



WASTE AUDIT

RESULTS FOR

WOLLONGONG CITY COUNCIL

NOVEMBER 2008

APRINCE CONSULTING PTY LTD TRADING AS APC

ACN 077 504 226

PO Box 54 Terrey Hills NSW 2084 ~ Phone: 612 9907 0994 Fax: 612 9907 0330

PO Box 6782 East Perth WA 6892 ~ Phone 618 9472 8811 Fax: 618 9472 1212

Web: www.aprince.com.au E-mail: admin@aprince.com.au

This manual was researched and prepared by



APrince Consulting Pty Ltd trading as APC

ABN: 96 077 504 226

Email: admin@aprice.com.au

Web: www.aprice.com.au

Sydney

PO Box 54

Terrey Hills NSW 2084

Phone: (02) 9907 0994

Fax: (02) 9907 0330

Perth

PO Box 6782

East Perth WA 6892

Phone: (08) 9472 8811

Fax: (08) 9472 1212

For:

Lindsay Dunstan

A/Waste Services Manager

City Works Division

Wollongong City Council

P: 02 42 277184

M: 0418245415

E: LDunstan@wollongong.nsw.gov.au

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DEFINITIONS

Co-mingled Collection*: Pick up and transportation of mixed dry recyclable materials

Contamination: Material not accepted by a council in its recycling or green-waste stream

Diversion Rate: The percentage of the total waste stream diverted from disposal

$$\text{Diversion rate (proportion of waste diverted from landfill)} = \frac{\text{Weight of recyclables in the recycling bins}}{\text{(weigh of the contents of the garbage bins + weight of the contents of the recycling bins)}} \times 100$$

Recyclable*: Able to be recovered, processed and used as a raw material for the manufacture of useful new product through a commercial process.

Recycling Stream: Material source-separated for the purposes of recycling.

Recovery Rate*: The amount of material recovered from a product group as a percentage of overall consumption

$$\text{Recovery rate} = \frac{\text{weight of recyclables in recycling bin}}{\text{(weight of recyclables in recycling bin + weight of recyclables in garbage bin)}}$$

Resource Recovery Plan: A plan developed in conjunction with the client to document actions, timeline, roles and responsibilities of staff to guide the implementation of best-practice principles in connection with waste management.

Segregation: Keeping the components of assorted waste streams separated

Source Separation*: Physical sorting of the waste stream into its components at the point of generation

Total Waste Stream: The combined waste, recycling and garden organics streams.

Waste Stream Analysis*: Determination of the quantities and qualities of individual components present in a waste stream

Waste Stream Characterisation*: Classification and analysis of the waste stream

Waste Stream Classification*: System to identify and categorise materials of weight or volume

Waste Stream Composition*: Component material types by proportion of weight or volume.

* Source: AS/NZS 3831:1998.

EXECUTIVE SUMMARY

The City of Wollongong extends from Helensburgh in the north to Dapto and Windang in the south, and has a population of approximately 190,000. The urban area is confined to the narrow coastal plain. The residual waste is currently landfilled at the Whytes Gully Waste Disposal Depot at Kembla Grange, while the recycling and green waste materials are processed at Kembla Grange.

Council is required to submit data to the NSW Department of Environment and Climate Change (DECC) to receive Waste and Environment Levy & Local Council Waste Service Performance Improvement Payments for 2007-2008. The data must be collected according to the DECC's *Household Kerbside Waste Audit Guidelines - Draft 2007* (DECC Guidelines). The audit was therefore, be conducted according to the DECC Guidelines.

This report shows the method used and results for Wollongong City Council.

The DECC Guidelines recommend that where the garbage, recycling and green waste streams are audited, a minimum of 260 samples of the garbage stream and 350 samples of the recyclables and green-waste streams be sampled to provide robust data. The project brief specified 260 samples for the garbage stream and 175 each for the recycling and green-waste streams.

The total number of samples specified for each stream was divided into single dwellings (SDs) according to the proportion found in the whole council as reported in the 2006 Census.

Samples were selected randomly and collected according to the DECC Guidelines. On the night before the normal collection service, waste from the specified number of SD households and MUD properties was collected.

The name of the street and house number from which samples were collected were recorded and a code was assigned for each address and sample. The volume of each bin at each address was also recorded.

Wollongong City Council provided two representatives to accompany the collection crews and deal with any residents who had questions or concerns.

The contents of collected bags from each stream and from each individual household were separated into different categories.

The audit found the following key results:

Garbage generation – in 2008 the average Wollongong City household generated 14.2 kg of garbage per week, approximately the same amount generated in 2002 – 13.9kg.

Composition of garbage stream – The largest proportion of the stream is food and kitchen waste, at 38.9%. Contaminated soiled paper (8.3%) and nappies (6.1%) were also found in significant proportions. The garbage stream comprises 17.7 % recyclable material (including green waste), again consistent with the 2002 result of 18.8%. Food represented 38.9% of the garbage stream, the same as that recorded in the 2002 audit (38.5%).

Recycling generation – in 2008 the amount of recycling (paper and containers) generated from the average Wollongong City household was 5.6 kg per week. This is also similar to the 2002 result of 5.3kg.

Composition of the recycling stream – the recycling stream comprised 50.2% paper and 44.6% recyclable containers – a very similar result to the 2002 audit.

Contamination – contamination in the recycling stream was 5.2%, down from 6.6% in 2002.

Green waste recycling – in 2008 the amount of green waste presented for recycling was 10kg per household per week. This result is double that recorded in 2002. The green waste recycling stream comprised 98.2% vegetation, with just 1.8% contamination.

Recovery rates – overall recovery rate in 2008 was 90.8%.

Vegetation in the garbage stream – the proportion of garden organics in the garbage stream in 2008 is 3.5%, up from 2% recorded in 2002.

Diversion – the diversion rate of 62.5% is an improvement from the 50.4% recorded in 2002 and close to the maximum achievable under the current system of 68%.

Garbage-bin Capacity – the average (median) volume of garbage bins used in single dwellings in 2008 was 85%. For multi unit dwellings this figure was 60%.

Recycling-bin Capacity – the average (median) volume of recycling bins used in single dwellings in 2008 was 85% and for multi unit dwellings this figure was 70%.

