

REPORT PRODUCED FOR: Muswellbrook Shire Council

Household Kerbside Bin System Audit 2022



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EC Sustainable Pty Ltd

ACN: 163 386 061 ABN: 87163 386 061

Tel: 1300 WASTE AUDIT (1300 927 832) Email: <u>info@ecsustainable.com</u>

Head Office

Suites 701-702, 107 Walker Street, NORTH SYDNEY, NSW 2060.

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Executive summary

Muswellbrook Shire Council engaged EC Sustainable Pty Ltd (EC Sustainable) to conduct a bin composition audit of the kerbside residential waste, recycling and organics bin contents. The audit was conducted in autumn 2022¹ during May.

Council has a 3-bin waste collection service contracted to J R Richards & Sons. The service includes a weekly waste bin and fortnightly recycling and garden organics bins collected in alternative weeks.

Council conducted this audit to update its characterisation of bin streams and provide additional data to plan for future services and infrastructure. The data will also assist council to assess the viability of a food organics and garden organics (FOGO) bin service.

This audit was generally designed to conform to the NSW residential waste auditing guidelines known as the "NSW EPA (previous OEH) Guidelines" or the "*Guidelines for Conducting Household Kerbside Residual Waste, Recycling and Garden Organics Audits in NSW Local Government Areas*" (NSW EPA, 2008) and "*Addendum 2010*" (NSW EPA, 2010).

This audit involved:

- A target sample size of 220 households, with 226 households for all streams audited.
- Matched waste and organics bins, whereby the pair of waste and organics bins were targeted from the same household that presented both streams. Recycling bins were targeted at the same households in the other week of the fortnight collection cycle.
- A visual inspection survey of the bins and bin contents at the kerbside prior to collection.
- Individual household bag collection and sorting of the bin contents inspected.
- Approximately 105 material sorting categories, including the NSW Guidelines plus some additional sorting categories to assist with contamination, resource recovery and diversion rates reporting.
- Detailed data analysis as provided in this report.

The objective of this audit was to provide the data indicators, as shown in the following Table.

¹ Due to the COVID-19 restrictions and long-term impacts to society, the sampled areas may have had more households with people working from home. This potentially led to higher waste generation rates and changes to material composition, compared to regular periods.

Key data indicators

Data indicator		Unit of measurement	Results
	_	Waste stream	89.3
Presentation rate	Percentage	Recycling stream	82.8
	(70)	Organics stream	67.5
		Waste stream	10.023
	By weight	Recycling stream	3.291
0	(kg/hh/wk)	Organics stream	8.370
Generation		All streams	21.684
Tale		Waste stream	74.1
	By volume	Recycling stream	75.8
		Organics stream	73.5
		Compliant recyclables *	1.260
	By weight (<i>kg/hh/wk</i>)	Garden organics <	0.066
5		Food	3.754
Resources		Other compostable organics #	1.295
stream ^		Compliant recyclables *	12.6
	Percentage (% by weight)	Garden organics <	0.7
		Food	37.5
		Other compostable organics #	12.9
	Weight	Recycling stream	0.511
Contamination	(kg/hh/wk)	Organics stream	0.405
Containination	Rate	Recycling stream	15.5
	(% by weight)	Organics stream	4.8
Resource	Rate	Recycling stream	68.6
recovery ^ (% by weight)		Organics stream	99.2
Diversion		Current	49.6
	Rate	Recyclables and garden organics	55.7
Potential	(% by weight)	Recyclables, garden organics and food	73.0
diversion ^^	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Recyclables, garden organics, food and other compostable organics	79.0

* Recycling bin compliant material, which should be placed into recycling bins for recovery. Refer to Table 3 for detailed material types.

< Organics bin compliant material, which should be placed into organics bins for recovery. Refer to Table 3 for detailed material types.

Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.

^ At the kerbside for kerbside performance data based on accepted material in each service type.

[^] Potential diversion rates, if the material is recovered from the residual waste stream.



The results show that:

• Generation and contamination:

- Waste stream 10.023kg/hh/wk, with 12.6% accepted recyclables (1.260kg), 0.7% accepted garden organics (0.066kg) and 37.5% loose food (3.754kg).
- Recycling stream 3.291kg/hh/wk, with 15.5% contamination (0.511kg/hh/wk).
- Organics stream 8.370kg/hh/wk, with 4.8% contamination (0.405kg/hh/wk).

• Resource recovery rate and diversion rate:

- The resource recovery rate for recyclables was high at 68.6%.
- The resource recovery rate for compliant organics was high at 99.2%.
- The current diversion rate was 49.6%.
- The potential diversion rate, with current bin system, if all unrecovered recyclable material and compliant garden organics in the waste stream was recovered, was 55.7%.
- The potential diversion rate, with FOGO bin system, if all unrecovered recyclable material, compliant garden organics and compostable food in the waste stream was recovered, was 73.0%.



The following recommendations are made. Council could consider to:

Waste reduction and diversion.

- 1. Commend residents and stakeholders for achieving high diversion and resource recovery rates, as well as low organics stream contamination rate.
- 2. Consider further initiatives to increase diversion. This could include:
 - Recovering more recyclables, particularly items which were heavier ² or had lower resource recovery rates ³.
 - Investigating whether providing FOGO bins could be an option to achieve higher resource recovery.
 - Food organics consists of 37.5% of the waste stream (3.754kg/hh/wk or 7.30L/hh/wk).
 - If a FOGO system is introduced Council could consider changing the collection frequency of the organics bin to weekly and the waste bin to fortnightly to encourage residents to recover food waste and garden organics.
 - If extrapolated the average volume of food to the unweighted Council-wide result, which would be 48,552.3L or 48.55m³ per week Council-wide.
 - Consider conducting pre- and post- kerbside bin audits to monitor and compare the performance of a new FOGO service.
- 3. Consider further initiatives to avoid resource loss into the waste stream, particularly recyclables, food, garden organics and other compostable material.
- 4. Consider further promoting Community Recycling Centre (CRC) and recycling programs for enhanced recovery of textiles, C&D, e-waste and plastic bags/films.
- 5. Consider further promoting the bulky waste collection service.
- 6. Consider improving the asbestos disposal management and education. One household was found with 17.884kg of asbestos disposed in the waste bin.

² Items such as glass bottles and paper/cardboard items, even though they had the higher resource recovery rates.

³ Items such as liquid paperboard, plastics containers (except PET and HDPE) and metal.



Contamination in recycling and organics bins

- 7. Education should focus on the main contaminants:
 - Recycling bin:
 - Containerised liquid.
 - Textile/ rags.
 - Dry cell batteries.
 - Organics bin:
 - Ceramics/ dust/ dirt/ rock/ inert/ ash.
 - Wood/ timber treated.
 - Other putrescibles.
- 8. Conduct a community consultation survey to determine the reasons for contamination, such as resident understanding of recyclables types and if they had sufficient recycling bin capacities.
- 9. Conduct bin inspections and bin stickering programs to identify contamination hotspots and provide feedback to the community.

Waste strategy and processing

10. Consider the potential initiatives to improve at source separation and post-collection recovery. Without making a conclusion in this study, this data assists Council to consider the optimum system which should be considered in a model, alongside the impacts on collection, processing and disposal.

Conduct further auditing

- 11. Council should complete the kerbside audits in other seasons to profile the waste and inform implementation of waste strategy, waste processing and waste minimisation.
- 12. Conduct bin capacity surveys to identify trends in bin needs over a few weekly cycles.

1 Introduction

1.1 Background

ec Sustainable

Muswellbrook Shire Council engaged EC Sustainable Pty Ltd (EC Sustainable) to conduct a bin composition audit of the kerbside residential waste, recycling and organics bin contents. The audit was conducted in autumn 2022⁴ during May.

Council has a 3-bin waste collection service contracted to J R Richards & Sons. The service includes a weekly waste bin and fortnightly recycling and garden organics bins collected in alternative weeks.

Council conducted this audit to update its characterisation of bin streams and provide additional data to plan for future services and infrastructure. The data will also assist council to assess the viability of a food organics and garden organics (FOGO) bin service.

1.2 Objectives

The objectives of this report are to provide the following data indicators:

- Generation rates, based on weight (kg/hh/wk) and volume (L/hh/wk and bin % full).
- Resources in the waste stream.
- Contamination rates and types in the recycling and organics streams.
- Kerbside resource recovery rates.
- Kerbside diversion rates.

The data indicators assist Council to identify the current performance of the bin system at the kerbside, measure trends to plan for future services including reductions in waste to landfill and consider waste minimisation options.

⁴ Due to the COVID-19 restrictions and long-term impacts to society, the sampled areas may have had more households with people working from home. This potentially led to higher waste generation rates and changes to material composition, compared to regular periods.



1.3 Council information

Muswellbrook Shire Council is located in the Upper Hunter Valley approximately 130km north-west of Newcastle. Council has a population of 16,085 people residing in 6,651 households, with an average of 2.4 people per household (Remplan, 2021). Of occupied private dwellings in Council, 87.8% were separate houses, 10.0% were semi-detached, row or terrace houses, townhouses etc, 0.9% were flats or apartments and 0.4% were other dwellings (ABS, 2016).

The threshold for the inclusion of MUDs in the NSW EPA Guideline audits is when 10% or more of dwellings are MUDs. This threshold was met by the demographics of the area. However, the sampling of SUDs only was approved by the Council. Therefore, it was agreed that MUDs were to be excluded from sampling.

Table 1 shows the bin services provided by Council.

Table 1 Bin services provided by Council

Residential bin services				
Stream	Count *	Collection frequency	Bin size	
Waste		Weekly	140L	
Recycling	6,651	Fortnightly	240L	
Organics		Fortnightly	240L	

* Count was based on ABS census data (ABS, 2016).

1.4 Document structure

This report provides:

- Section 2 Methods used to obtain the data.
- Section 3 Assumptions and limitations.
- Section 4 The results of the audit.
- Section 5 Comments and recommendations.
- Section 6 Audit photos.

Appendices provide additional information:

• Appendix 1 – Raw data in a separate Excel file.



2 **Project methods**

This section provides the project methods for the kerbside residential bin audit.

2.1 Guidelines

This audit was designed to conform to the NSW residential waste auditing guidelines known as the "NSW EPA Guidelines" or the "*Guidelines for Conducting Household Kerbside Residual Waste, Recycling and Garden Organics Audits in NSW Local Government Areas*" (NSW, 2008) and "*Addendum 2010*" (NSW EPA, 2010). However, some changes were agreed such as:

- Waste and organics bins were collected from the same address in the same collection week, with recycling bins collected in the alternative week from the same address if presented.
- More detailed sorting categories to allow for more detail related to FOGO services.

