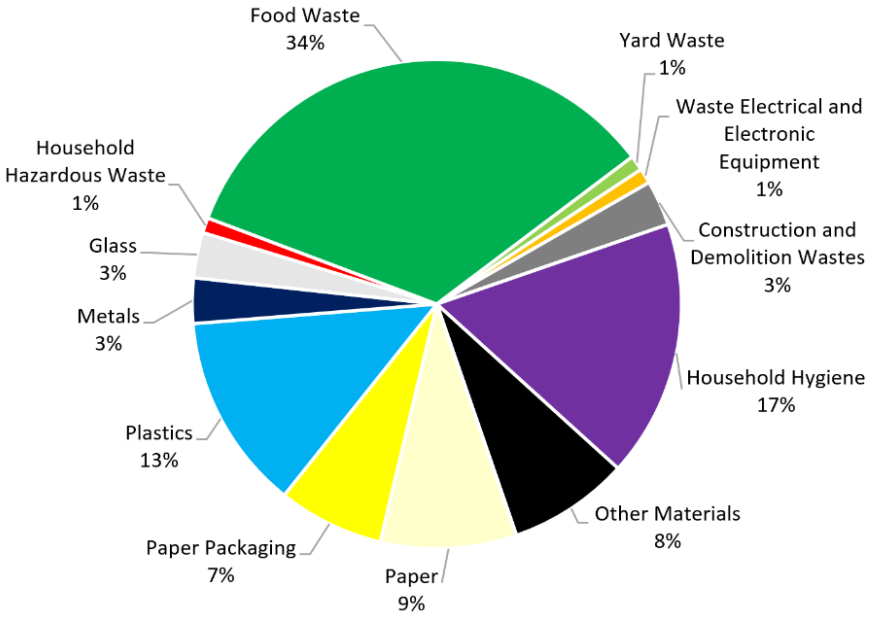


Figure 3-1: Overall SF Garbage Composition

The overall SF garbage stream was primarily composed of food waste (34%), household hygiene (17%), plastics (13%), paper (9%), and other materials (8%). The remainder was comprised of paper packaging (7%), metal (3%), glass (3%), construction and demolition waste (3%), yard waste (1%), waste electrical and electronic equipment (1%), and household hazardous waste (1%). The most prominent five primary categories represent 81% of the SF garbage stream and are broken down as follows:

- Food waste, composed of avoidable food waste (25%) and unavoidable food waste (9%). Avoidable food waste included edible food (e.g., whole fruits and vegetables, prepared meals, meat, and bread) and unavoidable food waste included inedible food (e.g., peels, bones, solidified fats, and coffee grounds).
- Household hygiene, which mainly included diapers (8%), pet waste (7%), and sanitary products (2%).
- Plastics, including plastic laminates and other film packaging (3%), durable plastic products (2%), plastic film (2%), low-density polyethylene/high-density polyethylene (LDPE/HDPE) film – products (non-packaging) (1%), and #5 polypropylene (1%).
- Paper, primarily composed of tissue/toweling (6%) and mixed paper (2%).
- Other materials, primarily composed of textiles (6%) and other waste (2%).

3.2.2 Diversion Potential

Figure 3-2 summarizes the diversion potential of the SF garbage stream. The diversion potential represents the percentage of materials that could be diverted from the garbage stream through the City's organics, recycling, and depot programs. The 'No Program' category represents the theoretical diversion potential of materials from the garbage stream, but no corresponding program or service is currently offered (e.g., construction and demolition wastes). The total diversion potential for the SF garbage stream was calculated to be 69% and consisted of 42% organic materials, 13% recyclable materials, 11% depot materials, and 3% No Program materials. The diversion potential for the SF garbage stream that is based on existing programs and services is 66%.

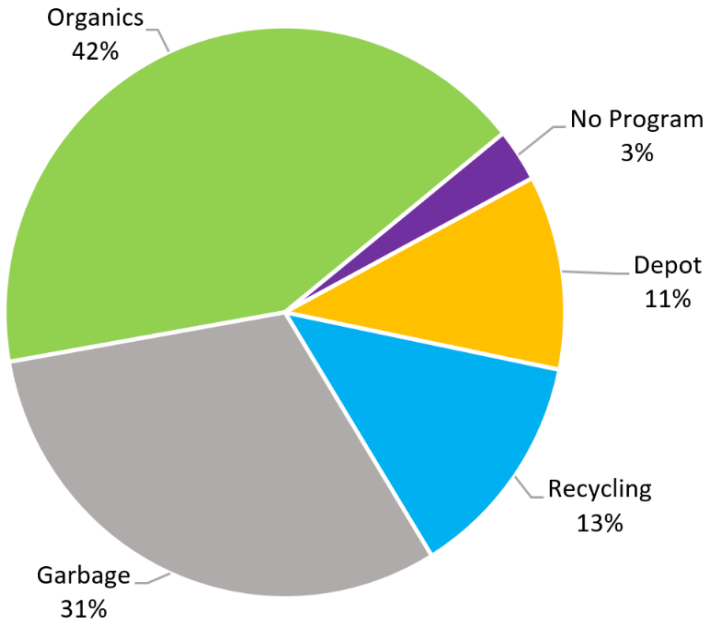


Figure 3-2: Overall SF Garbage Diversion Potential

The diversion potential may be broken down as follows:

- Organics are primarily composed of avoidable food waste (25%), unavoidable food waste (9%), and tissue/toweling (6%).
- Recycling includes boxboard/cores (2%), mixed paper (2%), #5 polypropylene (1%), glass – non beverage (1%), aluminium – non beverage (1%), and corrugated cardboard (1%).
- Depot materials are primarily composed of textiles (6%), plastic film (1%), and electronics (1%).
- No Program materials consist of other construction and demolition waste (1%) and composite wood (1%).

3.3 Single Family Recycling

The following summarizes the recycling composition results and contamination rate for SF recycling.

3.3.1 SF Recycling Composition Results

Figure 3-3 illustrates the average composition of the recycling stream from the SF sector in Winter 2025. This is a snapshot of the types and relative quantities of materials that were discarded by residents at this time of the year.

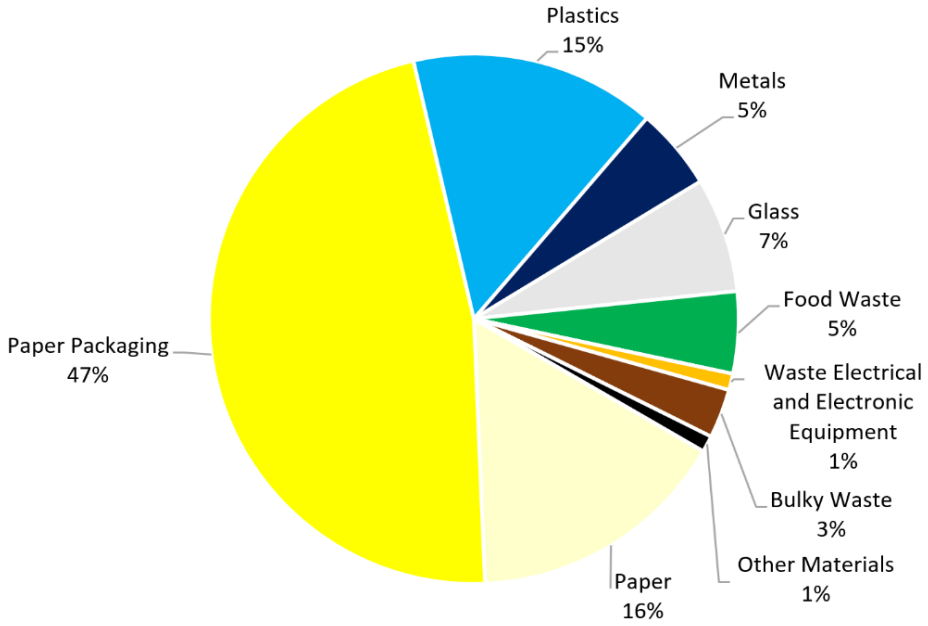


Figure 3-3: Overall SF Recycling Composition

The SF recycling stream was primarily composed of paper packaging (47%), paper (16%), and plastic (15%). These three primary categories represent 78% of the SF recycling stream. The primary categories in SF recycling are broken down as follows:

- Paper packaging mainly including corrugated cardboard (24%) and boxboard/cores (16%).
- Paper was primarily composed of mixed paper (13%), other paper – non-obligated (1%), and shredded paper (1%).
- Plastics included #1 polyethylene terephthalate thermoform (3%), #5 polypropylene (2%), #2 HDPE non-beverage (2%), #1 polyethylene terephthalate bottles, jugs, and jars – non-beverage (2%), and durable plastic products (1%).