Green waste bin Capacity – the average (median) volume of green waste bins used in Wollongong in 2008 was 80%.

The results for Wollongong City show that overall waste generation is up by 5kg per household per week however all of this increase has occurred in the garden waste

stream which could be explained by seasonal fluctuation and the different times of the year in which the audits were conducted.

There recycling contamination rate improved slightly, dropping from 6.6% in 2002 to 5.2% in 2008. Wollongong City is close to achieving its maximum diversion rate with the current collection system. The recovery of food in some form will be the next way in which to make significant improvements to the recovery of waste in Wollongong City.

1. INTRODUCTION

1.1. Purpose

The City of Wollongong extends from Helensburgh in the north to Dapto and Windang in the south, and has a population of approximately 190,000. The urban area is confined to the narrow coastal plain. The residual waste is currently landfilled at the Whytes Gully Waste Disposal Depot at Kembla Grange, while the recycling and green waste materials are processed at Kembla Grange.

The residual waste is collected in a weekly service by Thiess Services, and 95% of residents pay for an 80lt or 120lt MGB, while 5% of residents use a 240lt MGB. The total residual waste collected is 38,000 tonnes per year, from around 76,000 households.

In the MUD's some smaller units have an individual bin for each dwelling, some share a 240 lt bin between 2 or 3 dwellings and some use bulk containers.

The recycling service is provided fortnightly by Thiess Services, using a co-mingled 240lt MGB. Paper and cardboard, glass, mixed plastic containers, liquid paperboard, steel and aluminium containers are placed together into the bin. There are approximately 76,000 households, and recycling collections amount to approximately 16,000 tonnes of material annually.

In the MUDs most unit complexes share recycling bins, but in the smaller complexes, the units each have a recycling bin.

Green waste is collected on the alternate fortnight to recycling and uses a 240lt MGB. A total of 20,000 tonnes of green waste is collected in this service each year, and includes grass clippings, leaves, weeds, prunings, and wood wastes (untreated and unpainted) up to 500mm long and 75mm in diameter. The green waste service is available to all dwellings, but many MUD's choose not to use this service.

Council is required to submit data to the NSW Department of Environment and Climate Change (DECC) to receive Waste and Environment Levy & Local Council Waste Service Performance Improvement Payments for 2007-2008. The data must be collected according to the DECC's *Household Kerbside Waste Audit Guidelines - Draft 2007* (DECC Guidelines). The audit was therefore, be conducted according to the DECC Guidelines.

1.2. Background

This report shows the method used and results for Wollongong City Council.

The table below shows the details of the garbage, recycling and green waste collection systems used in Wollongong City Council.

Table 1 - Council System

Dwelling Type	Garbage System	Recycling System	Green Waste System
Single dwellings	95% - 80 or 120 litre bin weekly 5% - 240 litre bin weekly	240 litre fully comingled bin fortnightly	240 litre bin fortnightly
Multi-unit Dwellings	Individual bin or 2-3 units: 1 x 240 litre bin or bulk containers	Individual bin or 2-3 units share 240 litre bin	Optional - not included

The table below lists the materials specified in the DECC Guidelines to be separated as part of any audit and which materials are accepted as part of Wollongong City Council's system.

Table 2 - Recycling Materials Accepted

AWD Code	Material Name	Accepted
A01	Newspapers	Yes
A02	Magazines / Brochures	Yes
A03	Miscellaneous Packaging	Yes
A04	Corrugated Cardboard	Yes
A05	Package Board	Yes
A06	Liquid Paperboard Containers - non-foil-lined	Yes
A06	Liquid Paperboard Containers - foil-lined	Yes
A07	Disposable Paper Products	Yes
A08	Print / Writing / Office Paper	Yes
A09	Composite (mainly paper)	Not accepted
A092	Contaminated Soiled Paper	Not accepted
D01	Packaging / Glass Containers	Yes
D0121	Packaging / Cullet White	Yes
D0122	Packaging / Cullet Green	Yes
D0123	Packaging / Cullet Brown	Yes
D050	Mixed Glass / Fines	Not accepted
D02	Miscellaneous / Other Glass	Not accepted
E01	PET	Yes
E02	HDPE	Yes
E03	PVC	Yes
E04	LDPE	Yes
E05	Polypropylene	Yes
E06	Polystyrene	Yes
E07	Other Plastic	Not accepted
E071	Foams	Not accepted
E072	Plastic Bags	Not accepted
E073	Film	Not accepted
F01	Steel Food and Pet Food Cans	Yes
F011	Steel Aerosols	Yes
F012	Steel Paint Cans	Yes
G01	Aluminium (Cans & Foil)	Yes

Wollongong City Council has been audited previously. The table below shows the year of previous audit and the number of households sampled in each case.

Table 3 - Previous Audits

Year	Number of households
2002	150

1.3. **Project Objectives**

This project has the following objectives. They are to:

1. Measure changes to household waste management since the previous waste audit
2. Provide data to assist in developing knowledge of household generation and composition for the domestic garbage, recycling and garden organics streams
3. Quantify and characterise the level and extent of contamination in the recycling and garden organics stream
4. Identify areas for further waste reduction.

1.4. **Privacy Considerations**

Prior to the collections Wollongong placed newspaper advertisements, advising residents that a random audit would be taking place, for the domestic waste services. Residents were assured that privacy protection measures were an important part of the audit, and residents were invited to contact Council anonymously, if they wanted their residential area excluded for privacy reasons

2. **AUDIT METHOD**

2.1. **Sample Size**

The DECC Guidelines recommend that where the garbage, recycling and green waste streams are audited, a minimum of 260 samples of the garbage stream and 350 samples of the recyclables and green waste streams be sampled to provide robust data. The project brief specified 260 samples for the garbage stream and 130 each for the recycling and green waste stream.

2.2. **Sample Selection**

The Guidelines specify that:

at the street level within each collection zone, the recommended number of bins should be selected randomly. Any appropriate random sampling regime will be acceptable for this purpose. For example, random sample selection can be made using the random number generation function (RAND) within Microsoft Excel, to select a start street address from the rates database of a particular LGA.¹

And ...

a fixed and pre-determined number of streets can be randomly selected as above and the number of households to be sampled in each street can be calculated so that there is an even spread over the total number of streets selected.²

¹ Page 13.