2.2 Sampling

A sample size of 226 households was audited. This meets the requirement of a minimum target of 220 households in the NSW EPA Guideline Addendum 2010 (NSW EPA, 2010).

Table 2 provides the sample size in streets and households for each stream. Samples were developed using clustered random sampling of streets within the agreed service areas.

Where a selected household did not present a bin, as identified in the pre-collection bin survey, the next appropriate household in the street was selected. If there were no suitable households available in the street, additional households were selected from a street on the reserve list.



2.3 Audit

2.3.1 Timing

The audit collection was conducted over two weeks from Monday 16th May to Friday 27th May 2022. The two weeks incorporate the waste, recycling and organics bins within both zones A and B.

Table 2 - Sample frame

Audit Collection		Waste and organics *			Recycling *		
week day	day	Suburb(s)	No. of streets	No. of households	Suburb(s)	No. of streets	No. of households
	16/05/2022	Muswellbrook	3	23	Muswellbrook	3	23
	17/05/2022	Muswellbrook	3	23	Muswellbrook	3	23
Week 1	18/05/2022	Denman	3	23	Denman	3	23
	19/05/2022	Muswellbrook	4	22	Muswellbrook	3	22
_	20/05/2022	Muswellbrook	3	22	Muswellbrook	3	22
	23/05/2022	Muswellbrook	3	23	Muswellbrook	3	23
_	24/05/2022	Muswellbrook	3	23	Muswellbrook	3	23
Week 2	25/05/2022	Denman	3	23	Denman	3	23
-	26/05/2022	Muswellbrook	4	22	Muswellbrook	4	22
	27/05/2022	Muswellbrook	3	22	Muswellbrook	3	22
	Total		32	226		31	226

* For waste and organics bins matched pairs were targeted. Recycling bins were targeted at the same households in the other week of the fortnight collection cycle.



2.3.2 **Pre-collection bin survey**

A pre-collection bin survey, or inspection, of selected households was completed just prior to the collection of the bin contents. The bin survey of each selected household included:

- Presentation rate.
- Number of bins presented.
- Bin size for each bin.
- Bin capacity used (i.e. bin percentage full).

2.3.3 Collection

Collection was conducted using an individual bag collection system to collect the contents of each bin separately. This allowed individual results to be collected for each household where they had individual bins.

The bin contents were collected from bins presented to the kerbside on the household's usual collection day. Collections were conducted 1-2 hours prior to Council's regular collection contractor servicing bins to minimise the impact on Council's regular collection systems and maximise the potential to collect the targeted samples prior to the regular Council collection truck.

The materials were delivered to the sorting site for sorting.

2.3.4 Sorting

The materials were sorted and classified for analysis using the categories shown in Table 3.

A safe undercover sorting site was provided at Muswellbrook Waste and Recycling Facility, on Coal Road, Muswellbrook. The sorted recycling and organics were disposed or recycled at the sorting site. The sorted waste was transferred to the transfer station by Council staff.



Material categor	у	Acceptable into recycling bins	Acceptable into organics bins
	Newspaper		-
	Magazines / brochures		-
	Miscellaneous packaging		-
	Corrugated cardboard	•	-
	Cardboard/ packaging board	•	-
	Liquid paperboard containers		-
Paper and Cardboard	Disposable paper product – coffee cups *	-	-
	Disposable paper product – general *	•	-
	Print / writing / office paper – whole		-
	Print / writing / office paper – shredded	-	-
	Composite (mainly paper)	-	-
	AHW / nappies	-	-
	Contaminated soiled paper	-	-
	Fruit and veg peelings	-	-
	Staple foods	-	-
	Meat, bones, fat, carcasses	-	-
	Tea and coffee grinds	-	-
	Egg shells	-	-
	Dairy	-	-
	Seafood	-	-
	Meal leftovers	-	-
Organics	Confectionery	-	-
	Garden / vegetation	-	
	Other putrescible	-	-
	Wood / timber – treated *	-	-
	Wood / timber – untreated *	-	-
	Textile / rags	-	-
	Leather	-	-
	Rubber	-	-
	Oils	-	-
	Glass beverage containers		-
Glass	Glass non beverage containers / other packaging glass		-
	Mixed glass / fines	-	-
	Miscellaneous / other glass	-	-

Table 3 Material categories and recoverability



Table 3 (cont.) – Material categories and recoverability

Material categ	ory	Acceptable into recycling bins	Acceptable into organics bins
	PET beverage containers	•	-
	PET packaging (excl. beverage containers)	•	-
	PET other non-beverage/ non-packaging	-	-
	HDPE beverage containers		-
	HDPE packaging (excl. beverage containers)	•	-
	HDPE other non-beverage / non-packaging	-	-
	PVC beverage containers		-
	PVC packaging (excl. beverage containers)		-
	PVC other non-beverage / non-packaging	-	-
	LDPE packaging		-
Plastics	LDPE non-packaging	-	-
	PP packaging		-
	PP non-packaging	-	-
	PS packaging		-
	EPS packaging	-	-
	PS and EPS non-packaging *	-	-
	Other plastics – packaging	•	-
	Other plastics – other	-	-
	Plastic bags *	-	-
	Plastic film *	-	-
	Composite (mostly plastic)	-	-
	Steel beverage containers		-
Forrous	Steel packaging (excl. beverage containers)		-
Tenous	Steel other non-packaging	-	-
	Composite (mostly ferrous)	-	-
	Aluminium beverage containers		-
	Aluminium packaging (excl. beverage containers)	•	-
Non-terrous	Aluminium non-packaging	•	-
	Non-ferrous other non-packaging	-	-
	Composite (mostly ferrous)	-	-
	Paint	-	-
	Fluorescent tubes	-	-
	Dry cell batteries (non-rechargeable)	-	-
	Dry cell batteries (rechargeable)	-	-
Hazardous	Vehicle batteries	-	-
Tazardous	Household chemicals	-	-
	Asbestos / building materials	-	-
	Clinical pathogenic infectious	-	-
	Gas bottles	-	-
	Hazardous other	-	-



Table 3 (cont.) – Material categories and recoverability

Material categ	ory	Acceptable into recycling bins	Acceptable into organics bins
Building waste	Building materials and fittings	-	-
Earth based	Ceramics, dust, dirt, rock, inert, ash	-	-
	Computer equipment	-	-
	TVs	-	-
E-waste	Mobile phones	-	-
	Electrical items and peripherals	-	-
	Toner cartridges	-	-
Other	Containerised food and liquid *	-	-
	Other waste	-	-

Compliant material in the recycling stream. | Compliant material in the organics stream.

* Additional categories audited by EC Sustainable above the requirements of the NSW EPA Guidelines.



2.4 Management systems

2.4.1 Quality control

The following quality control factors were implemented:

- Material weighing Each weight was verified by a second person for accuracy.
- Scale servicing Each scale was serviced prior to the audit and calibrated for accuracy to within 0.5% of an interval for use.
- Scale calibration Scales were externally serviced and calibrated if they did not calibrate based on internal calibrations.
- **Purity audits** A team leader conducted a purity audit of selected sorted material to ensure quality control standards were met.
- **Data form back-up** All data forms were created in duplicate in the field using electronic back-up. The original and back-up resided in two separate secure locations until data entry.
- **Monitoring** A management staff member was assigned the role of monitoring the audit for WHS compliance, sorting accuracy, conducting equipment checks, managing stakeholders and data verification.

2.4.2 Work Health and Safety

A detailed WHS plan was made for the audit including:

- Safe Work Method Statement (SWMSs).
- Hazard Assessment Checks (HACs).
- Site inductions.
- Training permits to work.
- Personal Protective Equipment (PPE).
- Manual handling aids.



3 Assumptions and limitations

The following assumptions and limitations of the study are noted:

- The audit was designed to meet at least a Council-wide confidence level of 90% with a maximum interval of +/-10% on the main aggregated categories and data indicators within the Executive Summary. The main aggregated categories include:
 - Organics
 - Paper
 - Plastics

- Metals
- Glass
- Earth based

Other

Hazardous

This confidence level should also apply to the main data aggregated indicators of resources in the waste bins, diversion, resource recovery, bin percentage used, contamination and presentation. The data for each dwelling type, suburb and area is indicative, but not designed to the same level of confidence.

- Data is reported up to three (3) decimal places for weights and up to two (2) decimal places for percentages. Figures that are average values such as values per household or per bin, may have a decimal place rounding discrepancy due to the number of decimal places used.
- Bin compositions and quantities can vary seasonally and based on time-specific factors such as weather and events. Seasonal and weather impacts are particularly applicable for garden organics, which can be affected by plant growth rates and gardening activity.
- Bin composition for this audit was recorded by weight, meeting the NSW Guidelines. However, some materials are present in small amounts by weight due to their comparative low densities, for example plastic films and Expanded Polystyrene (EPS). However, materials like these can consume large amounts of the bin volume. A weight-based analysis was used for this audit because it is:
 - The NSW Guideline approach.
 - The most accurate method to collect data, particularly with individual household sorting and a large number of sorting categories.
- This results from this audit were not weighted. Therefore, the results can't represent the Council-wide results.

Council could consider collecting volume-based composition data through load audits, where the amount of material per sample is greater.



4 Results

This section provides the results for this audit. Only SUD households were audited in this audit.

4.1 **Presentation rate**

Table 4 provides the bin presentation rate for each bin stream. The bin presentation rate is the percentage of bins placed out on the kerbside for collection to the total number of bins available at those properties, as defined in the Glossary section.

The data shows the presentation rates were:

- Waste: 89.3% (226 out of 253).
- Recycling: 82.8% (226 out of 273).
- Organics: 67.5% (226 out of 335).

It is possible that the presentation rate may be increased further between the audit truck sampling and the regular truck completing its collection. Samples were collected 1-2 hours before the regular collection trucks collection time before the early morning collection. As a result, there is a risk that targeted households may present their bins after the audit sampling but before their regular collection and would therefore not be included in the calculation of the presentation rate.



4.2 Generation rates

4.2.1 By weight

This section provides the average generation rate per household by weight for the audit period. The results are converted to generation rate per week and provided based on two scenarios:

- The average generation rate when a bin was presented (i.e. per bin collected).
- The average generation rate allowing for non-presentation (i.e. per household Council-wide including zero weights for bins that were not presented). This could also be used to estimate the annual generation rate and to validate the weighbridge data at the waste receiving facilities.

Where a bin is presented

Figure 1 and Table 4 show that an average household generated a total of 21.684kg material per week where bins were presented, consisting:

- Waste stream: 10.023kg.
- Recycling stream: 3.291kg.
- Organics stream: 8.370kg.