3.3.2 Contamination Rate

Figure 3-4 summarizes the percent contamination in the SF recycling stream. The percent contamination represents the percentage of materials that are considered garbage, organic, or depot materials. The total percent contamination for the SF recycling stream was 20%, including garbage materials (8%), organic material (6%), depot materials (3%), and no program materials (3%). The recycling stream contained 9% cross contamination and 11% contamination. The contamination is broken down as follows:

- Garbage included durable plastic products (1%), laminated paper packaging (1%), and other paper – non-obligated (1%).
- Organics was primarily composed of avoidable food waste (4%) and unavoidable food waste (1%).
- Depot materials were primarily composed of electronics (1%), textiles (1%), and plastic film (1%).
- No program consisted of furniture and fixtures (3%).

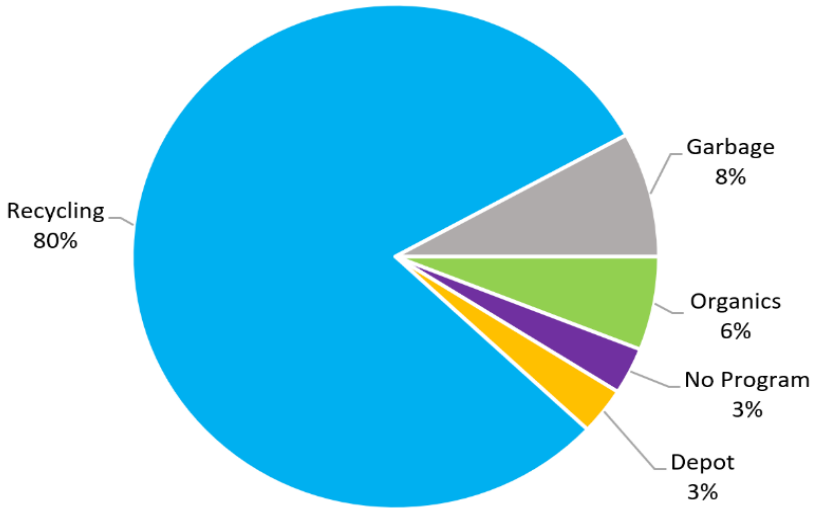


Figure 3-4: Overall SF Recycling Contamination

3.3.3 Capture Rate

Table 3-4 summarizes the amount of recyclable material found in the garbage, recycling, and organics streams; these values represent the average from the ten neighbourhoods. The amount of recyclable materials in the garbage, recycling, and organics streams was 20 kg, 41 kg, and 0 kg, respectively. Table 3-5 summarizes the capture rate of the recycling stream. The total amount of recyclables that could be diverted was 61 kg and the total amount of recyclables captured in the recycling stream was 41 kg. Therefore, the capture rate for recyclables was calculated to be almost 68%.

Table 3-4: Recyclable Material in All Streams – Winter 2025

	Garbage	Recycling	Organics
Average Waste Generated (kg)	151.57	51.61	46.28
Percent Composition of Recyclable Material	13.0%	79.6%	0.1%
Recyclable Material (kg)	19.70	41.07	0.04

Table 3-5: Recyclable Material Capture Rate – Winter 2025

	Value
Total Recyclables in Garbage, Recycling, and Organics Streams (kg)	60.81
Total Recyclables Captured in the Recycling Stream (kg)	41.07
Capture Rate	67.5%

3.4 Single Family Organics

The following summarizes the composition results and contamination rate in the SF organics stream.

3.4.1 SF Organics Composition Results

Figure 3-5 illustrates the average composition of the organics stream from the SF sector in Winter 2025. This is a snapshot of the types and relative quantities of materials that were discarded by residents at this time of the year.

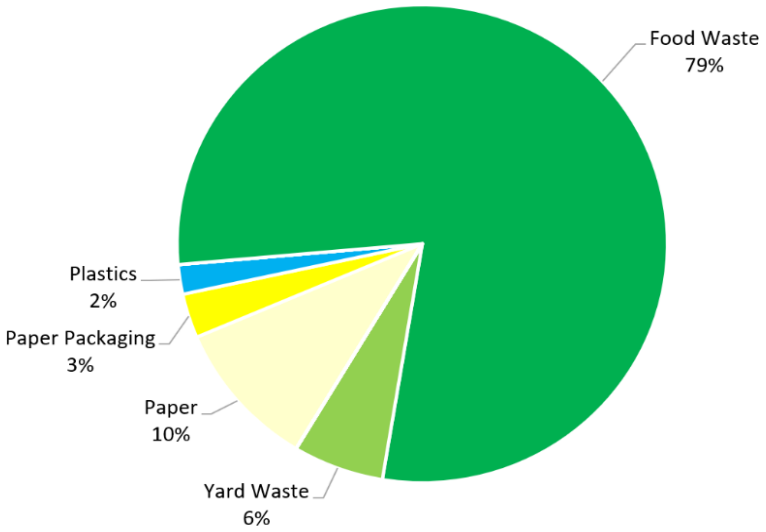


Figure 3-5: Overall SF Organics Composition

The majority of the SF organics stream was composed of food waste (79%) and paper (10%). These two primary categories represent 89% of the SF organics stream. The top primary categories in SF organics may be broken down as follows:

- Food waste was composed of avoidable food waste (42%) and unavoidable food waste (37%).
- Paper was composed of tissue/toweling (7%) and shredded paper (2%).

3.4.2 Contamination Rate

Figure 3-6 summarizes the percent contamination of the SF organics stream. The percent contamination represents the percentage of materials that are considered garbage or recyclable materials. The total contamination for the SF organics stream was 4% and consisted of 4% garbage materials. The contamination may be broken down as follows:

- Garbage was primarily composed of laminated paper packaging (1%) and #7 biodegradable/compostable plastics (1%).

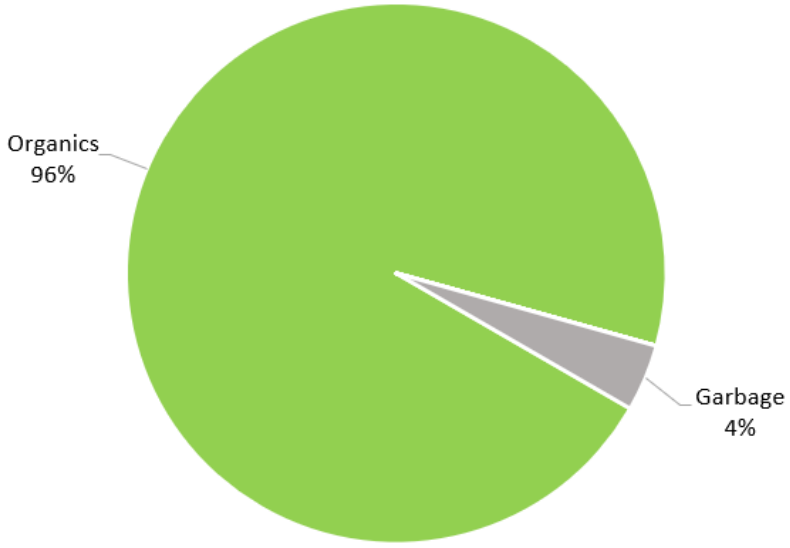


Figure 3-6: Overall SF Organics Contamination

3.4.3 Capture Rate

Table 3-6 summarizes the amount of organic material found in the garbage, recycling, and organics streams. These values represent the average from the ten neighbourhoods. The total amount of organic materials in the garbage, recycling, and organics streams was 64 kg, 3 kg, and 45 kg, respectively. Table 3-7 summarizes the capture rate of the organics stream. The total amount of organics that could be diverted was 112 kg and the total amount of organics captured in the organics stream was 45 kg. Therefore, the capture rate for organics was determined to be almost 40%.