² Page 13.

APC received from Wollongong City Council an extract of its residential rates database. Each property was given a unique number and a series of random numbers was generated using Microsoft Excel. Those properties whose unique number matched the randomly generated numbers were selected.

This process was followed until the number of SD starting point properties required to be collected in each daily collection zone and from each stream was reached. The required number included preferred properties and reserve properties. The reserve properties were selected in case collection in the preferred properties was not possible for some reason.

For single dwellings, each selected property was found on a map and the nearest street corner recorded as the starting point for sample collection in that street. In this way 12 starting points (six preferred and six reserve) were selected in each daily collection zone. Half of these starting points were selected in the recycling zone and half in the green-waste zone.

The number of garbage samples to be collected in each street was then calculated by dividing the total number of SD properties required by the number of zones. These were then spread as evenly as possible across the six preferred street starting points.

The number of recycling samples to be collected in each street was then calculated by dividing the total number of SD properties required by the number of zones (five). These were then spread as evenly as possible across the three preferred street starting points in the recycling zone.

The number of green-waste samples to be collected in each street was then calculated by dividing the total number of SD properties required by the number of zones (five). These were then spread as evenly as possible across the three preferred street starting points in the green-waste zone.

2.3. Material Collection Strategy

DECC Guidelines Requirements

APC followed the method specified in the DECC Guidelines that ‘data should be collected on a household MGB by household MGB basis (“bin-by-bin”)³ and that ‘MGBs from households should then be randomly selected, so that every n^{th} MGB is selected from the start address.’ APC selected every first bin, i.e., each bin as presented from the selected starting point until the required number of samples was collected.

Data-recording

The name of the street and house number from which samples were collected were recorded and a code was assigned for each address and sample. The volume of each bin at each address was also recorded.

Collection Method

On the night before the normal collection service⁴, waste from the specified number of SD households nearest the selected starting point was collected in bags. Each bag was labelled with the code for that property. Separate bags were used for each property and each stream.

Samples collected from each MUD block were collected together, as specified in the DECC Guidelines:

Where communal MGBs exist in the selected MUDs then the whole contents of all of the MGBs should be collected and treated as coming from n number of households. All of these households can be counted towards the total number of households required for a study.⁵

APC used two collection vehicles and two collection crews. In general, one crew collected garbage and recyclables in the recycling zone and the other collected garbage and green waste in the green-waste zone.

³ Page 11

⁴ Although the DECC Guidelines say that ‘Samples should be collected from selected locations just prior to the actual regular collection service’ (Attachment 1 Page 1.2), which we take to mean the morning of the regular collection. APC undertook collections at night for the following reasons:

- There was no chance that the normal waste collection vehicle could empty the bins before the sample collection crew arrived there. This would be a very real possibility if undertaking morning collections, especially if the sample collection could not start before the normal service, despite liaison with the collection contractors.
- The noise of sample collection at night was masked to a certain extent by other noises, such as traffic, television, meal preparation, etc., so residents were not disturbed. There are no masking noises at 6.00 a.m. and the sound of the collection is very clear in quiet suburban streets.

The advantage of the morning collection is that some people do not place their bins out at night, so, theoretically, all the bins will be available for sampling in the morning. In reality, however, most residents place their bins out the night before, very few place them out before 6.00 the next morning and as some people only place their bins out as the truck enters the street the next day, not all bins are likely to be available in the morning anyway. In any case the n^{th} bin sampling method described in the DECC Guidelines means that whatever bins are in the street can be collected, regardless of which households might not be presenting them.

⁵ Page 15.

Each collection crew consisted of three people, two of whom emptied the bins and one whose task was to record sample data, estimate bin content volume and label sample bags. In this way accurate data collection was guaranteed and safe working conditions were provided for staff.

Coded bags were then placed in one of the collection vehicles for transport to the sorting location.

Council Representatives

APC's sample collection procedures are designed to anticipate interest and curiosity by residents and ensure this necessary phase of the project produces only positive public relations with the community. Wollongong City Council provided two representatives, one for each team, who were with the collection crews for the duration of the sample collection each night it was conducted. The council representatives dealt with any questions or complaints from residents.

Time Limit for Green-waste Collections

Due to an expected lower presentation rate for green waste compared to garbage and recycling, especially in colder months, APC anticipated that finding enough green waste to fill the required sample might have been difficult, especially as any green waste samples not available from MUDs would have to be made up from SDs. As a result, APC specified that searching for additional green waste bins in order to fill the required sample quota would be carried out until 10.00 p.m., after which time the noise of collection at that hour, while not extreme, might be enough in quiet suburban streets to disturb residents.

Non-presentation of Bins

Where households did not present a bin the following procedure was followed as specified in the Guidelines:

- (i) Record non-presented MGBs as "non-presenters" on the recording sheets*
- (ii) Where a MGB is not presented at a household which has been included in the sample, data collectors should move to the neighbouring MGB, bagging and analysing the contents as per these Guidelines.⁶*

2.4. Sorting

Sorting Method

After the collection each night, samples were unloaded at the sorting location and separated into those of different streams and from different dwelling types.

The next day collected bags from each stream and from each individual household were weighed and the weight recorded. One household at a time, and one stream at a time, collected samples were tipped onto a sorting table where they were separated into different categories. The garbage, recycling and green waste associated with each household was sorted separately and the weights of the components recorded separately. The table showing the list of components specified by the DECC with definitions and into which all samples were separated can be found in Appendix A.

⁶ Page 14.

2.5. Occupational Health and Safety

OH&S Policy

Occupational health and safety is an integral part of effective business management and APC recognises that all employees and sub-contractors must have the knowledge, skills and resources necessary to meet their obligations and fulfil the commitment to the health and safety of the work place.

Management and supervisors are responsible for work-place safety for staff who directly report to them in any given work environment.

Senior managers of staff conducting waste audits ensure compliance with occupational health and safety requirements by carrying out regular inspections. Any hazards or deficiencies identified by management or supervisors are rectified prior to work continuing.