Allowing non-presentation

The total generation rate was 17.325kg/hh/wk, assuming a mean bin weight of zero for nonpresented bins. The extrapolated council-wide annual generation rate was 5,992 tonnes per year:

- Waste: 3,096 tonnes.
- Recycling: 942 tonnes.
- Organics: 1,954 tonnes.







Table 4 Generation rate – by weight

			Generation rate by weight
	when a bin was presented	Waste	10.023
		Recycling	3.291
Average		Organics	8.370
weekly		Total	21.684
generation per	allowing for non- presentation *	Waste	8.951
(kg/hh/wk)		Recycling	2.725
		Organics	5.650
		Total	17.325
Extrapolated	allowing for non- presentation *	Waste	3,096
annual generation council- wide (tonnes//yr) ^		Recycling	942
		Organics	1,954
		Total	5,992

* Assumes a mean bin weight of zero for non-presented bins. | ^ Based on a total of 6,651 occupied households councilwide, as supplied by ABS.



4.2.2 By volume

This section provides the average generation rate per household by volume for the audit period. The results are based on the bin percentage full survey and reported as: the mean bin percentage full at the time of collection, and the mean litres generated per household per week.

Figure 2 and Table 5 show that an average household generated a total of 286L bin contents per week, when bins were presented, consisting:

- Waste: 104L.
- Recycling: 91L.
- Organics: 91L.

Table 6 also shows the mean bin percentage full at the time of collection:

- Waste: 74.1%.
- Recycling: 75.8%.
- Organics: 73.5%.







Table 5 -Generation rate – by volume

			Generation rate by volume
Average weekly generation per household (L/hh/wk) *	when a bin was presented	Waste	104
		Recycling	91
		Organics	91
		Total	286
Average bin percentage full (% by volume)		Waste	74.1
		Recycling	75.8
		Organics	73.5

* Based on bin sizes and collection frequencies as shown in Table 1 in Section 1.3, as well as bin percentage full results from bin surveys.

Table 6 provides the bin percentage full distribution. The data shows that the percentage of households that used 90+% of their available bin capacity was 36.7% for waste, 48.2% for recycling and 40.3% for organics.

The households, who used more than 90% of their bin capacity, appeared to have insufficient bin capacity based on the current generation and this is quite a high percentage.

- The lack of remaining waste bin capacity for some households may lead to overflow of waste into the recycling and organics bins, causing contamination and potentially litter.
- The lack of remaining recycling and organics bin capacity for some households may lead to recoverable material being placed in the waste bins, although this may still be recovered by post-collection recovery if available.

Households that filled their bins to 90%+ may require additional bin capacity, with further study on bin usage. However, it may be that the bins were full because they were not presented for every collection event. To consider whether a lack of capacity is an issue, Council should study the setout rate of those households as well as the bin percentage full for each collection. The set-out rate is the number of times a bin is presented over a series of collection events, such as four or more collections.

Stream	bin % full range	Number of collection points	Percentage of collection points
	0-49	61	27.0
	50-69	29	12.8
Waste	70-89	53	23.5
	90+	83	36.7
	Total	226	100.0
	0-49	60	26.5
_ Recycling _ _	50-69	40	17.7
	70-89	17	7.5
	90+	109	48.2
	Total	226	100.0
	0-49	63	27.9
0	50-69	35	15.5
Organics -	70-89	37	16.4
	90+	91	40.3
	Total	226	100.0

Table 6 Bin usage – percentage full distribution

* The number of collection points does not add up to the number of households, because some MUDs were counted as one collection point.



4.3 Composition

The composition of each stream is provided at two levels:

- Overview of resources in each stream based on material recoverability in Table 3.
- Composition by sorting categories, as shown in Table 3.

4.3.1 Resources in each stream – overview

This section provides the resources summary, based on suitability for particular uses:

- **Compliant recyclable** materials that can be placed into the kerbside recycling bins.
- **Potentially recyclable** metals that are not compliant in the kerbside recycling bin, but that may be recovered by a MRF or AWT due to their value or other factors.
- **Compliant organics** materials that can be placed into the kerbside organics bins are garden organics.
- **Potentially compostable** other materials that can be composted, such as in an AWT, excluding materials that are compliant in the recycling and organics bins. This includes loose food organics and other compostable organics, such as untreated wood/timber, contaminated soiled paper, other putrescible and compostable packaging.
- **MGB non-recyclable** materials that cannot be placed into the kerbside recycling bins and are not compostable or potentially recyclable. This includes some materials that can be recovered but are not recoverable in the Council MGB system, such as textiles at a clothes bank or e-waste at a drop-off centre, mobiles in MobileMuster.

The resource details are provided in Section 4.4 for unrecovered resources and Section 4.6 for contamination rates. The detailed sorting categories included in each recovery category is provided in Table 3 in section 2.4.4.



Figure 3 and Tables 7 to 9 show resources summary in each stream. Compliant recyclables in each stream that should be placed in the recycling stream accounted for approximately:

- Waste: 12.6% of the stream.
- Recycling: 84.5% of the stream, which was correctly recovered in recycling bins.
- Organics: 0.1% of the stream.

Compliant garden organics in each stream that should be placed in the organics stream accounted for approximately:

- Waste: 0.7% of the stream.
- Recycling: 0.1% of the stream.
- Organics: 95.2% of the stream, which was correctly recovered in the organics stream.



Figure 3 - Overview of resources in each stream



Waste stream





Organics stream





Table 7 Overview of resources – waste stream

Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight)
Compliant recyclable	1.260	12.57
Potentially recyclable	0.196	1.96
Compliant organics	0.066	0.66
Food	3.754	37.45
Other compostable #	1.295	12.92
MGB non-recyclable	3.452	34.44
Total	10.023	100.00

Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.

Table 8 Overview of resources – recycling stream

Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight)
Compliant recyclable	2.780	84.47
Potentially recyclable	0.040	1.22
Compliant organics	0.002	0.06
Food	0.059	1.79
Other compostable #	0.033	1.00
MGB non-recyclable	0.377	11.46
Total	3.291	100.00

Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.

Table 9 Overview of resources – organics stream

Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight)
Compliant recyclable	0.012	0.14
Potentially recyclable	0.000	0.00
Compliant organics	7.965	95.16
Food	0.013	0.16
Other compostable #	0.040	0.48
MGB non-recyclable	0.340	4.06
Total	8.370	100.00

Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.



4.3.2 Composition – waste stream

The top 15 categories by weight of the waste stream were:

- 1. Food/ kitchen at 37.45%, which was mainly meal leftovers (18.2% of the stream) and fruit and vegetable peelings (8.2% of the stream).
- 2. Other putrescible, 9.63%.
- 3. AHW/ nappies, 6.74%.
- 4. Containerised food and liquid, 6.67%.
- 5. Textile/ rags, 3.84%.
- 6. Plastic film, 3.09%.
- 7. Contaminated soiled paper, 2.69%.
- 8. Cardboard/ package board, 2.56%.
- 9. Ceramics/ dust/ dirt/ rock/ inert/ ash, 2.44%.
- 10. Plastic bags, 2.38%.
- 11. Building materials and fittings (NEC), 2.17%.
- 12. PP packaging, 1.22%.
- 13. Steel other non-packaging, 1.18%.
- 14. Disposable paper product other, 1.13%.
- 15. Glass non-beverage containers/ other packaging glass, 1.09%.

Table 10 provides the detailed composition by sorting category.



- Waste stream composition

	Material categories	Weight (kg/hh/wk)	Percentage (% by weight)
Newspaper		0.017	0.17
	Magazines / brochures	0.045	0.45
	Miscellaneous packaging	0.006	0.06
	Corrugated cardboard	0.047	0.47
	Cardboard/ packaging board	0.257	2.56
	Liquid paperboard containers	0.028	0.28
	Tetrapak containers	0.004	0.04
Dispo	osable paper product – coffee cups	0.010	0.10
Ľ	Disposable paper product – general	0.113	1.13
	Print / writing / office paper	0.067	0.67
	Composite (mainly paper)	0.018	0.18
	AHW / nappies	0.676	6.74
	Contaminated soiled paper	0.270	2.69
	Sub-total: Paper	1.558	15.54
	Fruit and veg peelings	0.820	8.18
	Staple foods	0.461	4.60
	Meat, bones, fat, carcasses	0.402	4.01
	Tea and coffee grinds	0.023	0.23
Food / kitchen	Egg shells	0.016	0.16
	Dairy	0.031	0.31
	Seafood	0.121	1.21
	Meal leftovers	1.828	18.24
	Confectionery	0.052	0.52
	Sub-total: Food / kitchen	3.754	37.45
	Garden / vegetation - compliant	0.062	0.62
	Garden / vegetation – oversized	0.004	0.04
	Other putrescible	0.965	9.63
	Wood / timber – treated	0.086	0.86
	Wood / timber - untreated	0.060	0.60
	Textile / rags	0.385	3.84
	Leather	0.055	0.55
	Rubber	0.035	0.35
	Oils	0.012	0.12
	Sub-total: Organics	5.418	54.06
	Glass beverage containers	0.076	0.76
Glass non beverage	containers / other packaging glass	0.109	1.09
	Miscellaneous / other glass	0.019	0.19
Mixed glass / fines		0.010	0.10
Sub-total: Glass		0.214	2.14
PET beverage containers		0.020	0.20
PET packaging (excl. beverage containers)		0.093	0.93
PET other non-beverage/ non-packaging		0.001	0.01
HDPE beverage container		0.019	0.19
HDPE packaging (excl. beverage containers)		0.039	0.39
HDPE other non-beverage / non-packaging		0.000	0.00
PVC beverage containers		0.001	0.01
PVC packaging (excl. beverage containers)		0.003	0.03
PVC other non-beverage / non-packaging		0.010	0.10
LDPE packaging		0.012	0.12