Table 3-6: Organic Material in All Streams – Winter 2025

	Garbage	Recycling	Organics
Average Waste Generated (kg)	151.57	51.61	46.28
Percent Composition of Organic Material	42.2%	6.1%	96.3%
Organic Material (kg)	63.93	3.14	44.57

Table 3-7: Organic Material Capture Rate – Winter 2025

	Value
Total Organics in Garbage, Recycling, and Organics Streams (kg)	111.64
Total Organics Captured in the Organic Stream (kg)	44.57
Capture Rate	39.9%

3.4.4 Bag Count

Table 3-8 summarizes the number of bags found in the SF organics stream during the Winter 2025 sorting event. The average number of #7 biodegradable/compostable bags per 100 kg of organics was 49 bags/100 kg. The range was between 0 and 99 bags/100 kg. The average number of LDPE/HDPE non-packaging bags per 100 kg of organics was 3 bags/100 kg ranging between 0 and 8 bags/100 kg. LDPE/HDPE non-packaging included purchased film bags (e.g., garbage bags, kitchen catchers, sandwich and freezer bags, etc.).

Table 3-8: Number of Bags in SF Organics Samples – Winter 2025

Route	Weight of Organics (kg)	#7 Biodegradable/ Compostable (bags)	LDPE/HDPE Non-Packaging (bags)	#7 Biodegradable/ Compostable (bags/100 kg)	LDPE/HDPE Non-Packaging (bags/100 kg)
Nutana	77.35	37	0	48	0
Nutana Park	-	-	-	-	-
Eastview	65.05	24	0	37	0
Rosewood	85.25	29	7	34	8
Willowgrove	14.20	14	0	99	0
City Park	14.50	0	0	0	0
Silverwood Heights	89.55	29	5	32	6
Mount Royal	0.00	-	-	-	-
Dundonald	-	-	-	-	-
Parkridge	24.30	23	1	95	4
Average	**46.28**	**22**	**2**	**49**	**3**

3.5 Multi-Unit Garbage

The following summarizes the waste composition results and diversion potential for MU garbage.

3.5.1 Multi-Unit Garbage Composition Results

Figure 3-7 illustrates the average waste composition of the garbage stream from the MU sector in Winter 2025. This is a snapshot of the types and relative quantities of materials that were discarded by residents at this time of the year. The overall MU garbage stream was primarily composed of food waste (31%), plastics (12%), household hygiene (12%), paper packaging (10%), and paper (9%). The remainder was comprised of other materials (6%), construction and demolition wastes (5%), bulky waste (5%), metals (4%), glass (2%), yard waste (2%), and waste electrical and electronic equipment (2%).

The most prominent six primary categories represent 74% of the MU garbage stream and are broken down as follows:

- Food waste was composed of avoidable food waste (24%) and unavoidable food waste (7%). Avoidable food waste included edible food (e.g., whole fruits and vegetables, prepared meals, meat, and bread) and unavoidable food waste included inedible food (e.g., peels, bones, solidified fats, and coffee grounds).
- Plastics included durable plastic products (2%), plastic laminates and other film packaging (2%), LDPE/HDPE film – products (non-packaging) (1%), plastic film (1%), and #5 polypropylene (1%).
- Household hygiene was mainly composed of diapers (5%), pet waste (5%), and sanitary products (1%).
- Paper packaging included corrugated cardboard (4%), boxboard/cores (3%), and laminated paper packaging (1%).
- Paper consisted of tissue/towelling (6%) and mixed paper (3%).

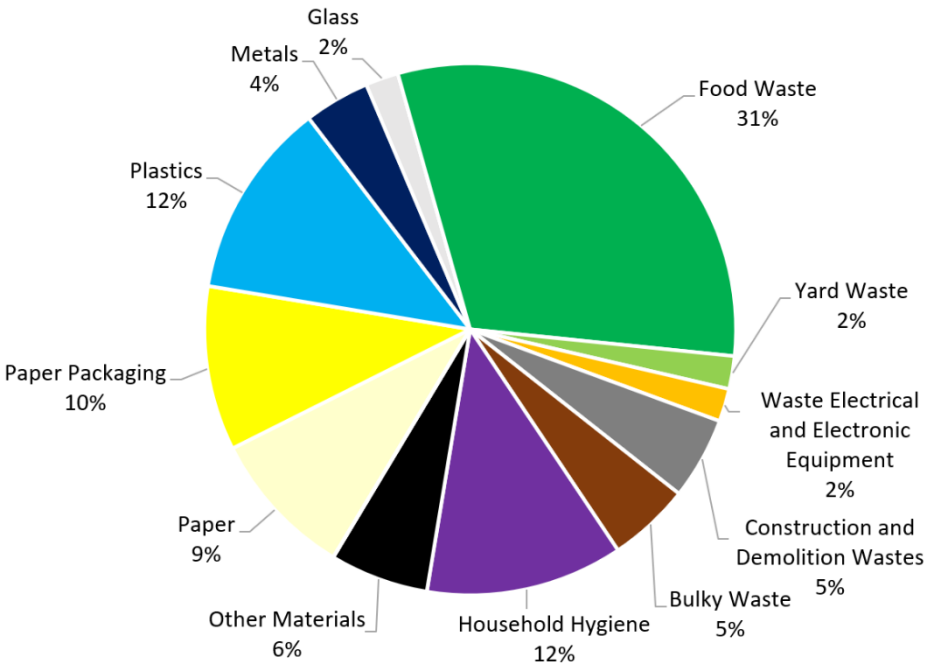


Figure 3-7: Overall Multi-Unit Garbage Composition

3.5.2 Diversion Potential

Figure 3-8 summarizes the diversion potential of the MU garbage stream. The diversion potential represents the percentage of materials that could be diverted from the garbage stream through the City's organics, recycling, and depot programs. The 'No Program' category represents the theoretical diversion potential of materials from the garbage stream, but no corresponding program or service is currently offered (e.g., construction and demolition wastes). The total diversion potential for the MU garbage stream was calculated to be 79% and consisted of 39% organic materials, 19% recyclable materials, 11% depot materials, and 10% No Program materials. The diversion potential for the MU garbage stream that is based on existing programs and services is 69%. The diversion potential may be broken down as follows:

- Organics was primarily composed of avoidable food waste (24%), unavoidable food waste (8%), and tissue/toweling (6%).
- Recycling included corrugated cardboard (4%), boxboard/cores (3%), mixed paper (3%), #5 polypropylene (1%), and glass – non beverage (1%).
- Depot was primarily composed of textiles (5%), electronics (2%), other metal (2%), and plastic film (1%).
- No Program included composite wood (4%), furniture or fixtures (4%), and other large bulky items (1%).