In particular, the following are adhered to:

- A risk management assessment is carried out, identifying, assessing, monitoring and controlling hazards and risks through ongoing inspection and review
- All operations and services conducted by APC comply with relevant statutory requirements
- All activities are carried out in accordance with occupational health and safety requirements and our *Audit Collection Procedures* and *Code of Conduct*
- All staff and sub-contractors are aware of their responsibilities with regard to their own safety as well as that of their employees
- There is open and constructive communication with employees, clients, sub-contractors regarding operations and delivery of services
- At least one member of on-site staff has a current St John's Ambulance Senior First Aid Certificate.

Occupational Health & Safety System

The following documents form part of the pre-project training all staff undergo before an audit. All staff used for this audit read and signed the documents where necessary.

Audit Collection Procedures and Code of Conduct – this document outlines what is required during the collection phase of a project and covers data collection, noise, occupational health and safety, road rules, dealing with residents, tidiness, drugs, alcohol and damage to vehicles.

Waste Audit Sorting Procedures – this document outlines what is required during the sorting phase of an audit and covers staff duties, safety, staff comfort and confidentiality. All staff will be required to sign this document which, among other issues, covers lifting and carrying heavy loads, handling and disposal of syringes and chemicals, use of protective equipment and reporting of injuries. It also forbids staff from removing confidential material from the audit site or revealing any information gathered during the sorting.

Safety Checklist – this is a supplement to the Waste Audit Sorting Procedures. It covers issues relating to the specific location in which staff may be working and

reinforces issues covered in the Waste Audit Sorting Procedures, specifically: local environmental hazards (i.e., traffic), risk of slips, trips or falls, location of exits, procedure in case of evacuation, location of emergency shower and eye wash and familiarisation with safety signs

Safe Work Method Statement – this document is completed for every project where OH&S hazards exist. It requires the listing of specific components of a project, establishing what hazards exist for each and details how those hazards are avoided or minimised. Draft SWMSs have been completed for both the collection and sorting phases of this project.

Equipment

Equipment used in the collection and sorting of samples is listed below:

Collection

- Two 2-tonne trucks
- Heavy-duty bags
- High-visibility vests
- Overalls
- Gloves
- Safety footwear
- Head torches
- First aid kit

Sorting

- Electronic scales – 0.05 kg to 150 kg
- Electronic scales – 1 g to 11 kg
- Hexarmor cut- and puncture-resistant gloves
- Overalls
- Heavy-duty PVC aprons
- Masks
- Eye protection
- Safety footwear
- Sharps container
- First-aid kit
- Tongs
- Trestle tables
- Tarpaulins
- Standard weighing trays

2.6. Confidentiality

Although the address of each property from which samples were collected was recorded, code numbers were used to identify bags of collected samples during the whole collection and sorting process. Addresses were only recorded as a quality-control measure to ensure the correct number of samples was collected from the selected streets or MUD properties and that if samples were collected in reserve streets or MUD properties, the new properties were appropriate.

In addition, all staff were required to sign an confidentiality agreement which prohibits them from revealing details of or removing anything they might find while collecting or sorting.

2.7. Disposal of Sorted Materials

Sorted garbage samples were disposed of in one of three 3-m³ bulk bins which were removed daily and disposed of. Recyclable material was placed in a 10-m³ bin provided by Visy Recycling and collected every few days for recycling. Green waste was placed in bins, which were emptied every few days.

2.8. Data Verification and Accuracy

A number of techniques and procedures were used to check and verify data. When samples were unloaded from the collection trucks each night, the codes on the bags were checked against the codes recorded as collected that night. The next day during the sorting phase, as each bag was weighed for sorting, the code was again checked against the list of codes recorded as having been collected the night before. Collectors recorded when more than one bag was used to collect a sample at any property so that sorters knew how many bags there should be for each property.

At the data-entry stage, each coded sheet on which sorting data was recorded was checked again against the collection entry for that sample. Also, the weight of each bag recorded before sorting was checked against the total weight of the sorted components and any significant differences were investigated.

3. KEY FINDINGS

Garbage generation – in 2008 the average Wollongong City household generated 14.2 kg of garbage per week, approximately the same amount generated in 2002 – 13.9kg.

Composition of garbage stream – The largest proportion of the stream is food and kitchen waste, at 38.9%. Contaminated soiled paper (8.3%) and nappies (6.1%) were also found in significant proportions. The garbage stream comprises 17.7 % recyclable material (including green waste), again consistent with the 2002 result of 18.8%. Food represented 38.9% of the garbage stream, the same as that recorded in the 2002 audit (38.5%).

Recycling generation – in 2008 the amount of recycling (paper and containers) generated from the average Wollongong City household was 5.6 kg per week. This is also similar to the 2002 result of 5.3kg.

Composition of the recycling stream – the recycling stream comprised 50.2% paper and 44.6% recyclable containers – a very similar result to the 2002 audit.

Contamination – contamination in the recycling stream was 5.2%, down from 6.6% in 2002.

Green waste recycling – in 2008 the amount of green waste presented for recycling was 10kg per household per week. This result is double that recorded in 2002. The green waste recycling stream comprised 98.2% vegetation, with just 1.8% contamination.

Recovery rates – overall recovery rate in 2008 was 90.8%.

Vegetation in the garbage stream – the proportion of garden organics in the garbage stream in 2008 is 3.5%, up from 2% recorded in 2002.

Diversion – the diversion rate of 62.5% is an improvement from the 50.4% recorded in 2002 and close to the maximum achievable under the current system of 68%.

Garbage-bin Capacity – the average (median) volume of garbage bins used in single dwellings in 2008 was 85%. For multi unit dwellings this figure was 60%.

Recycling-bin Capacity – the average (median) volume of recycling bins used in single dwellings in 2008 was 85% and for multi unit dwellings this figure was 70%.

Green waste bin Capacity – the average (median) volume of green waste bins used in Wollongong in 2008 was 80%.

4. RESULTS

The tables below shows the number of samples collected, from which suburbs they were collected and how this compared with the proposed number of samples.