Table 10 (cont.) Waste stream composition

Material categories	Weight (kg/hh/wk)	Percentage (% by weight)
LDPE non-packaging	0.042	0.42
PP packaging	0.122	1.22
PP non-packaging	0.013	0.13
PS packaging	0.007	0.07
EPS packaging	0.015	0.15
PS and EPS non-packaging	0.004	0.04
Other plastics beverage containers	0.000	0.00
Other plastics packaging	0.000	0.00
Other plastics – other	0.036	0.36
Plastic bags	0.239	2.38
Plastic film – compostable	0.000	0.00
Plastic film – other	0.310	3.09
Composite (mostly plastic)	0.080	0.80
Sub-total: Plastics	1.066	10.64
Steel beverage containers	0.000	0.00
Steel packaging (excl. beverage containers)	0.100	1.00
Steel other non-packaging	0.118	1.18
Composite (mostly ferrous)	0.064	0.64
Sub-total: Ferrous	0.282	2.81
Aluminium beverage containers	0.017	0.17
Aluminium packaging (excl. beverage containers)	0.037	0.37
Aluminium non-packaging	0.022	0.22
Non-ferrous other non-packaging	0.009	0.09
Composite (mostly ferrous)	0.005	0.05
Sub-total: Non-ferrous	0.090	0.90
Paint	0.002	0.02
Fluorescent tubes	0.000	0.00
Dry cell batteries (non-rechargeable)	0.002	0.02
Dry cell batteries (rechargeable)	0.000	0.00
Vehicle batteries	0.000	0.00
Household chemicals	0.074	0.74
Asbestos / building materials	0.079	0.79
Clinical pathogenic infectious	0.021	0.21
Gas bottles	0.000	0.00
Hazardous other	0.004	0.04
Sub-total: Hazardous	0.182	1.82
Building materials and fittings (NEC)	0.218	2.17
Ceramics / dust / dirt / rock / inert / ash	0.245	2.44
Computer equipment	0.001	0.01
TVs	0.000	0.00
Mobile phones	0.001	0.01
Electrical items and peripherals	0.079	0.79
Toner cartridges	0.000	0.00
Sub-total: E-waste	0.081	0.81
Containerised food and liquid – cooking oil	0.000	0.00
Containerised food and liquid – non-cooking oil	0.669	6.67
Other (specify)	0.000	0.00
Sub-total: Miscellaneous	0.669	6.67
Grand total	10.023	100.00



4.3.3 Composition – recycling stream

The top 15 categories by weight of the recycling stream were:

- 1. Glass beverage containers, 18.57%.
- 2. Corrugated cardboard, 15.31%.
- 3. Cardboard / package board, 12.67%.
- 4. Newspaper, 7.93%.
- 5. Print/ writing/ office paper, 5.71%.
- 6. Magazines/ brochures, 4.38%.
- 7. Glass non-beverage containers / other packaging glass, 3.92%.
- 8. Steel packaging (excl. beverage containers), 3.07%.
- 9. Containerised food and liquid, 2.73%.
- 10. HDPE beverage containers, 2.61%.
- 11. PET beverage containers, 1.85%.
- 12. HDPE packaging (excl. beverage containers), 1.85%.
- 13. Food/ kitchen, 1.79%.
- 14. Textile/ rags, 1.61%.
- 15. PP packaging, 1.46%.

Table 11 provides the detailed composition by sorting category.