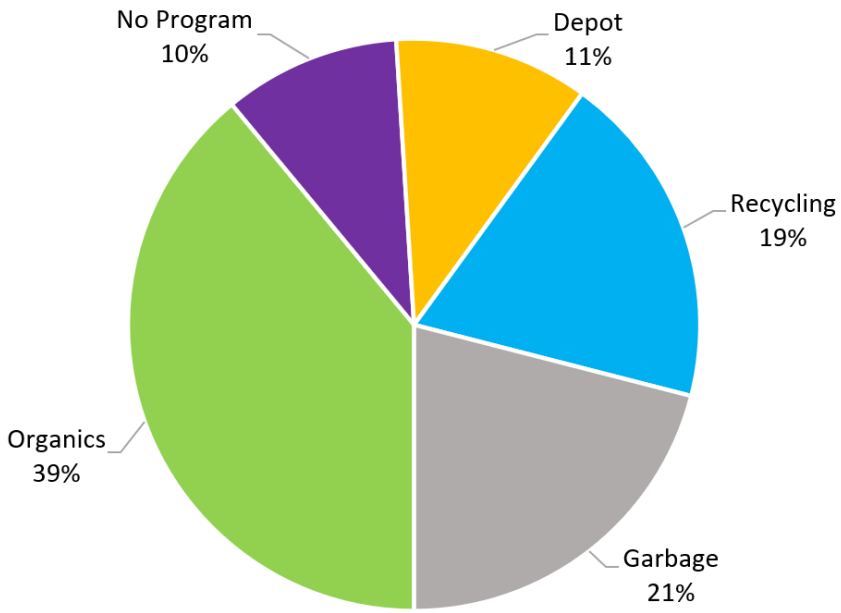


Figure 3-8: Overall MU Garbage Diversion Potential

4.0 INTERESTING FINDS

Table 4-1 lists some of the notable, unexpected, or unusual materials found during the waste composition study. These materials will not necessarily skew the results as it is not atypical to have these types of materials present in the waste stream.

Table 4-1: Notable Materials – Winter 2025

Waste Stream	Sample ID	Description	Photo
Garbage	WI25-MU-01	Printer	
Garbage	WI25-MU-03	Drill	
Garbage	WI25-MU-04	Air Fryer	
Garbage	WI25-DUN-G	Cell Phones	
Recycling	WI25-MOU-R	Food Waste	

Waste Stream	Sample ID	Description	Photo
Recycling	WI25-EAS-R	Printer	
Recycling	WI25-DUN-R	Desk	

5.0 COMMENTS AND RECOMMENDATIONS

The following are some initial comments and recommendations based on the findings from the Winter 2025 study:

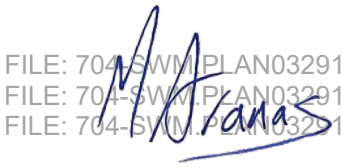
- The bi-weekly collection frequency appeared to be sufficient for garbage and recycling. On average, garbage and recycling carts were set out 81% and 76% of the time and were 70% and 74% full, respectively.
- The participation rate for the organics carts over the winter season was low. This may be attributed to the monthly collection frequency and/or seasonal impacts (e.g., little to no yard waste generated in the winter). On average, organics carts were set out 29% of the time and were 26% full.
- The cart sizes worked well for most households; however:
  - There were 25 carts out of 182 total possible carts (14%) that were overfilled (e.g., the lid did not fully close). This included 15 garbage and ten recycling carts.
  - There were 64 carts out of 182 total possible carts (or approximately 35% of carts) that were filled to half capacity or below. This included 27 garbage, 18 recycling, and 19 organics carts.
- Additional education and communication on the green cart program may be beneficial to:
  - Reduce the amount of organic waste in the garbage stream. In the Winter 2025 study, the garbage stream was comprised of 42% organic materials (mostly consisting of avoidable food waste, unavoidable food waste, yard waste, and compostable paper).
  - Increase residential uptake on the organics program. On average, organics carts were set out 29% of the time and were 26% full.
- Additional education and communication on the recycling program may be beneficial to:
  - Reduce the amount of contamination in the recycling stream. Approximately 8% of material in the recycling carts was garbage. The recycling stream also contained 6% organic material and 3% depot material.

- Additional education and communication on existing MU diversion programs my be beneficial as materials that can be recycled made up 19% of the MU garbage stream, and materials that could be dropped off at a depot made up 11% of the MU garbage stream.
- An organics diversion program for MU residents can help divert more waste from the Landfill. Approximately 39% of MU garbage was organic material, including avoidable food waste, unavoidable food waste, and food soiled a paper (tissues and toweling).

6.0 CLOSURE

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

Respectfully submitted,
Tetra Tech Canada Inc.



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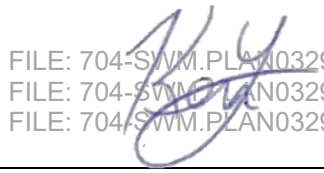

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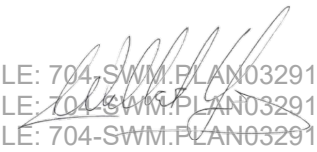

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APPENDIX A

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LIMITATIONS ON USE OF THIS DOCUMENT

GEOENVIRONMENTAL

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APPENDIX B

SELECTED PHOTOGRAPHS

Photo 1: Field Staff Collecting Materials

Photo 2: Field Staff Sorting a Sample

Photo 3: Example of a 100 kg Single Family Garbage Sample

Photo 4: Example of a Single Family Recycling Sample

Photo 5: Example of a Multi-Unit Garbage Load

Photo 6: Example of a 100 kg Multi-Unit Garbage Sample

Photo 7: Example of the Mixed Paper Category

Photo 8: Example of the Boxboard/Cores Category

Photo 9: Example of the Laminated Paper Packaging Category

Photo 10: Example of the Kraft Paper Category

Photo 11: Example of the Ice Cream Containers and Other Bleached Long Polycoat Fiber

Photo 12: Example of the Molded Pulp Category

Photo 13: Example of the #1 Polyethylene Terephthalate Bottles – Beverage Category