Table 4 - Number and Location of Samples Audited – Single Dwellings

Date	Day	Suburb(s)	Garbage	Recycling	Green waste	Total
13 Oct	Monday	Cordeaux Heights, Helensburgh, Mount Ousley, Unanderra	39	28	28	95
7 Oct	Tuesday	Clifton, Mangerton, North Wollongong, West Wollongong	30	17	30	77
8 Oct	Wednesday	Bulli, East Corrimal, Warrawong	39	27	29	95
9 Oct	Thursday	Bulli, Cringila, Horsley, Thirroul	39	27	26	92
10 Oct	Friday	Balgownie, Corrimal, Dapto, Kanahooka	47	30	28	105
Total Collected		-	194	129	141	464
Total Proposed		-	125	85	95	305

Table 5 - Number and Location of Samples Audited – Multi-unit Dwellings

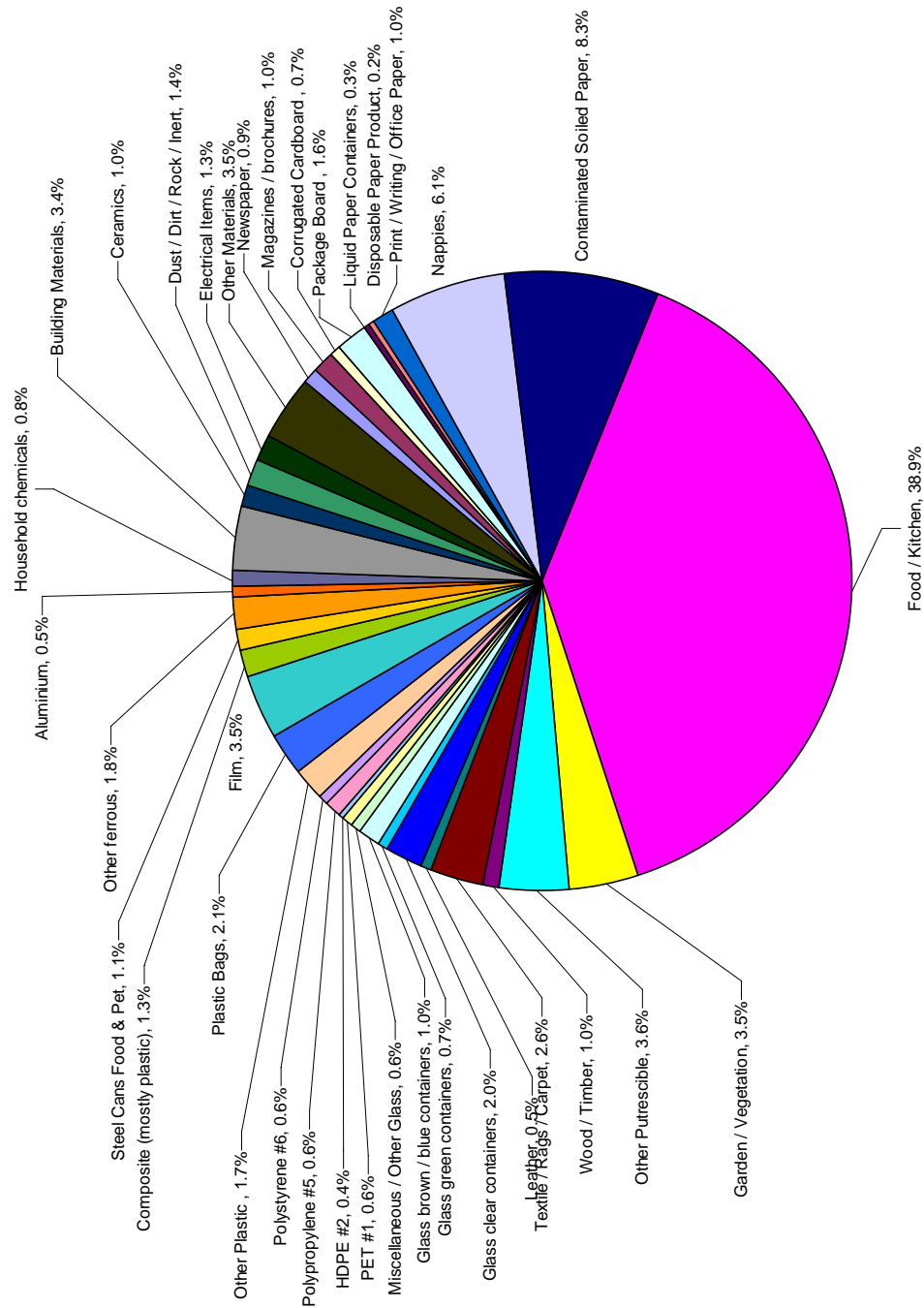
Date	Day	Suburb(s)	Garbage	Recycling	Green waste	Total
13 Oct	Monday	Figtree, Wollongong	32	0	0	32
7 Oct	Tuesday	Wollongong	33	15	0	48
8 Oct	Wednesday	-	0	0	0	0
9 Oct	Thursday	Bulli	0	29	0	29
10 Oct	Friday	-	0	0	0	0
Total Collected		-	65	44	0	109
Total Proposed		-	135	90	80	305

Table 6 - Number and Location of Samples Audited – All Dwellings

Date	Day	Suburb(s)	Garbage	Recycling	Green waste	Total
13 Oct	Monday	Cordeaux Heights, Figtree, Helensburgh, Mount Ousley, Unanderra, Wollongong	71	28	28	127
7 Oct	Tuesday	Clifton, Mangerton, North Wollongong, West Wollongong, Wollongong	63	32	30	125
8 Oct	Wednesday	Bulli, East Corrimal, Warrawong	39	27	29	95
9 Oct	Thursday	Bulli, Cringila, Horsley, Thirroul	39	56	26	121
10 Oct	Friday	Balgownie, Corrimal, Dapto, Kanahooka	47	30	28	105
Total Collected		-	259	173	141	573
Total Proposed		-	260	175	175	610
Total Required		-	260	175	175	610