Table 11 - Recycling stream composition

Newspaper 0.261 7.93 Magazines / brochures 0.144 4.38 Miscellaneous packaging 0.014 0.43 Corrugated cardboard 0.504 15.31 Cardboard / packaging board 0.417 12.67 Liquid paperboard containers 0.015 0.46 Tetrapak containers 0.027 0.82 Disposable paper product - contre cups 0.004 0.12 Disposable paper product - contre cups 0.004 0.12 Disposable paper product - contre cups 0.007 0.21 ArW / napples 0.015 0.46 Contraininated solied paper 0.018 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Staple food 0.000 0.00 Event office paper 0.086 0.24 Meat, bornes, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Condectorary 0.001 0.00 Garden / vegetation - complianti<		Material categories	Weight (kg/hh/wk)	Percentage (% by weight)
Magazines / brochures 0.144 4.38 Miscellaneous packaging 0.014 0.43 Corrugated cardboard 0.504 16.31 Cardboard/ packaging board 0.417 12.67 Liquid paperboard containers 0.015 0.46 Tetrapak containers 0.027 0.82 Disposable paper product - general 0.030 0.91 Print/ writing / office paper 0.188 5.71 Composite (mainly paper) 0.007 0.21 AHW / nappies 0.015 0.46 Containinated solied paper 0.019 0.58 Sub-totai: Paper 1.665 49.98 Fruit and veg peelings 0.019 0.58 Sub-totai: Paper 0.000 0.00 Mest, bores, Frait, acrasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Mest, bores, Frait, acrasses 0.000 0.00 Sub-totai: Food / kitchen 0.059 1.79 Garden / vegetaion – complant 0.002 0.06 Garden / veget		Newspaper		7.93
Miscellaneous packaging 0.014 0.43 Carrugated cardboard 0.504 15.31 Cardboard packaging board 0.417 12.67 Liquid paperboard containers 0.015 0.46 Tetrapak containers 0.027 0.82 Disposable paper product – coffee cups 0.004 0.12 Disposable paper product – coffee cups 0.004 0.12 Disposable paper product – coffee cups 0.007 0.21 AttW / nappies 0.015 0.46 Contaminated solied paper 0.015 0.46 Contaminated solied paper 0.019 0.58 Sub-total: Paper 1.665 49.98 Fruit and veg peelings 0.000 0.00 Sub-total: Paper 1.665 49.98 Fruit and veg peelings 0.000 0.00 Sub-total: Paper 1.665 49.98 Fruit and veg peelings 0.000 0.00 Outoo 0.000 0.00 Sub-total: Paper 0.655 1.79 Te and coffee grinds		Magazines / brochures		4.38
Corrugated cardboard 0.504 15.31 Cardboard/ packaging board 0.417 12.67 Liquid paperboard containers 0.015 0.46 Tetrapak containers 0.027 0.82 Disposable paper product - offee cups 0.004 0.12 Disposable paper product - offee cups 0.004 0.12 Disposable paper product - general 0.030 0.91 Cornositie (mainly paper) 0.007 0.21 AHW / napples 0.015 0.46 Contaminated soled paper 0.613 0.46 Contaminated soled paper 0.614 49.96 Foul and veg poelings 0.019 0.58 Sub-total: Paper 1.645 49.96 Food / kitchen Egg shells 0.000 0.00 Baily 0.000 0.00 0.00 Sub-total: Food / kitchen 0.069 1.79 Garden / vegetaton - orenjiant 0.002 0.06 Garden / vegetaton - orenziad 0.000 0.00 Outor / vegetaton - orenziad 0.006 <		Miscellaneous packaging	0.014	0.43
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Tetrapak containers 0.027 0.82 Disposable paper product - confec cups 0.004 0.12 Disposable paper product - general 0.030 0.91 Print / writing / office paper 0.188 5.71 Composite (mainly paper) 0.007 0.21 AHW / nappies 0.015 0.46 Contaminated solied paper 0.019 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Stab-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Stab-total: Paper 1.645 49.98 Food / kitchen Egg shells 0.000 0.00 Te and coffee grinds 0.000 0.00 0.00 Stab-total: Food / kitchen 0.059 1.79 0.001 0.033 Sub-total: Food / kitchen 0.059 1.79 0.066 0.18 Wood / timber - treated 0.006 0.18 0.006 0.18 Wood / timber - treated 0.001		Liquid paperboard containers	0.015	0.46
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Print / writing / office paper 0.188 5.71 Composite (mainly paper) 0.007 0.21 AHW / nappies 0.015 0.46 Contaminated solied paper 0.019 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Stabit foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.07 Tea and coffee grinds 0.000 0.00 Bairy 0.000 0.00 Stabit foods 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compilant 0.002 0.06 Garden / vegetation – compilant 0.002 0.06 Wood / timber – untreated 0.011 0.33 Wood / timber – untreated 0.011 0.33 Wood / timber – untreated 0.016 0.18 Confectioners 0.147 4.47 Garden / vegetation – compliant 0.022 <	Di	sposable paper product – general	0.030	0.91
Composite (mainly paper) 0.007 0.21 AHW / nappies 0.015 0.46 Contaminated solied paper 0.019 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Staple foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Bairy 0.000 0.00 Seefood 0.000 0.00 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation - compliant 0.002 0.66 Garden / vegetation - compliant 0.002 0.06 Garden / vegetation - compliant 0.002 0.06 Wood / timber - untreated 0.011 0.33 Mood / timber - untreated 0.016<		Print / writing / office paper	0.188	5.71
AHW / napples 0.015 0.46 Contaminated solied paper 0.019 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Staple foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Bairy 0.000 0.00 Staple foods 0.000 0.00 Secod 0.000 0.00 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation - compliant 0.006 0.18 Wood / timber - rreated 0.011 0.33 Wood / timber - rreated 0.011 0.33 Wood / timber - rreated 0.006 0.18 Wood / timber - reated 0.000 0.00 Class beverage containers 0.611		Composite (mainly paper)	0.007	0.21
Contaminated soiled paper 0.019 0.58 Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Staple foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Dairy 0.000 0.00 Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.003 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers		AHW / nappies	0.015	0.46
Sub-total: Paper 1.645 49.98 Fruit and veg peelings 0.019 0.58 Staple fools 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Dairy 0.000 0.00 Stable fools 0.000 0.00 Seafood 0.000 0.00 Seafood 0.000 0.00 Maal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Other putresoile 0.000 0.00 Other putresoile 0.006 0.18 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.006 0.18 Other putresoile 0.006 0.18 Other putresoile 0.006 0.18 Oubod / timber – untreated 0.006		Contaminated soiled paper	0.019	0.58
Fruit and vag peelings 0.019 0.58 Staple foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Bainy 0.000 0.00 Staple foods 0.000 0.00 Bainy 0.000 0.00 Staple foods 0.000 0.00 Meat jentovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation - oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber - treated 0.011 0.33 Wood / timber - untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Olis 0.000 0.00 Olis 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass non beverage containers 0.611 1		Sub-total: Paper	1.645	49.98
Staple foods 0.008 0.24 Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Tea and coffee grinds 0.000 0.00 Dairy 0.000 0.00 Bairy 0.000 0.00 Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – corresized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textil / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611		Fruit and veg peelings	0.019	0.58
Meat, bones, fat, carcasses 0.009 0.27 Tea and coffee grinds 0.000 0.00 Egg shells 0.000 0.00 Dairy 0.000 0.00 Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.553 1.61 Leather 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass non beverage containers 0.611 18.57 Glass non beverage containers 0.061 1.85 PET beverage containers 0.036 1.09 PET beve		Staple foods	0.008	0.24
Food / kitchen Tea and coffee grinds 0.000 0.00 Egg shelts 0.000 0.00 Dairy 0.000 0.00 Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation - compliant 0.000 0.00 Other putrescible 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber - untreated 0.001 0.03 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.411 18.57 Glass beverage containers 0.611 18.57 Glass beverage containers 0.611 18.57 Glass non beverage containers 0.061 1.85 PET beverage containers 0.061 1.85 PET beverag		Meat, bones, fat, carcasses	0.009	0.27
Food / kitchen Egg shells 0.000 0.00 Dairy 0.000 0.00 0.00 Seafood 0.000 0.00 0.00 Meal lettovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – compliant 0.002 0.00 Other putrescible 0.006 0.18 Wood / timber – untreated 0.011 0.33 Wood / timber – untreated 0.002 0.06 Rubber 0.006 0.18 Olis 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers 0.611 18.57 Glass non beverage containers 0.611 1.85 PET beverage containers 0.061 1.85 PET beverage containers 0.061 1.85 PET beverage containers <td></td> <td>Tea and coffee grinds</td> <td>0.000</td> <td>0.00</td>		Tea and coffee grinds	0.000	0.00
Dairy 0.000 0.00 Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation - compliant 0.002 0.06 Garden / vegetation - oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber - treated 0.011 0.33 Wood / timber - untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Outo 0.011 18.57 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.071 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage c	Food / kitchen	Egg shells	0.000	0.00
Seafood 0.000 0.00 Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Miscellaneous / other glass 0.751 22.82 PET beverage containers 0.036 1.09 PET other non-beverage containers 0.036 1.09 PET beverage containers 0.061 1		Dairy	0.000	0.00
Meal leftovers 0.022 0.67 Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.002 0.06 Rubber 0.002 0.06 Rubber 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass non beverage containers 0.611 18.57 Glass non beverage containers 0.611 18.57 Glass non beverage containers 0.004 0.12 Miscellaneous / other glass 0.007 0.21 Miscellaneous / other glass 0.0751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036		Seafood	0.000	0.00
Confectionery 0.001 0.03 Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compilant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.000 0.00 Other putrescible 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Mixed glass / fines 0.004 0.12 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET beverage containers 0.061 1.85 Mixed glass / fines <td></td> <td>Meal leftovers</td> <td>0.022</td> <td>0.67</td>		Meal leftovers	0.022	0.67
Sub-total: Food / kitchen 0.059 1.79 Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.006 0.18 Old Leather 0.002 0.06 Rubber 0.006 0.18 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 <		Confectionerv	0.001	0.03
Garden / vegetation – compliant 0.002 0.06 Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.006 0.18 Olis 0.000 0.006 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage / non-packaging 0.001 0.03 HDPE beverage containers)		Sub-total: Food / kitchen	0.059	1.79
Garden / vegetation – oversized 0.000 0.00 Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.006 0.18 Oils 0.000 0.00 Bubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE other non-beverage (non-packaging		Garden / vegetation – compliant	0.002	0.06
Other putrescible 0.006 0.18 Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.000 0.00 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers 0.061 1.85 HDPE beverage containers 0.061 1.85 OUS 0.011 0.03 0.03 PVC beverage containers		Garden / vegetation – oversized	0.000	0.00
Wood / timber – treated 0.011 0.33 Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.004 0.12 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE packaging (excl. be		Other putrescible	0.006	0.18
Wood / timber – untreated 0.008 0.24 Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage / non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE other non-beverage / non-packaging 0.001 0.03 PVC packaging (excl. beverage containers) 0.061 1.85 HDPE other non-beverage / non-packaging 0.001 0.03 PVC packaging (excl. beverage containers) 0.001 0.		Wood / timber – treated	0.011	0.33
Textile / rags 0.053 1.61 Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE beverage containers) 0.061 1.85 HDPE packaging (excl. beverage containers) 0.061 1.03 PVC beverage containers) 0.001 0.03 PVC beverage containers) 0.001 0.03 PVC beverage containers) 0.001 0.03 PVC beve		Wood / timber – untreated	0.008	0.24
Leather 0.002 0.06 Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE packaging (excl. beverage containers) 0.061 1.85 HDPE beverage containers) 0.061 1.03 PVC beverage containers 0.001 0.03 PV		Textile / rags	0.053	1.61
Rubber 0.006 0.18 Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other packaging glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE beverage containers) 0.061 1.85 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE other non-beverage containers) 0.061 1.85 HDPE other non-beverage / non-packaging 0.001 0.03 PVC beverage containers) 0.001 0.03 PVC beverage containers) 0.001		Leather	0.002	0.06
Oils 0.000 0.00 Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers 0.061 1.85 HDPE packaging (excl. beverage container 0.086 2.61 HDPE beverage containers 0.001 0.03 PVC beverage containers 0.001 0.03 PVC beverage containers 0.001 0.03 PVC packaging (excl. beverage containers 0.001 0.03 PVC packaging (excl. beverage containers 0.001 0.03 PVC packaging (excl. beverage containers) 0.001 0.03 PVC packaging (excl. bever		Rubber	0.006	0.18
Sub-total: Organics 0.147 4.47 Glass beverage containers 0.611 18.57 Glass non beverage containers / other packaging glass 0.129 3.92 Miscellaneous / other glass 0.007 0.21 Mixed glass / fines 0.004 0.12 Sub-total: Glass 0.751 22.82 PET beverage containers 0.061 1.85 PET packaging (excl. beverage containers) 0.036 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE packaging (excl. beverage containers) 0.061 1.09 PET other non-beverage/ non-packaging 0.001 0.03 HDPE beverage containers) 0.061 1.85 HDPE other non-beverage / non-packaging 0.001 0.03 PVC beverage containers) 0.001 0.03 PVC beverage containe		Oils	0.000	0.00
Glass beverage containers0.61118.57Glass non beverage containers / other packaging glass0.1293.92Miscellaneous / other glass0.0070.21Mixed glass / fines0.0040.12Sub-total: Glass0.75122.82PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage containers)0.0611.85HDPE packaging (excl. beverage containers)0.0611.85HDPE beverage containers)0.0610.03PET other non-beverage / non-packaging0.0010.03PVC beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06		Sub-total: Organics	0.147	4.47
Glass non beverage containers / other packaging glass0.1293.92Miscellaneous / other glass0.0070.21Mixed glass / fines0.0040.12Sub-total: Glass0.75122.82PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage containers0.0611.85HDPE packaging (excl. beverage containers)0.0611.85HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0010.03PVC other non-beverage / non-packaging0.0010.03PVC other non-beverage / non-packaging0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06		Glass beverage containers	0.611	18.57
Miscellaneous / other glass0.0070.21Mixed glass / fines0.0040.12Sub-total: Glass0.75122.82PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE packaging (excl. beverage containers)0.0610.03PVC beverage containers)0.0010.03PVC beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	Glass non beverage	containers / other packaging glass	0.129	3.92
Mixed glass / fines0.0040.12Sub-total: Glass0.75122.82PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE packaging (excl. beverage containers)0.0610.03PVC beverage containers)0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0020.06		Miscellaneous / other glass	0.007	0.21
Sub-total: Glass0.75122.82PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06		Mixed glass / fines		0.12
PET beverage containers0.0611.85PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	Sub-total: Glass		0.751	22.82
PET packaging (excl. beverage containers)0.0361.09PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	PET beverage containers		0.061	1.85
PET other non-beverage/ non-packaging0.0010.03HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	PET packaging (excl. beverage containers)		0.036	1.09
HDPE beverage container0.0862.61HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	PET other non-beverage/ non-packaging		0.001	0.03
HDPE packaging (excl. beverage containers)0.0611.85HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	HDPE beverage container		0.086	2.61
HDPE other non-beverage / non-packaging0.0010.03PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	HDPE pack	HDPE packaging (excl. beverage containers)		1.85
PVC beverage containers0.0010.03PVC packaging (excl. beverage containers)0.0010.03PVC other non-beverage / non-packaging0.0020.06LDPE packaging0.0020.06	HDPE other non-beverage / non-packaging		0.001	0.03
PVC packaging (excl. beverage containers) 0.001 0.03 PVC other non-beverage / non-packaging 0.002 0.06 LDPE packaging 0.002 0.06	PVC beverage containers		0.001	0.03
PVC other non-beverage / non-packaging 0.002 0.06 LDPE packaging 0.002 0.06	PVC packaging (excl. beverage containers)		0.001	0.03
LDPE packaging 0.002 0.06	PVC other non-beverage / non-packaging		0.002	0.06
	LDPE packaging		0.002	0.06



Table 11 (cont.) - Recycling stream composition

Material categories	Weight (kg/hh/wk)	Percentage (% by weight)
LDPE non-packaging	0.007	0.21
PP packaging	0.048	1.46
PP non-packaging	0.017	0.52
PS packaging	0.001	0.03
EPS packaging	0.000	0.00
PS and EPS non-packaging	0.003	0.09
Other plastics beverage containers	0.000	0.00
Other plastics packaging	0.000	0.00
Other plastics – other	0.009	0.27
Plastic bags	0.007	0.21
Plastic film – compostable	0.000	0.00
Plastic film – other	0.023	0.70
Composite (mostly plastic)	0.026	0.79
Sub-total: Plastics	0.393	11.94
Steel beverage containers	0.000	0.00
Steel packaging (excl. beverage containers)	0.101	3.07
Steel other non-packaging	0.031	0.94
Composite (mostly ferrous)	0.008	0.24
Sub-total: Ferrous	0.140	4.25
Aluminium beverage containers	0.035	1.06
Aluminium packaging (excl. beverage containers)	0.009	0.27
Aluminium non-packaging	0.000	0.00
Non-ferrous other non-packaging	0.001	0.03
Composite (mostly ferrous)	0.000	0.00
Sub-total: Non-ferrous	0.045	1.37
Paint	0.000	0.00
Fluorescent tubes	0.000	0.00
Dry cell batteries (non-rechargeable)	0.000	0.00
Dry cell batteries (rechargeable)	0.033	1.00
Vehicle batteries	0.000	0.00
Household chemicals	0.022	0.67
Asbestos / building materials	0.000	0.00
Clinical pathogenic infectious	0.000	0.00
Gas bottles	0.000	0.00
Hazardous other	0.000	0.00
Sub-total: Hazardous	0.055	1.67
Building materials and fittings (NEC)	0.000	0.00
Ceramics / dust / dirt / rock / inert / ash	0.010	0.30
Computer equipment	0.000	0.00
TVs	0.000	0.00
Mobile phones	0.000	0.00
Electrical items and peripherals	0.014	0.43
Toner cartridges	0.001	0.03
Sub-total: E-waste	0.015	0.46
Containerised food and liquid – cooking oil	0.000	0.00
Containerised food and liquid – non-cooking oil	0.090	2.73
Other (specify)	0.000	0.00
Sub-total: Miscellaneous	0.090	2.73
Grand total	3.291	100.00


4.3.4 Composition – organics stream

The top 5 categories by weight of the organics stream were:

- 1. Garden/ vegetation, 95.16%.
- 2. Ceramics/ dust/ dirt/ rock/ inert/ ash, 3.11%.
- 3. Wood/ timber treated, 0.79%.
- 4. Other putrescible, 0.30%.
- 5. Food/ kitchen, 0.16%.