Photo 14: Example of the #1 Polyethylene Terephthalate Thermoform Category

Photo 15: Example of the #2 High-Density Polyethylene Non-Beverage Category

Photo 16: Example of the #6 Polystyrene – Non-Expanded Category

Photo 17: Example of the #6 Polystyrene – Expanded Category

Photo 18: Example of the Plastic Film Category

Photo 19: Example of the Plastic Laminates and Other Film Packaging Category

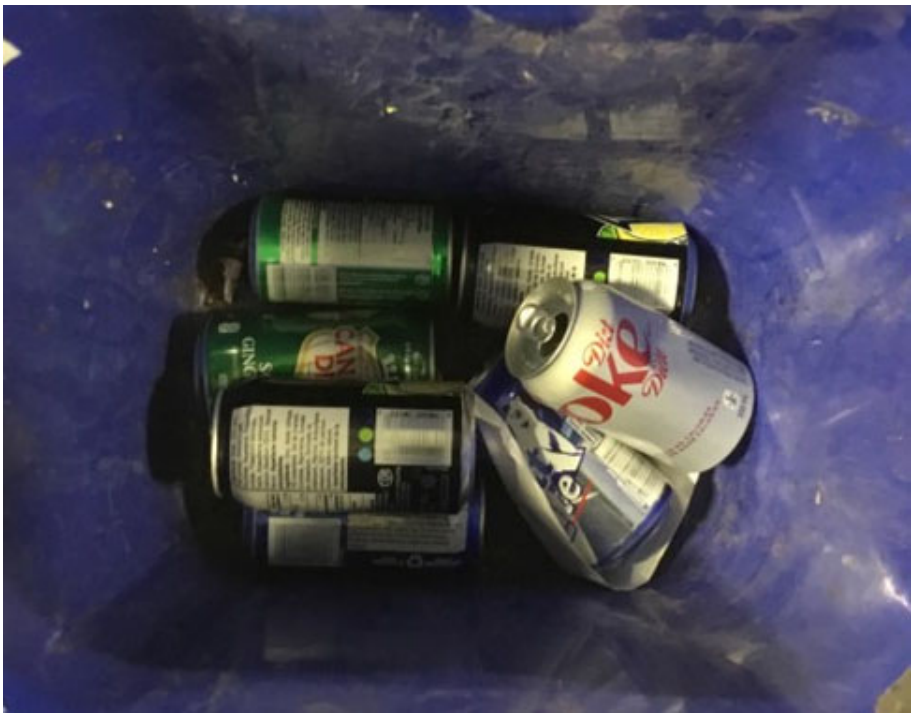

Photo 20: Example of the Aluminum Beverage Cans Category

Photo 21: Example of the Aluminum Non-Beverage Category

Photo 22: Example of the Steel Food Cans Category

Photo 23: Example of the Other Metal Category

Photo 24: Example of the Glass Non-Beverage Category

Photo 25: Example of the Avoidable Food Waste Category

Photo 26: Example of the Unavoidable Food Waste Category

Photo 27: Example of the Wooden Utensils Category

Photo 28: Example of the Gypsum Wallboard Category

Photo 29: Example of the Diapers Category

Photo 30: Example of the Textiles Category

APPENDIX C

MATERIAL CATEGORIES

Table C-1: Material Category Descriptions – Garbage and Recycling Stream

	Category	Description and/or Examples	Diversion Potential
01	**Paper**		
1	Mixed Paper	▪ Fine household papers, writing paper, office paper, copy paper, bills and statements, ad mail, etc. Includes glossy flyers and advertising that are not distributed with newspapers. Includes gift wrap, construction paper, puzzle books, e.g., sudoko or colouring books ▪ Glossy magazines, catalogues, calendars, annual reports (must be bound, i.e., stapled or glued) ▪ Telephone books and other directories such as the Yellow Pages ▪ Non Newspapers (e.g., television guides, Auto Trader, Real Estate News) plus inserts and flyers from newspapers made of newsprint ▪ Daily and weekly newspapers	Recycling
2	Tissue/Toweling	▪ Paper napkins, towel, tissues	Organics
3	Food Soiled Paper	▪ Plates, cups, muffin wrappers, coffee filters, teabags, bags, food packaging	Organics
4	Shredded Paper	▪ Paper that has been shredded mechanically into thin strips	Recycling
5	Other Paper – Non-Obligated	▪ Soft or hard covered literary books, academic journals, textbooks, photographs	Garbage
02	**Paper Packaging**		
6	Corrugated Cardboard	▪ Includes micro-flute corrugated containers, pizza boxes, waxed corrugated containers, electronic product boxes such as television and computer boxes, boxes used to direct mail for residential consumers	Recycling
7	Boxboard/Cores	▪ Boxboard, paperboard, cereal box, shoe box, frozen food box, cores from toilet paper/toweling/gift wrap, etc. Includes wet-strength boxboard, fast food cartons such as fry/onion ring boxes and paper plates	Recycling
8	Kraft Paper	▪ Kraft paper bags and wrap, grocery or retail bags, potato bags, some pet food bags, etc. Includes brown, white, and coloured kraft paper and bags. No bags with bonded plastic or foil liners/layers/coatings. Includes bags with a light grease coating	Recycling
9	Molded Pulp	▪ Egg cartons, drink trays, other trays, molded pulp flower pots/trays, etc.	Recycling
10	Polycoat Beverage Cups	▪ Hot beverage/food containers, with polycoat on inside only, including coffee cups, soup cups/bowls, chili cups, etc. Cold beverage/food containers with polycoat on both sides including fountain drinks, take-out ice cream cups	Garbage
11	Ice Cream Containers and Other Bleached Long Polycoat Fibre	▪ Polycoated paper ice cream containers, typically with a lid, excluding boxboard folded ice cream boxes. Food containers with white fibre and a rolled or folded rim, includes Michelina's frozen food, KFC tubs	Garbage
12	Laminated Paper Packaging	▪ Paper based packaging (at least 85% paper) with foil or plastic liners/layers/coatings, pouches, cookie bags, microwave popcorn bags, fast food sandwich wraps, gift bags, paper based trays, etc.	Garbage
13	Spiral Wound Containers	▪ Spiral wound cans with paper walls and plastic or metal tops or bottoms; frozen juice, Pringles, raisins, etc.	Garbage

	Category	Description and/or Examples	Diversion Potential
14	Gable Top Containers – Beverage	▪ Polycoat containers with a gable shaped top, milk and milk substitutes like soy, almond, and rice milk, and juices	Recycling
15	Gable-Top Containers – Non-Beverage	▪ Polycoat containers with a gable shaped top that previously contained some foods or other products, e.g., sugar, molasses, etc.	Garbage
16	Aseptic Containers – Beverage	▪ Polycoat fibre and foil containers (e.g., Tetra Pak) for beverage, e.g., soy, almond, and rice milk, juice boxes	Recycling
17	Aseptic Containers – Non-Beverage	▪ Polycoat fibre and foil containers (e.g., Tetra Pak) for soup, sauces, etc.	Garbage
03	**Plastics**		
18	#1 Polyethylene Terephthalate Bottles – Beverage	▪ Soft drink/water bottles	Recycling
19	#1 Polyethylene Terephthalate Bottles, Jugs and Jars – Non-Beverage	▪ Salad dressing bottles, peanut butter jars	Recycling
20	#1 Polyethylene Terephthalate Thermoform	▪ #1 clamshells, #1 egg cartons, #1 trays, #1 blister packaging, #1 drink cups, etc.	Recycling
21	#2 High-Density Polyethylene Beverage	▪ Milk jugs, juice containers and drinakble yogurt bottles	Recycling
22	#2 High-Density Polyethylene Non-Beverage	▪ Laundry detergent, bleach, vinegar, personal care products such as shampoos, conditioners, and body wash, winshield washing fluid containers, cleaning supplies. Other #2 containers such as margarine and yogurt containers and lids made from high-density polyethylene	Recycling
23	#3 Polyvinyl Chloride	▪ Tubs, condiment containers	Recycling
24	#5 Polypropylene	▪ #5 bottles and containers. plastic bottles includes nutritional supplement drinks, shampoos, etc. ▪ #5 containers such as margarine and yogurt containers and other containers made from polypropylene, including tubs and lids with resin codes #5 polypropylene	Recycling
25	#6 Polystyrene – Expanded	▪ Foam take-out containers such as drink cups, large, white packaging foam, meat trays, coloured foam insulation	Depot
26	#6 Polystyrene – Non-Expanded	▪ Polystyrene clear clamshell containers such as berry and muffin containers, rigid polystyrene cups, plates, and bottles	Recycling
27	#7 Biodegradable/Compostable Plastics	▪ Might not have #7 label; include Biodegradable Products Institute (BPI) certification	Garbage
28	Plastic Film	▪ High-density polyethylene and low-density polyethylene film, dry cleaning bags, bread bags, milk bags, toilet paper and paper towel over-wrap, lawn seed bags	Depot
29	Low-Density Polyethylene and High-Density Polyethylene Film – Products (Non-Recyclable)	▪ Non-packaging low-density polyethylene and high-density polyethylene film (e.g., kitchen catchers, squeeze tubes, 6-pack rings, paper lined plastic, etc.)	Garbage
30	Plastic Laminates and Other Film Packaging	▪ Laminated plastic film and bags that are at least 85% plastic (by weight). Includes chip bags, vacuum sealed bags, cereal liners, candy wraps, pasta bags, boil in a bag, plastic based food pouches, etc.	Depot