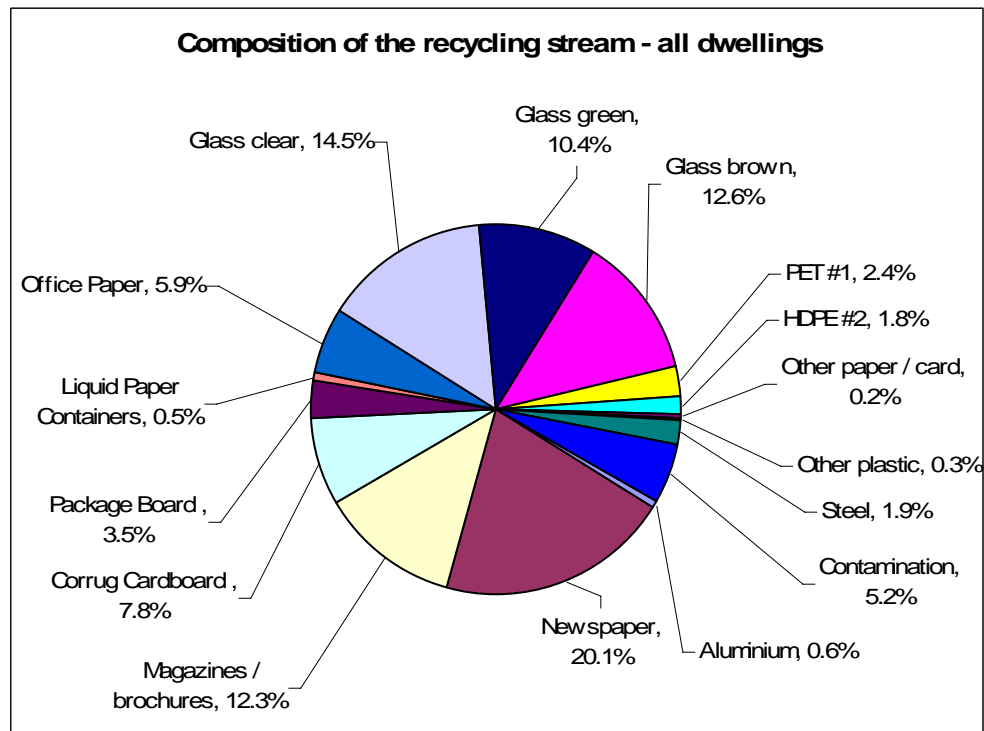
All data is weight-based unless otherwise stated. Raw data in tables is provided at the end of the report. The results of the audit have been graphically represented in the following charts, which show the various components of the waste stream with detailed explanations.

Chart 1 Detailed composition of the garbage stream – all dwellings

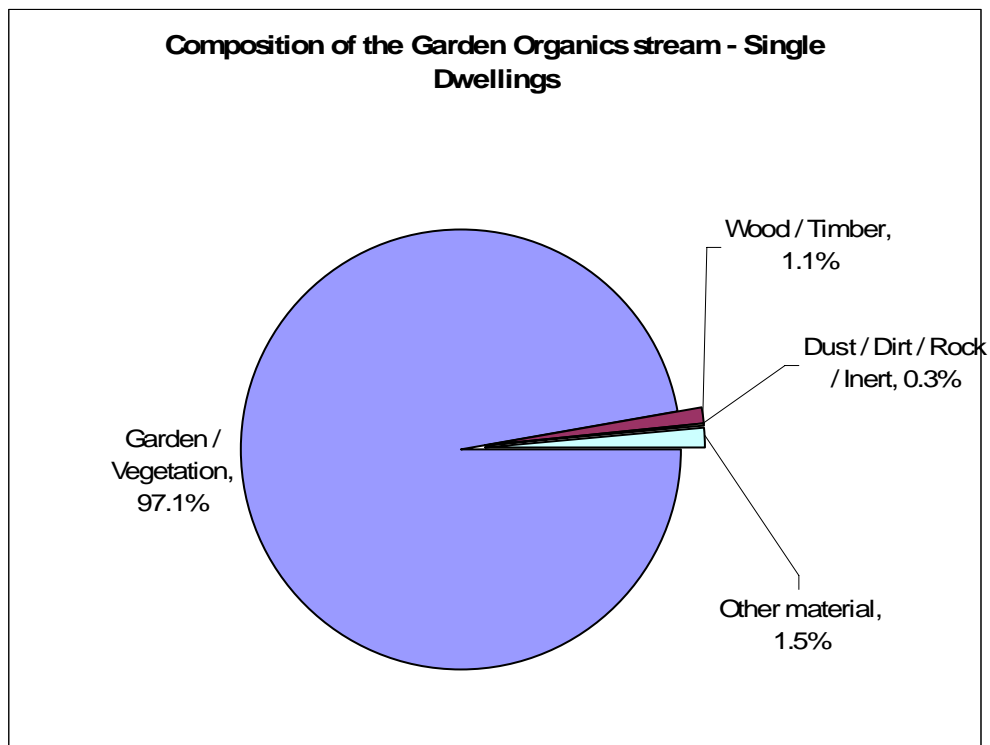


The chart shows the composition of the garbage stream from all dwellings audited. The largest proportion of the stream is food and kitchen waste, at 38.9%. Contaminated soiled paper (8.3%) and nappies (6.1%) were also found in significant proportions.