Table 12 provides the detailed composition by sorting category.



Table 12 Organics stream composition

Material categories		Weight (kg/hh/wk)	Percentage (% by weight)
	Newspaper		0.00
	Magazines / brochures	0.000	0.00
	Miscellaneous packaging	0.000	0.00
	Corrugated cardboard	0.000	0.00
	Cardboard/ packaging board	0.002	0.02
	Liquid paperboard containers	0.000	0.00
	Tetrapak containers	0.000	0.00
Dispos	sable paper product – coffee cups	0.000	0.00
Di	sposable paper product – general	0.001	0.01
	Print / writing / office paper	0.001	0.01
	Composite (mainly paper)	0.001	0.01
	AHW / nappies	0.001	0.01
	Contaminated soiled paper	0.002	0.02
	Sub-total: Paper	0.008	0.10
	Fruit and veg peelings	0.010	0.12
	Staple foods	0.001	0.01
	Meat, bones, fat, carcasses	0.000	0.00
	Tea and coffee grinds	0.000	0.00
Food / kitchen	Egg shells	0.000	0.00
	Dairy	0.000	0.00
	Seafood	0.000	0.00
	Meal leftovers	0.002	0.02
	Confectionery	0.000	0.00
	Sub-total: Food / kitchen	0.013	0.16
	Garden / vegetation – compliant	7.876	94.10
	Garden / vegetation – oversized	0.089	1.06
	Other putrescible	0.025	0.30
	Wood / timber – treated	0.066	0.79
	Wood / timber – untreated	0.013	0.16
	Textile / rags	0.003	0.04
	Leather	0.000	0.00
	Rubber	0.000	0.00
	Oils	0.000	0.00
	Sub-total: Organics	8.085	96.59
	Glass beverage containers	0.007	0.08
Glass non beverage o	containers / other packaging glass	0.000	0.00
	Miscellaneous / other glass	0.000	0.00
	Mixed glass / fines		0.00
	Sub-total: Glass		0.08
	PET beverage containers		0.01
PET pack	PET packaging (excl. beverage containers)		0.00
PET ot	PET other non-beverage/ non-packaging		0.00
	HDPE beverage container		0.00
HDPE pack	HDPE packaging (excl. beverage containers)		0.00
HDPE oth	HDPE other non-beverage / non-packaging		0.00
	PVC beverage containers		0.00
PVC pack	PVC packaging (excl. beverage containers)		0.00
PVC oth	PVC other non-beverage / non-packaging		0.01
	LDPE packaging	0.000	0.00



Table 12 (cont.) Organics stream composition

Material categories	Weight (kg/hh/wk)	Percentage (% by weight)
LDPE non-packaging	0.000	0.00
PP packaging	0.000	0.00
PP non-packaging	0.001	0.01
PS packaging	0.000	0.00
EPS packaging	0.000	0.00
PS and EPS non-packaging	0.000	0.00
Other plastics beverage containers	0.000	0.00
Other plastics packaging	0.000	0.00
Other plastics – other	0.000	0.00
Plastic bags	0.002	0.02
Plastic film – compostable	0.000	0.00
Plastic film – other	0.002	0.02
Composite (mostly plastic)	0.001	0.01
Sub-total: Plastics	0.008	0.10
Steel beverage containers	0.000	0.00
Steel packaging (excl. beverage containers)	0.000	0.00
Steel other non-packaging	0.000	0.00
Composite (mostly ferrous)	0.000	0.00
Sub-total: Ferrous	0.000	0.00
Aluminium beverage containers	0.000	0.00
Aluminium packaging (excl. beverage containers)	0.000	0.00
Aluminium non-packaging	0.000	0.00
Non-ferrous other non-packaging	0.000	0.00
Composite (mostly ferrous)	0.000	0.00
Sub-total: Non-ferrous	0.000	0.00
Paint	0.000	0.00
Fluorescent tubes	0.000	0.00
Dry cell batteries (non-rechargeable)	0.000	0.00
Dry cell batteries (rechargeable)	0.000	0.00
Vehicle batteries	0.000	0.00
Household chemicals	0.000	0.00
Asbestos / building materials	0.000	0.00
Clinical pathogenic infectious	0.000	0.00
Gas bottles	0.000	0.00
Hazardous other	0.000	0.00
Sub-total: Hazardous	0.000	0.00
Building materials and fittings (NEC)	0.000	0.00
Ceramics / dust / dirt / rock / inert / ash	0.260	3.11
Computer equipment	0.000	0.00
TVs	0.000	0.00
Mobile phones	0.000	0.00
Electrical items and peripherals	0.001	0.01
Toner cartridges	0.000	0.00
Sub-total: E-waste	0.001	0.01
Containerised food and liquid – cooking oil	0.000	0.00
Containerised food and liquid – non-cooking oil	0.001	0.01
Other (specify)	0.000	0.00
Sub-total: Miscellaneous	0.001	0.01
Grand total	8.370	100.00



4.4 Resources in the waste stream – detail

This section provides the amount (by weight and by percentage) of resources in the waste stream, based on suitability for particular uses as shown in Section 4.3.1. Figure 4 shows the summary categories, with the categories provided in more detail in Figure 5 and Table 13.

The data shows:

- Compliant recyclable materials were 12.6% of the waste stream. These materials could be recovered in the recycling bins. Therefore, education should focus on the main unrecovered recyclables such as:
 - Recyclable paper at 5.8% of the stream.
 - Recyclable plastics at 3.2% of the stream.
 - Recyclable glass at 1.8% of the stream.
- Compliant organics materials, garden organics, were 0.7% of the waste stream. This material could be recovered in the organics stream.
- Potentially compostable organics materials were 50.4% of the waste stream, with
 - Food organics at 37.5% of the stream.
 - Other compostable organics, including contaminated soiled paper, wood/ timber untreated, other putrescibles and compostable packaging, at 12.9% of the stream.



Figure 4 - Resources in the waste stream – summary



Figure 5 - Resources in the waste stream – detailed





Table 13 -	Resources	in the waste	stream – detailed
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Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight)
Recyclable paper	0.583	5.82
Recyclable glass	0.185	1.85
Recyclable plastics	0.316	3.15
Recyclable steel packaging	0.100	1.00
Recyclable aluminium packaging	0.076	0.76
Compliant recyclable	1.260	12.57
Other steel	0.182	1.82
Other non-ferrous	0.014	0.14
Potentially recyclable	0.196	1.96
Garden organics	0.066	0.7
Compliant organics	0.066	0.66
Food	3.754 #	37.5
Wood/ timber – untreated	0.060	0.6
Contaminated soiled paper	0.270	2.7
Other putrescibles	0.965	9.6
Compostable packaging	0.000	0.0
Potentially compostable	5.049	50.37
Non-recyclable paper	0.705	7.03
Non-recyclable glass	0.029	0.29
Non-recyclable plastics	0.750	7.48
Total other ^	1.968	19.63
MGB non-recyclable	3.452	34.44
Total	10.023	100.00

^ Total other was mainly containerised food, textile/ rags, ceramics/ dust/ dirt/ rock/ inert/ ash.

The weight of food can be converted to volume, based on the bulk density of 0.514t/m³ (NSW EPA, 2015), which would be 7.3L/hh/wk during the audit period. If extrapolated the average volume to the unweighted Council-wide result, it would be 48,552.3L or 48.55m³ per week Council-wide.

The 'total other' category includes other materials that could potentially be recovered but not within the Council MGB system. This includes items that can mainly be recovered in resident drop-off systems such as textiles/rags, oils, wood, ceramics/dust/dirt/rock/inert/ash, mobile phones, computer equipment and ash/earth based. However, the Guidelines sorting requirements do not include sub-segregation of which parts of these items are recoverable and which parts are not recoverable. For example, some textiles may be contaminated beyond recovery, while others can be re-used without re-processing (such as in charity shops) and some may be re-usable with re-processing.



4.5 Hazardous materials

This section provides analysis on hazardous materials disposed in the waste stream.

Figure 6 and Table 14 provide the hazardous materials in the waste stream, which includes sorting categories classified as hazardous and e-waste, as shown in Table 3.

Hazardous material was 0.263kg/hh/wk (2.62% of the waste stream), with the top materials being:

- 1. Asbestos, 30.0% of total hazardous material. This was due to one household having 17.884kg of asbestos in their waste bin.
- 2. Electrical items and peripherals, 30.0% of total hazardous material.
- 3. Household chemicals, 28.1% of total hazardous material.

Figure 6 - Hazardous material composition – waste stream





Hazardous categories	Weight (kg/hh/wk)	Percentage (% by weight) of total hazardous
Paint	0.002	0.8
Fluorescent tubes	0.000	0.0
Dry cell batteries (non-rechargeable)	0.002	0.8
Dry cell batteries (rechargeable)	0.000	0.0
Vehicle batteries	0.000	0.0
Household chemicals	0.074	28.1
Asbestos	0.079	30.0
Clinical pathogenic infectious	0.021	8.0
Gas bottles	0.000	0.0
Hazardous other	0.004	1.5
Computer equipment	0.001	0.4
TVs	0.000	0.0
Mobile phones	0.001	0.4
Electrical items and peripherals	0.079	30.0
Toner cartridges	0.000	0.0
Total	0.263	100.0

Table 14 - Hazardous material composition – waste stream

Table 15 provides the counts of each hazardous item requiring a count in the NSW EPA Guideline. This data is provided as a count of items disposed in the audit and per household per week (item/hh/wk).

The data shows:

- A total of 95 hazardous items were disposed in the audit samples.
- The most common hazardous wastes disposed by count were electrical items and peripherals (56 items) and dry cell batteries (34 items). These two categories accounted for approximately 95% of the hazardous items by count.
- An average of 0.15 dry cell batteries are disposed per household per week, which equates to approximately 1 dry cell battery for every 7 households. This is equivalent to 8 dry cell batteries being disposed by one household per year.