	Category	Description and/or Examples	Diversion Potential
31	Other Rigid Plastic Packaging	▪ Other rigid containers (#4 and #7), non-polyethylene terephthalate blister packaging, unmarked/coded packaging, plant pots and trays, pails, etc.	Garbage
32	Durable Plastic Products	▪ Non-packaging such as videocassette recorder tapes, compact discs, toys, games, tupperware, etc. Include multi-material items that are mainly plastic – e.g., a plastic toy truck with metal axles	Garbage
04	**Metals**		
33	Aluminum Beverage Cans	▪ Aluminum soft drinks, soda, juice, alcoholic beverages, beer cans	Recycling
34	Aluminum Non-Beverage	▪ Food containers, aluminum foil wrap, pie plates, baking trays, etc.	Recycling
35	Aerosol Containers	▪ Mousse spray cans, air freshener spray cans, deodorant spray cans, hairspray cans, food spray cans for cheese or whipped cream, empty spray cans, cooking oil, etc.	Garbage
36	Other Aluminum	▪ Aluminum siding, baking trays, etc.	Garbage
37	Steel Beverage Cans	▪ Steel apple juice, alcoholic beverages, beer cans, Sapporo, etc.	Recycling
38	Steel Food Cans	▪ Soup, beans, peaches, etc. ▪ No alcohol containers	Recycling
39	Other Metal	▪ Wire, hardware, copper	Depot
05	**Glass**		
40	Glass Beverage Containers	▪ Juice, beer, and wine bottles	Recycling
41	Glass Non-Beverage	▪ Food containers	Recycling
42	Other Glass	▪ Window glass, plates, and glasses, light bulbs (fluorescent tubes and compact fluorescents go in Household Hazardous Waste)	Garbage
06	**Household Hazardous Waste**		
43	Household Hazardous Waste	▪ Labelled CAUTION, WARNING, CORROSIVE, EXPLOSIVE, FLAMMABLE, POISONOUS or TOXIC ▪ Acid, adhesives, automotive, batteries, cleaners, cylinders, corrosives, fuels, light bulbs, mercury, oxidizing chemicals, paint, pesticides and fertilizers, pharmaceuticals, solvents	Depot
07	**Food Waste**		
44	Avoidable Food Waste	▪ Whole fruits and vegetables, meat, bread, prepared meals, fruits and vegetables trimmings	Organics
45	Unavoidable Food Waste	▪ Inedible food, such as peelings, bones, solidified fats, cooking oils, and food grease	Organics
08	**Yard Waste**		
46	Yard and Garden Debris	▪ Grass clippings, leaves, weeds, plant parts, pumpkins, topsoil, and sod	Organics
47	Brush and Branches	▪ Small twigs and tree trimmings that are no more than 60 cm in length and 2 cm in diameter, conifer cones and needles, wood chips and bark mulch	Organics

	Category	Description and/or Examples	Diversion Potential
09	**Waste Electrical and Electronic Equipment**		
48	Electronics	▪ Laptop computers, notebooks, tablet PCs, TVs and computer monitors, printers, fax machines, photocopiers and scanners, personal, portable, or home DVD, Blu Ray, CD, MP3, record players; film or digital cameras/video recorders; digital picture frames; audio and video baby monitors; cable/satellite TV receivers; amps, receivers; speakers, headphones, microphones, coaxial, telephone, speaker wires, coffee makers, mixers, bread makers, toaster ovens, waffle, makers, crock pots, saw, drill, etc.	Depot
10	**Construction And Demolition Wastes**		
49	Dimensional Lumber – Untreated	▪ Unpainted or unstained lumber and pallets	No program
50	Dimensional Lumber – Treated	▪ Painted, stained, or treated lumber	No program
51	Composite Wood	▪ Plywood, oriented strand board, medium-density fibreboard, particle board	No program
52	Gypsum Wallboard	▪ Drywall	No program
53	Asphalt Roofing Shingles	▪ Asphalt shingles and tarpaper	No program
54	Mixed Metals	▪ Ferrous, non-ferrous, aluminum	No program
55	Concrete, Bricks	▪ Concrete, paving stones, cement bricks	No program
56	Ceramics, Porcelain	▪ Tiles, toilets, sinks	No program
57	Carpeting	▪ Carpeting, underlay, mats	No program
58	Other Construction and Demolition Wastes	▪ Vinyl siding, misc. conduits, ceiling tiles, plumbing pipes, insulation	No program
11	**Bulky Waste**		
59	Furniture or Fixtures	▪ Chairs, sofas, cabinets, tables, garden furniture, etc.	No program
60	Other Large Bulky Items	▪ Other large items not classified elsewhere	No program
12	**Household Hygiene**		
61	Diapers	▪ Diapers	Garbage
62	Sanitary Products	▪ Sanitary napkins, hygiene products, etc.	Garbage
63	Pet Waste	▪ Animal feces, bedding, kitty litter	Garbage
13	**Other Materials**		
64	Textiles	▪ Clothing, shoes, mats, drapes, sheets, etc. Plastic rice sacks go in Other Rigid Plastic Packaging	Depot
65	Tires and Other Rubber	▪ Rubber tires and tubes, other rubber items such as hoses	Garbage
66	Other Waste	▪ Materials not classified elsewhere, wooden fruit basket, vacuum bags, wax candles, furnace filters, etc.	Garbage
67	Wood Utensils	▪ Chopsticks, wooden forks, toothpicks, etc.	Organics

Table C-2: Material Category Descriptions – Organics Stream

	Category	Description and/or Examples	Diversion Potential
01	**Paper**		
1	Mixed Paper	▪ Fine household papers, writing paper, office paper, copy paper, bills and statements, ad mail, etc. Includes glossy flyers and advertising that are not distributed with newspapers. Includes gift wrap, construction paper, puzzle books, e.g., sudoko or colouring books ▪ Glossy magazines, catalogues, calendars, annual reports (must be bound, i.e., stapled or glued) ▪ Telephone books and other directories such as the Yellow Pages ▪ Non Newspapers (e.g., television guides, Auto Trader, Real Estate News) plus inserts and flyers from newspapers made of newsprint ▪ Daily and weekly newspapers	Organics
2	Tissue/Toweling	▪ Paper napkins, towel, tissues	Organics
3	Food Soiled Paper	▪ Plates, cups, muffin wrappers, coffee filters, teabags, bags, food packaging	Organics
4	Shredded Paper	▪ Paper that has been shredded mechanically into thin strips	Organics
5	Other Paper – Non-Obligated	▪ Soft or hard covered literary books, academic journals, textbooks, photographs	Garbage
02	**Paper Packaging**		
6	Corrugated Cardboard	▪ Includes micro-flute corrugated containers, pizza boxes, waxed corrugated containers, electronic product boxes such as television and computer boxes, boxes used to direct mail for residential consumers	Organics
7	Boxboard/Cores	▪ Boxboard, paperboard, cereal box, shoe box, frozen food box, cores from toilet paper/toweling/gift wrap, etc. Includes wet-strength boxboard, fast food cartons such as fry/onion ring boxes and paper plates	Organics
8	Kraft Paper	▪ Kraft paper bags and wrap, grocery or retail bags, potato bags, some pet food bags, etc. Includes brown, white, and coloured kraft paper and bags. No bags with bonded plastic or foil liners/layers/coatings. Includes bags with a light grease coating	Organics
9	Molded Pulp	▪ Egg cartons, drink trays, other trays, molded pulp flower pots/trays, etc.	Organics
10	Polycoat Beverage Cups	▪ Hot beverage/food containers, with polycoat on inside only, including coffee cups, soup cups/bowls, chili cups, etc. Cold beverage/food containers with polycoat on both sides including fountain drinks, take-out ice cream cups	Garbage
11	Ice Cream Containers and Other Bleached Long Polycoat Fibre	▪ Polycoated paper ice cream containers, typically with a lid, excluding boxboard folded ice cream boxes. Food containers with white fibre and a rolled or folded rim, includes Michelina's frozen food, KFC tubs	Garbage
12	Laminated Paper Packaging	▪ Paper based packaging (at least 85% paper) with foil or plastic liners/layers/coatings, pouches, cookie bags, microwave popcorn bags, fast food sandwich wraps, gift bags, paper based trays, etc.	Garbage
13	Spiral Wound Containers	▪ Spiral wound cans with paper walls and plastic or metal tops or bottoms; frozen juice, Pringles, raisins, etc.	Garbage