Chart 2 Detailed composition of the recycling stream – all dwellings

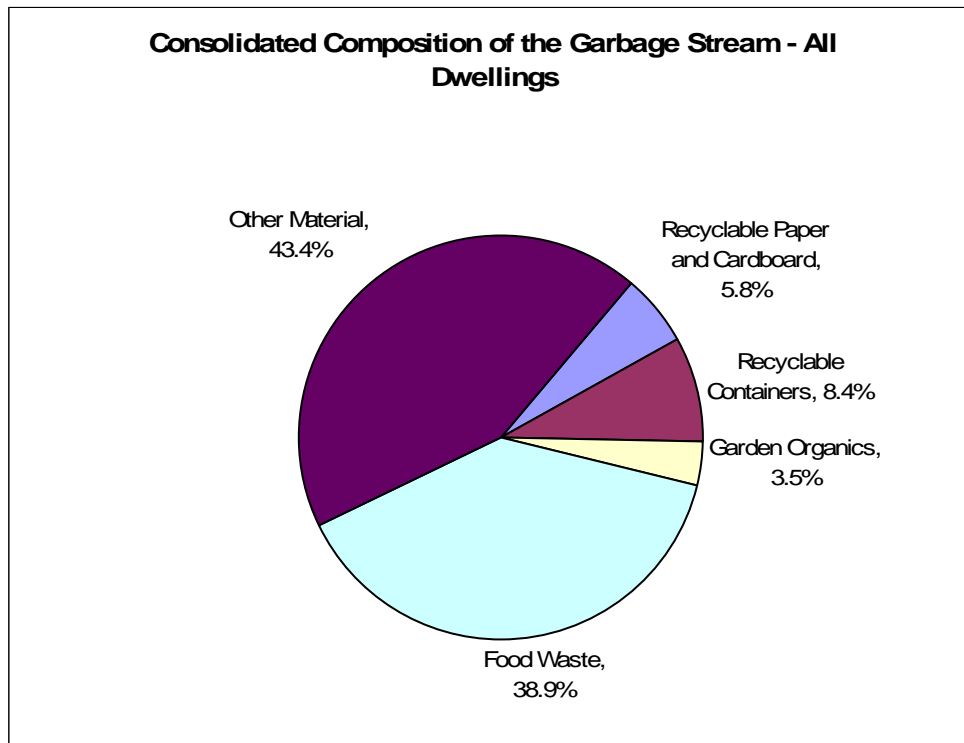


The chart above shows the composition of the recycling stream from all dwellings audited. The largest component of this stream is glass containers, collectively accounting for 37.5% followed by newspaper at 20.1%.

Chart 3 **Composition of the Garden Organics stream – Single dwellings**

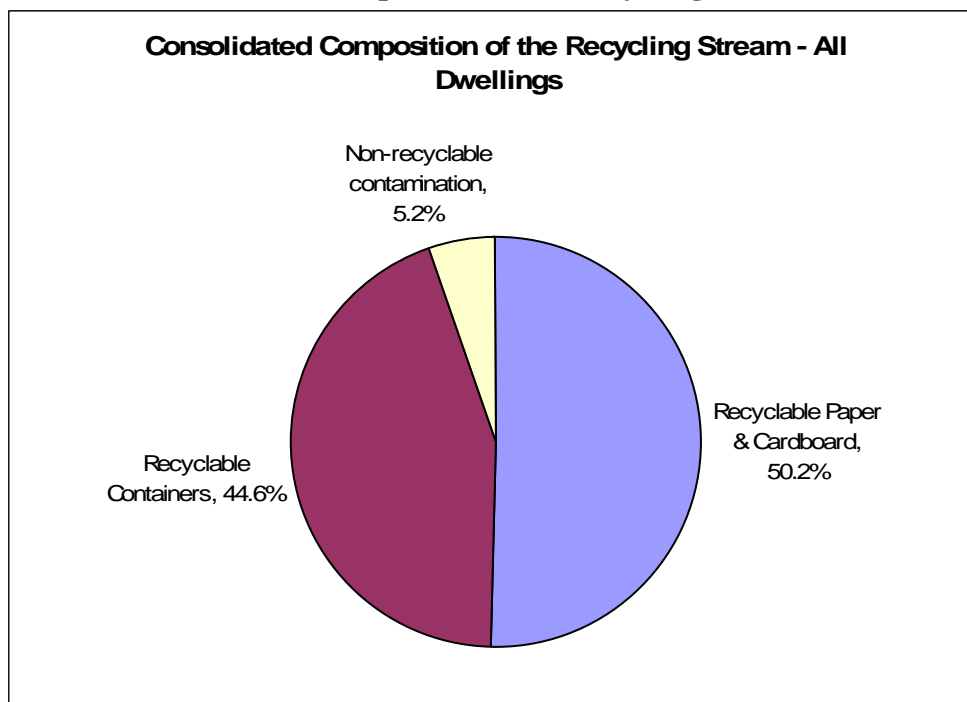
The chart above shows the composition of the green waste stream from single dwellings only. Green waste generated from MUDs was not collected as part of this audit as most properties choose not to utilise this service. The largest component of the stream was green waste at 97.1%, with small proportions of wood/timber (1.1%), other material (1.5%) and dust/dirt/rock 0.3%.

Chart 4 Consolidated composition of the garbage stream – all dwellings



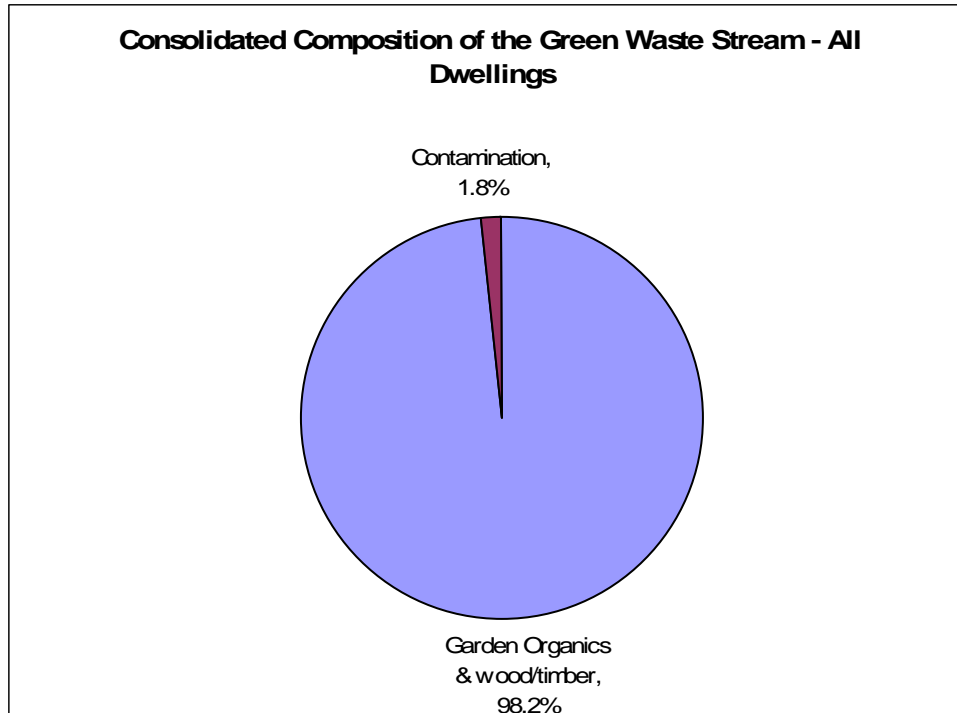
The chart shows the composition of the garbage stream from all dwellings audited, consolidated into some key categories. “Other material” is the largest proportion, at 43.4% followed by food waste at 38.9%. Of the garbage stream, 17.7% was material which could be recovered through the existing green waste or recycling systems.