Table 15 Hazardous item counts – waste stream

Hazardous categories	Item count as collected (No. of items)	Item count per household per week (No. /hh/wk)
Fluorescent tubes	0	0.00
Dry cell batteries (non-rechargeable)	34	0.15
Dry cell batteries (rechargeable)	0	0.00
Vehicle batteries	0	0.00
Gas bottles	0	0.00
Computer equipment	2	0.01
TVs	0	0.00
Mobile phones	3	0.01
Electrical items and peripherals	56	0.25
Toner cartridges	0	0.00
Total	95	0.42



4.6 Contamination rate and types

4.6.1 Recycling stream

Figure 7 provides a summary level of the contamination in the recycling stream based on the materials accepted by Council for recycling. All of the data results in this report, are based on bagged materials in the recycling stream being opened and sorted to their material category. This follows the NSW Guideline process. However, the bagged material weights were recorded and provided in the raw data file in the Appendix section.

The data shows that the contamination rate was 15.5% of the recycling stream, compared to the benchmarks available:

- The NSW EPA audits across the MLA:
 - $\circ~$ 5.4% based on audits in 2007-2008 (NSW EPA, 2011).
 - $\circ~$ 7.3% based on audits in 2011 (NSW EPA, 2014).
- The 2011 NSW EPA audits across the MLA including 25 Councils audited by EC Sustainable was 7.2% (EC Sustainable, 2012), and approximately 16% for MUDs only.

Although these benchmarks are the most recent results reported, the current results for the MLA may be higher than the 2011 result reported in the NSW EPA (2014). There has been a general decrease in compliant recycling weights. This contributes to the effect of increasing contamination.

Bagged material

Bagged material was 0.7% by weight of the recycling stream bin contents. Approximately 34.0% by weight of bagged material was recyclable. The contamination rate would increase to 15.8% if all bagged material was deemed as contamination.







	Percentage (% by weight)
Compliant material	84.47
Potentially recyclable	1.22
Compliant organics	0.06
Food	1.79
Other compostable *	1.00
MGB non-recyclable	11.46
Contamination	15.53
Total stream	100.00
	Weight (kg/hh/wk)
Compliant material	2.780
Potentially recyclable	0.040
Compliant organics	0.002
Food	0.059
Other compostable *	0.033
MGB non-recyclable	0.377
Contamination	0.511
Total stream	3.291

* Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.



Figure 8 and Table 16 provide the types of contamination in the recycling stream based on the materials not accepted by Council for recycling. The data shows the top 4 contamination types were:

- 1. Total other, 47.4% of contamination. This mainly comprises of:
 - Containerised liquid, 17.61% of contamination.
 - Textile/ rags, 10.37% of contamination.
 - $\circ~$ Dry cell batteries (rechargeable), 6.46% of contamination.
- 2. Non-recyclable plastics, 18.8% of the contamination.
- 3. Loose food, 11.5% of contamination.
- 4. Other steel, 7.6% of contamination.





Figure 8 - Recycling stream contamination types



Table 16 Recycling stream contamination types

Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight of the stream)	Percentage (% by weight of contamination)
Other steel	0.039	1.19	7.63
Other non-ferrous	0.001	0.03	0.20
Potentially recyclable	0.040	1.22	7.83
Garden organics	0.002	0.06	0.39
Compliant organics	0.002	0.06	0.39
Food	0.059	1.79	11.55
Wood/ timber – untreated	0.008	0.24	1.57
Contaminated soiled paper	0.019	0.58	3.72
Other putrescibles	0.006	0.18	1.17
Compostable packaging	0.000	0.00	0.00
Potentially compostable	0.092	2.80	18.00
Non-recyclable paper	0.028	0.85	5.48
Non-recyclable glass	0.011	0.33	2.15
Non-recyclable plastics	0.096	2.92	18.79
Total other	0.242	7.35	47.36
MGB non-recyclable	0.377	11.46	73.78
Total contamination	0.511	15.53	100.00

Note: Rounding of figures could lead to slight differences after two decimal places.



Figure 9 provides a count of the extent of contamination in each sample and shows the distribution of contamination. The data shows:

- 21.2% of samples have no contamination
- 11.9% of samples have less than 1% contamination.
- 20.8% of samples have 25% or more contamination.

Figure 9 - Recycling contamination level distribution



Percentage of contamination	Number of samples	% of samples	Weight of contamination (kg)	% of total contamination
None	48	21.2	0.0	0.0
Up to 0.9%	27	11.9	0.9	0.3
1.0% to 4.9%	40	17.7	7.7	2.2
5.0% to 9.9%	24	10.6	21.3	6.2
10.0% to 14.9%	20	8.8	32.5	9.5
15.0% to 19.9%	14	6.2	48.5	14.1
20.0% to 24.9%	6	2.7	57.1	16.6
25% or more	47	20.8	175.1	51.0
Total	226	100	343	100



4.6.2 Organics stream

Figure 10 provides a summary level of the contamination in the organics stream based on the materials accepted by Council for recovery. All of the data results in this report, are based on bagged materials in the organics stream being opened and sorted to their material category. This follows the NSW EPA Guideline process. However, the bagged material weights were recorded and provided in the raw data file in the Appendix section.

The data shows that contamination rate was 4.8% of the organics stream. This result compares to the following benchmarks available for the average garden organics contamination rates:

- The NSW EPA audits across the SMA and ERA:
 - o 3.3% based on audits in 2007-2008 (NSW EPA, 2011).
 - \circ 2.1% based on audits in 2011 (NSW EPA, 2014).

Bagged material

Bags were opened and the bagged contents were sorted into each sorting category.

Non-compostable bags weighed approximately 0.5% of the organics stream, with approximately 97.7% by weight being organics contents. Compostable bags weighed approximately 0.05% of the organics stream, with approximately 100.0% by weight being organics contents.

The contamination rate would increase to 5.4% if all bagged material was deemed as contamination.







	Percentage (% by weight)
Compliant organics	95.16
Compliant recycling	0.14
Potentially recyclable	0.00
Food	0.16
Other compostable *	0.48
MGB non-recyclable	4.06
Contamination	4.84
Total stream	100.00
	Weight (kg/hh/wk)
Compliant organics	7.965
Compliant recycling	0.012
Potentially recyclable	0.000
Food	0.013
Other compostable *	0.040
MGB non-recyclable	0.340
Contamination	0.405
Total stream	8.370

* Including wood/ timber - untreated, contaminated soiled paper, other putrescible and compostable packaging.

Figure 11 and Table 17 provide the types of contamination in the organics stream based on the materials not accepted by Council for recovery. The data shows the top 4 contamination types were:



- 1. Total other, 81.7% of contamination. This mainly comprises of:
 - Ceramics/ dust/ dirt/ rock/ inert/ ash, 64.2% of contamination.
 - $\circ~$ Wood/ timber treated, 16.3% of contamination.
 - Textile/ rags, 0.74% of contamination.
- 2. Other putrescibles, 6.2% of the contamination.
- 3. Loose food, 3.2% of contamination.
- 4. Wood/ timber untreated, 3.2% of contamination.









Table 17 Organics stream contamination types

Recoverability category	Weight (kg/hh/wk)	Percentage (% by weight of the stream)	Percentage (% by weight of contamination)
Recyclable paper	0.004	0.05	0.99
Recyclable glass	0.007	0.08	1.73
Recyclable plastics	0.001	0.01	0.25
Recyclable steel packaging	0.000	0.00	0.00
Recyclable aluminium packaging	0.000	0.00	0.00
Compliant recyclable	0.012	0.14	2.96
Other steel	0.000	0.00	0.00
Other non-ferrous	0.000	0.00	0.00
Potentially recyclable	0.000	0.00	0.00
Food	0.013	0.16	3.21
Wood/ timber – untreated	0.013	0.16	3.21
Contaminated soiled paper	0.002	0.02	0.49
Other putrescibles	0.025	0.30	6.17
Compostable packaging	0.000	0.00	0.00
Potentially compostable	0.053	0.63	13.09
Non-recyclable paper	0.002	0.02	0.49
Non-recyclable glass	0.000	0.00	0.00
Non-recyclable plastics	0.007	0.08	1.73
Total other	0.331	3.95	81.73
MGB non-recyclable	0.340	4.06	83.95
Total contamination	0.405	4.84	100.00



Figure 12 provides a count of the extent of contamination in each sample and shows the distribution of contamination. The data shows:

- 72.6% of samples have no contamination.
- 5.8% of samples have less than 1% contamination.
- 5.3% of samples have 25% or more contamination.





Percentage of contamination	Number of samples	% of samples	Weight of contamination (kg)	% of total contamination
None	164	72.6	0.0	0.0
Up to 0.9%	13	5.8	1.0	0.3
1.0% to 4.9%	20	8.8	7.8	2.8
5.0% to 9.9%	6	2.7	15.5	5.5
10.0% to 14.9%	7	3.1	28.6	10.1
15.0% to 19.9%	3	1.3	46.1	16.3
20.0% to 24.9%	1	0.4	48.6	17.1
25% or more	12	5.3	135.6	47.9
Total	226	100	283	100



4.7 Resource recovery rates

Resource recovery rate is the percentage of a material type that is recovered compared to the overall amount of that material in all streams, as defined in the Glossary section.

4.7.1 Recycling stream

Figure 13 and Table 18 provide the resource recovery rates of recyclable materials at the kerbside, based on the bin systems provided at the kerbside. This is the household performance based on the bin system available, and does not account any additional recovery that may occur after collection, through processing arrangements.

Table 19 shows the data used for the calculation of resource recovery rate:

- Total generation in all streams.
- Correctly recovered in recycling stream.

The data shows that the average household recovered a total of 68.6% of compliant recyclables (a total of 4.052kg/hh/wk of recyclable material generated in all streams, with 2.780kg/hh/wk correctly recovered in the recycling stream) at the kerbside.

The materials with the highest resource recovery rates were:

- 1. Glass packaging, 79.4%.
- 2. Recyclable cardboard, 75.1%.
- 3. Recyclable paper, 71.8%.

Glass, cardboard and paper have high bulk densities and therefore increase the resource recovery rate. However, the generation rates of glass and paper are typically in decline. This may be due to a greater use of plastics and liquid paperboard for containers and more electronic materials instead of paper.

Further initiatives should be considered to increase the recovery of recyclables, particularly for materials with a low resource recovery rate such as liquid paperboard and plastics (excl. HDPE).