	Category	Description and/or Examples	Diversion Potential
14	Gable Top Containers – Beverage	▪ Polycoat containers with a gable shaped top, milk and milk substitutes like soy, almond, and rice milk, and juices	Recycling
15	Gable-Top Containers – Non-Beverage	▪ Polycoat containers with a gable shaped top that previously contained some foods or other products, e.g., sugar, molasses, etc.	Garbage
16	Aseptic Containers – Beverage	▪ Polycoat fibre and foil containers (e.g., Tetra Pak) for beverage e.g., soy, almond, and rice milk, juice boxes	Recycling
17	Aseptic Containers – Non-Beverage	▪ Polycoat fibre and foil containers (e.g., Tetra Pak) for soup, sauces, etc.	Garbage
03	**Plastics**		
18	#1 Polyethylene Terephthalate Bottles – Beverage	▪ Soft drink/water bottles	Recycling
19	#1 Polyethylene Terephthalate Bottles, Jugs and Jars – Non-Beverage	▪ Salad dressing bottles, peanut butter jars	Recycling
20	#1 Polyethylene Terephthalate Thermoform	▪ #1 clamshells, #1 egg cartons, #1 trays, #1 blister packaging, #1 drink cups, etc.	Recycling
21	#2 High-Density Polyethylene Beverage	▪ Milk jugs, juice containers and drinakble yogurt bottles	Recycling
22	#2 High-Density Polyethylene Non-Beverage	▪ Laundry detergent, bleach, vinegar, personal care products such as shampoos, conditioners, and body wash, winshield washing fluid containers, cleaning supplies. Other #2 containers such as margarine and yogurt containers and lids made from high-density polyethylene	Recycling
23	#3 Polyvinyl Chloride	▪ Tubs, condiment containers	Recycling
24	#5 Polypropylene	▪ #5 bottles and containers. plastic bottles includes nutritional supplement drinks, shampoos, etc. ▪ #5 containers such as margarine and yogurt containers and other containers made from polypropylene, including tubs and lids with resin codes #5 polypropylene	Recycling
25	#6 Polystyrene – Expanded	▪ Foam take-out containers such as drink cups, large, white packaging foam, meat trays, coloured foam insulation	Depot
26	#6 Polystyrene – Non-Expanded	▪ Polystyrene clear clamshell containers such as berry and muffin containers, rigid polystyrene cups, plates, and bottles	Recycling
27	#7 Biodegradable/Compostable Plastics	▪ Might not have #7 label; include Biodegradable Products Institute (BPI) certification	Garbage
28	Plastic Film	▪ High-density polyethylene and low-density polyethylene film, dry cleaning bags, bread bags, milk bags, toilet paper and paper towel over-wrap, lawn seed bags	Depot
29	Low-Density Polyethylene and High-Density Polyethylene Film – Products (Non-Recyclable)	▪ Non-packaging low-density polyethylene and high-density polyethylene film (e.g., kitchen catchers, squeeze tubes, 6-pack rings, paper lined plastic, etc.)	Garbage
30	Plastic Laminates and Other Film Packaging	▪ Laminated plastic film and bags that are at least 85% plastic (by weight). Includes chip bags, vacuum sealed bags, cereal liners, candy wraps, pasta bags, boil in a bag, plastic based food pouches, etc.	Depot

	Category	Description and/or Examples	Diversion Potential
31	Other Rigid Plastic Packaging	▪ Other rigid containers (#4 and #7), non-polyethylene terephthalate blister packaging, unmarked/coded packaging, plant pots and trays, pails, etc.	Garbage
32	Durable Plastic Products	▪ Non-packaging such as videocassette recorder tapes, compact discs, toys, games, tupperware, etc. Include multi-material items that are mainly plastic – e.g., a plastic toy truck with metal axles	Garbage
04	**Metals**		
33	Aluminum Beverage Cans	▪ Aluminum soft drinks, soda, juice, alcoholic beverages, beer cans	Recycling
34	Aluminum Non-Beverage	▪ Food containers, aluminum foil wrap, pie plates, baking trays, etc.	Recycling
35	Aerosol Containers	▪ Mousse spray cans, air freshener spray cans, deodorant spray cans, hairspray cans, food spray cans for cheese or whipped cream, empty spray cans, cooking oil, etc.	Garbage
36	Other Aluminum	▪ Aluminum siding, baking trays, etc.	Garbage
37	Steel Beverage Cans	▪ Steel apple juice, alcoholic beverages, beer cans, Sapporo, etc.	Recycling
38	Steel Food Cans	▪ Soup, beans, peaches, etc. ▪ No alcohol containers	Recycling
39	Other Metal	▪ Wire, hardware, copper	Depot
05	**Glass**		
40	Glass Beverage Containers	▪ Juice, beer, and wine bottles	Recycling
41	Glass Non-Beverage	▪ Food containers	Recycling
42	Other Glass	▪ Window glass, plates, and glasses, light bulbs (fluorescent tubes and compact fluorescents go in Household Hazardous Waste)	Garbage
06	**Household Hazardous Waste**		
43	Household Hazardous Waste	▪ Labelled CAUTION, WARNING, CORROSIVE, EXPLOSIVE, FLAMMABLE, POISONOUS or TOXIC ▪ Acid, adhesives, automotive, batteries, cleaners, cylinders, corrosives, fuels, light bulbs, mercury, oxidizing chemicals, paint, pesticides and fertilizers, pharmaceuticals, solvents	Depot
07	**Food Waste**		
44	Avoidable Food Waste	▪ Whole fruits and vegetables, meat, bread, prepared meals, fruits and vegetables trimmings	Organics
45	Unavoidable Food Waste	▪ Inedible food, such as peelings, bones, solidified fats, cooking oils, and food grease	Organics
08	**Yard Waste**		
46	Yard and Garden Debris	▪ Grass clippings, leaves, weeds, plant parts, pumpkins, topsoil, and sod	Organics
47	Brush and Branches	▪ Small twigs and tree trimmings that are no more than 60 cm in length and 2 cm in diameter, conifer cones and needles, wood chips and bark mulch	Organics

	Category	Description and/or Examples	Diversion Potential
09	**Waste Electrical and Electronic Equipment**		
48	Electronics	▪ Laptop computers, notebooks, tablet PCs, TVs and computer monitors, printers, fax machines, photocopiers and scanners, personal, portable, or home DVD, Blu Ray, CD, MP3, record players; film or digital cameras/video recorders; digital picture frames; audio and video baby monitors; cable/satellite TV receivers; amps, receivers; speakers, headphones, microphones, coaxial, telephone, speaker wires, coffee makers, mixers, bread makers, toaster ovens, waffle, makers, crock pots, saw, drill, etc.	Depot
10	**Construction And Demolition Wastes**		
49	Dimensional Lumber – Untreated	▪ Unpainted or unstained lumber and pallets	No program
50	Dimensional Lumber – Treated	▪ Painted, stained, or treated lumber	No program
51	Composite Wood	▪ Plywood, oriented strand board, medium-density fibreboard, particle board	No program
52	Gypsum Wallboard	▪ Drywall	No program
53	Asphalt Roofing Shingles	▪ Asphalt shingles and tarpaper	No program
54	Mixed Metals	▪ Ferrous, non-ferrous, aluminum	No program
55	Concrete, Bricks	▪ Concrete, paving stones, cement bricks	No program
56	Ceramics, Porcelain	▪ Tiles, toilets, sinks	No program
57	Carpeting	▪ Carpeting, underlay, mats	No program
58	Other Construction and Demolition Wastes	▪ Vinyl siding, misc. conduits, ceiling tiles, plumbing pipes, insulation	No program
11	**Bulky Waste**		
59	Furniture or Fixtures	▪ Chairs, sofas, cabinets, tables, garden furniture, etc.	No program
60	Other Large Bulky Items	▪ Other large items not classified elsewhere	No program
12	**Household Hygiene**		
61	Diapers	▪ Diapers	Garbage
62	Sanitary Products	▪ Sanitary napkins, hygiene products, etc.	Garbage
63	Pet Waste	▪ Animal feces, bedding, kitty litter	Garbage
13	**Other Materials**		
64	Textiles	▪ Clothing, shoes, mats, drapes, sheets, etc. Plastic rice sacks go in Other Rigid Plastic Packaging	Depot
65	Tires and Other Rubber	▪ Rubber tires and tubes, other rubber items such as hoses	Garbage
66	Other Waste	▪ Materials not classified elsewhere, wooden fruit basket, vacuum bags, wax candles, furnace filters, etc.	Garbage
67	Wood Utensils	▪ Chopsticks, wooden forks, toothpicks, etc.	Organics