Table 18 Recycling resource recovery rates

Material category	Resource recovery rate (% by weight)
Recyclable paper	71.83
Recyclable cardboard	75.06
Liquid paperboard containers	56.76
Glass packaging	79.40
PET (plastic 1) packaging	45.97
HDPE (plastic 2) packaging	71.71
PVC (plastic 3) packaging	33.33
LDPE (plastic 4) packaging	14.29
Polypropylene (plastic 5) packaging	28.24
Polystyrene (plastic 6) packaging	12.50
Other plastics (plastic 7) packaging	-
Aluminium packaging	36.67
Steel packaging	50.25
Total	68.61

Material category	Correctly recovered in recycling bin (kg/hh/wk)	Total generation in all bin streams (kg/hh/wk)
Recyclable paper	0.635	0.884
Recyclable cardboard	0.921	1.227
Liquid paperboard containers	0.042	0.074
Glass packaging	0.740	0.932
PET (plastic 1) packaging	0.097	0.211
HDPE (plastic 2) packaging	0.147	0.205
PVC (plastic 3) packaging	0.002	0.006
LDPE (plastic 4) packaging	0.002	0.014
Polypropylene (plastic 5) packaging	0.048	0.170
Polystyrene (plastic 6) packaging	0.001	0.008
Other plastics (plastic 7) packaging	0.000	0.000
Aluminium packaging	0.044	0.120
Steel packaging	0.101	0.201
Total	2.780	4.052



4.7.2 Organics stream

Figure 14 and Table 20 provide the resource recovery rates of organic materials at the kerbside. This is the household performance based on the bin system available, and does not account for any additional recovery that may occur after collection, through processing arrangements.

Table 21 shows the data used for the calculation of resource recovery rate:

- Total generation in all streams.
- Correctly recovered in the organics stream.

The data show that the average household achieved a high recovery rate of garden organics at 99.2% (a total of 8.033kg/hh/wk of compliant organics material generated in all streams, with 7.965kg/hh/wk correctly recovered in the organics stream) at the kerbside.

Figure 14 - Organics resource recovery rates





Table 20 Organics stream resource recovery rates

Material category	Resource recovery rate (% by weight)
Garden/ vegetation	99.2
Total	99.2

Table 21 - Organics stream compliant material – recovered vs totalgeneration

Material category	Correctly recovered in organics stream (kg/hh/wk)	Total generation in all streams (kg/hh/wk)	
	SUD	SUD	
Garden/ vegetation	7.965	8.033	
Total	7.965	8.033	



4.8 Diversion rates

Diversion rate is the percentage of the total waste stream diverted from landfill, as defined in the Glossary section. Table 22 and Figure 15 provide the current kerbside bin diversion rate and potential for improvement based on the implementation of various initiatives. The results have taken into consideration of different collection services.

Current kerbside diversion rate

The average household diverted 49.6% of material at the kerbside based on the current kerbside bin systems. This is the household performance based on the bin system available, and does not account any additional diversion that may occur after collection through processing arrangements.

Further recovery: with current bin system, the diversion rate could increase by:

- 5.8%, if recyclables from the waste stream were recovered.
- 0.3%, if garden organics from the waste stream were recovered.

This will achieve a potential diversion rate of 55.7%.

Maximum recovery: if FOGO bins were provided to each household, the diversion rate could increase by:

- 17.3%, if food from the waste stream were recovered.
- 0.3%, if wood/ timber untreated from the waste stream were recovered.
- 1.2%, if contaminated soiled paper from the waste stream were recovered.
- 4.5%, if other putrescibles from the waste stream were recovered.

This will achieve a maximum potential diversion rate of 79.0%.



Figure 15 - Diversion rates





Table 22 - Diversion rates

Diversion rates	Contributor - % of al	l streams
Kerbside diversion rate by recovering material in the recycling and organics streams	Recyclables	12.8
	Garden organics	36.7
	Kerbside diversion rate	49.6
Potential diversion rate With the current bin systems, by recovering this material from the waste stream	Recyclables	5.8
	Garden organics	0.3
	Total additional	6.1
	Potential diversion rate	55.7
Maximum potential diversion rate If all households were provided with a FOGO system.	Recyclables	5.8
	Garden organics	0.3
	Food	17.3
	Wood/ timber – untreated	0.3
	Contaminated soiled paper	1.2
	Other putrescibles	4.5
	Compostable packaging	0.0
	Total additional	29.4
	Maximum potential diversion rate	79.0

Table 23 Resources summary: weights correctly recovered and not recovered

Contributor	Weight (kg/hh/wk)		
Resources correctly recovered in the recycling bins			
Recyclables	2.780		
Resources correctly recovered in the organics bins			
Garden organics	7.965		
Resources not recovered in the waste bins ^			
Recyclables	1.260		
Garden organics	0.066		
Food	3.754		
Wood/timber – untreated	0.060		
Contaminated soiled paper	0.270		
Other putrescible	0.965		
Compostable packaging	0.000		

^ In addition, there can be further "not recovered" material in the incorrect recovery bin, e.g. organics in the recycling and recycling in the organics.



4

5 Recommendations

Based on the results of this audit, and experience in waste auditing and waste minimisation initiatives, the following recommendations are made. Council could consider to:

Waste reduction and diversion.

- 1. Commend residents and stakeholders for achieving high diversion and resource recovery rates, as well as low organics stream contamination rate.
- 2. Consider further initiatives to increase diversion. This could include:
 - Recovering more recyclables, particularly items which were heavier ⁵ or had lower resource recovery rates ⁶.
 - Investigating whether providing FOGO bins could be an option to achieve higher resource recovery.
 - Food organics consists of 37.5% of the waste stream (3.754kg/hh/wk or 7.30L/hh/wk).
 - If a FOGO system is introduced Council could consider changing the collection frequency of the organics bin to weekly and the waste bin to fortnightly to encourage residents to recover food waste and garden organics.
 - If extrapolated the average volume of food to the unweighted Council-wide result, which would be 48,552.3L or 48.55m³ per week Council-wide.
 - Consider conducting pre- and post- kerbside bin audits to monitor and compare the performance of a new FOGO service.
- 3. Consider further initiatives to avoid resource loss into the waste stream, particularly recyclables, food, garden organics and other compostable material.
- 4. Consider further promoting Community Recycling Centre (CRC) and recycling programs for enhanced recovery of textiles, C&D, e-waste and plastic bags/films.
- 5. Consider further promoting the bulky waste collection service.
- 6. Consider to improve the asbestos disposal management and education. One household was found that 17.884kg of asbestos was disposed in the waste bin.

⁵ Items such as glass bottles and paper/cardboard items, even though they had the higher resource recovery rates.

 $^{^{\}rm 6}$ Items such as liquid paperboard, plastics containers (except PET and HDPE) and metal.



Contamination in recycling and organics bins

- 7. Education should focus on the main contaminants:
 - Recycling bin:
 - Containerised liquid.
 - Textile/ rags.
 - Dry cell batteries.
 - Organics bin:
 - Ceramics/ dust/ dirt/ rock/ inert/ ash.
 - Wood/ timber treated.
 - Other putrescibles.
- 8. Conduct a community consultation survey to determine the reasons for contamination, such as resident understanding of recyclables types and if they had sufficient recycling bin capacities.
- 9. Conduct bin inspections and bin stickering programs to identify contamination hotspots and provide feedback to the community.

Waste strategy and processing

10. Consider the potential initiatives to improve at source separation and post-collection recovery. Without making a conclusion in this study, this data assists Council to consider the optimum system which should be considered in a model, alongside the impacts on collection, processing and disposal.

Conduct further auditing

- 11. Council should complete the kerbside audits in other seasons to profile the waste and inform implementation of waste strategy, waste processing and waste minimisation.
- 12. Conduct bin capacity surveys to identify trends in bin needs over a few weekly cycles.



6 Audit photos

Figures 16 and 19 provide some photos for this audit.



Figure 16 - Photos of sorting site

1. Sorting site supplied by Council.

1.



Figure 17 - Photos of bin contents – waste stream



1. Electrical items. 2. Fruit. 3. A car seat. 4. Building material. 5. Containerised liquid in recyclable plastic bottles. 6. Shoes. 7. Coffee cups. 8. Recyclable cardboard– toilet rolls.



Figure 18 - Photos of bin contents – recycling stream



1. Plastic bagged material. 2. Nappies. 3. Plastic bags. 4. Shredded paper. 5. Textile. 6. EPS. 7. A fluorescent tube. 8. A plastic basket.



Figure 19 - Photos of bin contents – organics stream



1. Compostable bagged organics. 2. Banana peelings. 3. Soil and rocks. 4. Garden organics. 5. Oversized garden organics. 6. Treated wood/ timber. 7. A steel bin. 8. A PVC pipe.



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ABS	Australian Bureau of Statistics
AHW	Absorbent Hygiene Waste
AWT	Alternative Waste Treatment (or Technology)
E-waste	Electronic waste
HDPE	High Density Polyethylene
LDPE or LLDPE	Low Density Polyethylene
LGA	Local Government Authority
LPB	Liquid Paperboard
MGB	Mobile Garbage Bin
MLA	Metropolitan Levy Area
MRF	Materials Recovery Facility
NSW	New South Wales
PET	Polyethylene Terephthalate
PP	Polypropylene
PPE	Personal Protective Equipment
PS	Polystyrene
PVC	Polyvinyl Chloride
SUD	Single Unit (Occupancy) Dwelling
WHS	Work Health and Safety



This section defines the main terms in the report and provides the formulae used for calculations. All formulae are based on the properties in the study and are based on the kerbside results, excluding any other improvements that may occur after collection, such as at a processing facility.

Contamination	The percentage of the recycling bin (or organics bins) contents not accepted.
rate:	Weight of material not accepted in the recycling bins (or organics bins)
	Total weight of recycling bins (or organics bins) contents
Diversion	The percentage of the total waste stream diverted from landfill.
rate:	Weight of materials accepted in the recycling bins and organics bins
	Total weight of contents of all bins
Generation rate:	The amount of material generated in a timeframe such as a week, provided by household as weight or volume. The generation rates in this report are based on the contents of the bins presented, not only the compliant material in the bins.
Non-recyclable material:	Material that is not accepted for recycling by Council, which is contamination when placed into the recycling bins.
Organics stream:	The contents of the green-lidded organics, or Food and Garden Organics (FOGO) bins. Collectively known as the organics stream. Council does not have this bin type.
Presentation rate:	The percentage of bins placed out on the kerbside for collection compared to the total number of bins available at those properties
	Bins presented
	All bins available
Recyclable material:	Material that is accepted for recycling by Council.
Recycling stream:	The contents of the yellow-lidded recycling bins. Collectively known as the recycling stream.
Residual waste bin:	The contents of the red-lidded waste bins, also known as also known as garbage or Municipal Solid Waste (MSW). Collectively known as the waste stream.
Resource recovery rate:	The percentage of a material type that is recovered compared to the overall amount of that material in all bins in the study.
	Weight of a recyclable material in the correct bin
	Total weight of that material in all bins
Resources in the waste stream:	Recoverable material in the residual waste bins-



Appendix 1 – Raw data

This Appendix provides the raw data, in a separate Excel file, providing the raw data for this current audit.