APPENDIX D

WASTE COMPOSITION RESULTS

Table D-1: Winter 2025 Waste Composition Results – by Stream

Category	SF			MU
	Garbage	Recycling	Organics	Garbage
01 Paper	8.8%	15.9%	10.0%	8.9%
01. Mixed Paper	1.7%	13.2%	0.2%	2.7%
02. Tissue/Toweling	6.3%	0.5%	6.8%	5.7%
03. Food Soiled Paper	0.5%	0.1%	1.0%	0.4%
04. Shredded Paper	0.0%	1.1%	2.0%	0.0%
05. Other Paper – Non-Obligated	0.3%	1.0%	0.0%	0.0%
02 Paper Packaging	6.8%	46.3%	2.8%	10.4%
06. Corrugated Cardboard	1.0%	23.7%	0.9%	4.0%
07. Boxboard/Cores	2.0%	15.7%	0.2%	3.0%
08. Kraft Paper	0.7%	2.1%	0.2%	0.7%
09. Molded Pulp	0.1%	1.7%	0.4%	0.5%
10. Polycoat Beverage Cups	0.6%	0.2%	0.0%	0.3%
11. Ice Cream Containers and Other Bleached Long Polycoat Fiber	0.2%	0.1%	0.0%	0.1%
12. Laminated Paper Packaging	1.9%	1.4%	1.1%	1.1%
13. Spiral Wound Containers	0.1%	0.2%	0.0%	0.1%
14. Gable Top Containers – Beverage	0.0%	0.3%	0.0%	0.3%
15. Gable Top Containers – Non-Beverage	0.0%	0.1%	0.0%	0.1%
16. Aseptic Containers – Beverage	0.1%	0.3%	0.0%	0.1%
17. Aseptic Containers – Non-Beverage	0.0%	0.5%	0.0%	0.0%
03 Plastics	12.5%	14.8%	1.9%	11.6%
18. #1 Polyethylene Terephthalate Bottles – Beverage	0.1%	0.7%	0.0%	0.5%
19. #1 Polyethylene Terephthalate Bottles, Jugs, and Jars – Non-Beverage	0.7%	1.8%	0.0%	0.6%
20. #1 Polyethylene Terephthalate Thermoform	0.9%	3.0%	0.0%	0.8%
21. #2 High-Density Polyethylene Beverage	0.1%	0.4%	0.0%	0.1%
22. #2 High-Density Polyethylene Non-Beverage	0.5%	2.1%	0.0%	0.8%
23. #3 Polyvinyl Chloride	0.0%	0.0%	0.0%	0.0%
24. #5 Polypropylene	1.3%	2.3%	0.0%	1.2%
25. #6 Polystyrene – Expanded	0.2%	0.1%	0.0%	0.1%
26. #6 Polystyrene – Non-Expanded	0.2%	0.2%	0.0%	0.1%
27. #7 Biodegradable/Compostable Plastics	0.1%	0.0%	1.0%	0.0%
28. Plastic Film	1.5%	0.6%	0.1%	1.4%
29. Low-Density Polyethylene and High-Density Polyethylene Film – Products (Non-Packaging)	1.2%	0.4%	0.1%	1.3%
30. Plastic Laminates and Other Film Packaging	3.0%	0.8%	0.6%	1.9%
31. Other Rigid Plastic Packaging	0.8%	0.9%	0.1%	0.6%

Category	SF			MU
	Garbage	Recycling	Organics	Garbage
32. Durable Plastic Products	2.1%	1.4%	0.0%	2.2%
04 Metals	2.6%	4.4%	0.0%	3.6%
33. Aluminum Beverage Cans	0.1%	0.4%	0.0%	0.2%
34. Aluminum Non-Beverage	1.1%	1.9%	0.0%	0.9%
35. Aerosol Containers	0.2%	0.1%	0.0%	0.0%
36. Other Aluminum	0.1%	0.0%	0.0%	0.0%
37. Steel Beverage Cans	0.0%	0.0%	0.0%	0.3%
38. Steel Food Cans	0.3%	1.9%	0.0%	0.5%
39. Other Metal	0.8%	0.1%	0.0%	1.7%
05 Glass	3.1%	7.2%	0.0%	1.8%
40. Glass Beverage Containers	0.1%	2.1%	0.0%	0.2%
41. Glass Non-Beverage	1.4%	4.5%	0.0%	1.1%
42. Other Glass	1.6%	0.5%	0.0%	0.5%
06 Household Hazardous Waste	0.8%	0.2%	0.0%	0.3%
43. Household Hazardous Waste	0.8%	0.2%	0.0%	0.3%
07 Food Waste	34.4%	5.3%	78.7%	31.3%
44. Avoidable Food Waste	25.1%	4.4%	41.5%	23.6%
45. Unavoidable Food Waste	9.4%	0.9%	37.2%	7.6%
08 Yard Waste	0.9%	0.1%	5.8%	1.4%
46. Yard and Garden Debris	0.9%	0.1%	4.9%	1.4%
47. Brush and Branches	0.0%	0.0%	0.9%	0.0%
09 Waste Electrical and Electronic Equipment	1.3%	1.3%	0.0%	1.9%
48. Electronics	1.3%	1.3%	0.0%	1.9%
10 Construction and Demolition Wastes	3.2%	0.2%	0.0%	5.3%
49. Dimensional Lumber – Untreated	0.2%	0.0%	0.0%	0.1%
50. Dimensional Lumber – Treated	0.2%	0.2%	0.0%	0.3%
51. Composite Wood	1.1%	0.0%	0.0%	4.1%
52. Gypsum Wallboard	0.1%	0.0%	0.0%	0.7%
53. Asphalt Roofing Shingles	0.0%	0.0%	0.0%	0.0%
54. Mixed Metals	0.0%	0.0%	0.0%	0.0%
55. Concrete, Bricks	0.0%	0.0%	0.0%	0.1%
56. Ceramics, Porcelain	0.1%	0.0%	0.0%	0.0%
57. Carpeting	0.4%	0.0%	0.0%	0.0%
58. Other Construction and Demolition Wastes	1.2%	0.0%	0.0%	0.0%
11 Bulky Waste	0.1%	2.9%	0.0%	5.2%
59. Furniture or Fixtures	0.1%	2.9%	0.0%	4.0%

Category	SF			MU
	Garbage	Recycling	Organics	Garbage
60. Other Large Bulky Items	0.0%	0.0%	0.0%	1.2%
12 Household Hygiene	17.0%	0.1%	0.1%	12.0%
61. Diapers	7.7%	0.0%	0.0%	5.4%
62. Sanitary Products	1.7%	0.1%	0.1%	1.3%
63. Pet Waste	7.5%	0.0%	0.0%	5.3%
13 Other Materials	8.5%	1.1%	0.6%	6.4%
64. Textiles	6.3%	0.7%	0.0%	5.3%
65. Tires and Other Rubber	0.2%	0.1%	0.0%	0.2%
66. Other Waste	1.9%	0.4%	0.5%	0.9%
67. Wood Utensils	0.1%	0.1%	0.1%	0.1%
	100.0%	**100.0%**	**100.0%**	**100.0%**

Notes:
MU – Multi-unit.
SF – Single family.

APPENDIX E

SECTORS AND NAMING CONVENTIONS

Sectors & Naming Convention

The naming convention for samples should be as follows:

Example: **WI25 - NUT - G**

Season and Year	Route	Stream
Options: Summer = SU24 Fall = FA24 Winter = WI25	See Table	Garbage = G Recycling = R Organics = O

Example: **WI25 - MU - 01**

Season and Year	Stream	Sample Number
Options: Summer = SU24 Fall = FA24 Winter = WI25	Multi-unit = MU	Number Consecutively as loads arrive

Route	Collection Route	Community
NUT	01	Nutana
NPA	02	Nutana Park
EAS	03	Eastview
ROS	04	Rosewood
WIL	05	Willowgrove
CIT	06	City Park
SIL	07	Silverwood Heights
MOU	08	Mount Royal
DUN	09	Dundonald
PAR	10	Parkridge