Chart 5 Consolidated composition of the recycling stream – all dwellings



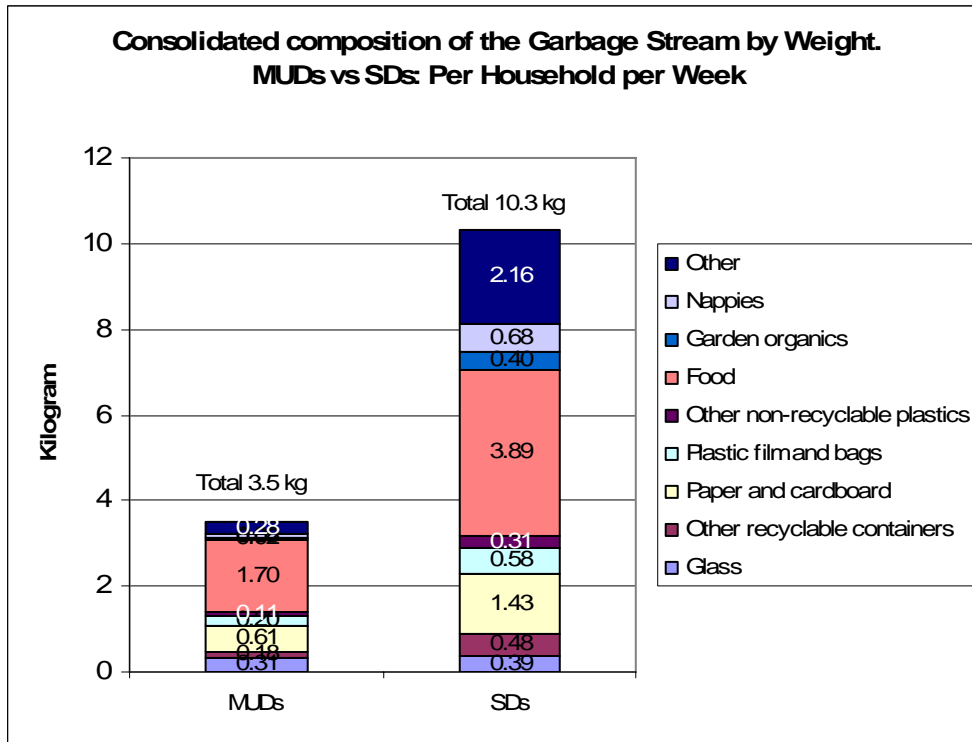
The chart shows the composition of the recycling stream from all dwellings audited, consolidated into some key categories. Recyclable paper and cardboard represent the largest proportion at 50.2%, with recyclable containers at 44.6%. Non-recyclable contamination comprises 5.2%.

Chart 6 Consolidated composition of the green-waste stream – all dwellings



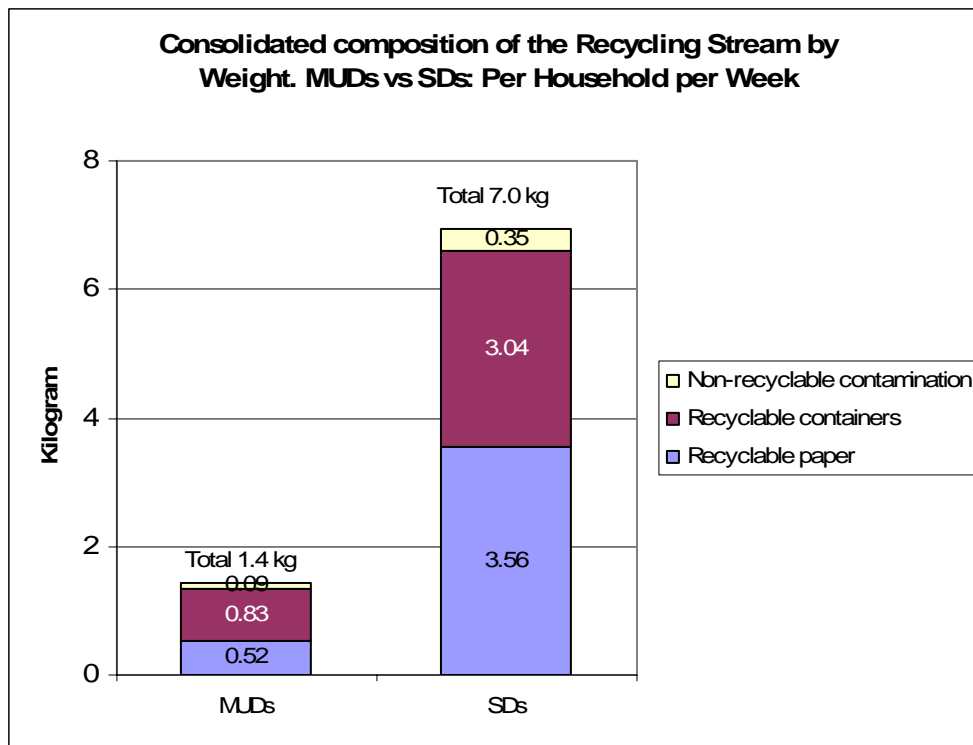
The chart shows the composition of the green waste stream from all dwellings audited, consolidated into some key categories. Garden organics represents the largest proportion, at 98.2%, with a small proportion of contamination (1.8%).

Chart 7 Consolidated composition of the garbage stream – by weight MUDs vs SDs per household per week



The chart shows the consolidated composition of the garbage stream by weight, per household per week for MUDs and SDs. Food accounted for 3.89kg per household per week in the SDs and 1.7kg in the MUDs. This graph also shows that there was still 1.43kg of paper and cardboard in the SD garbage stream and 0.6kg in the MUD garbage stream that could be diverted to recycling.

Chart 8 Consolidated composition of the Recycling Stream by Weight: SDs Vs MUDs; Per Household per Week



The chart shows the weight of recyclables found per household per week for both MUDs and SDs. Recyclable paper accounted for slightly more of the recycling stream in SDs than in the MUDs. Contamination was consistent in both the MUDs and the SDs with results of 6% and 5% respectively.

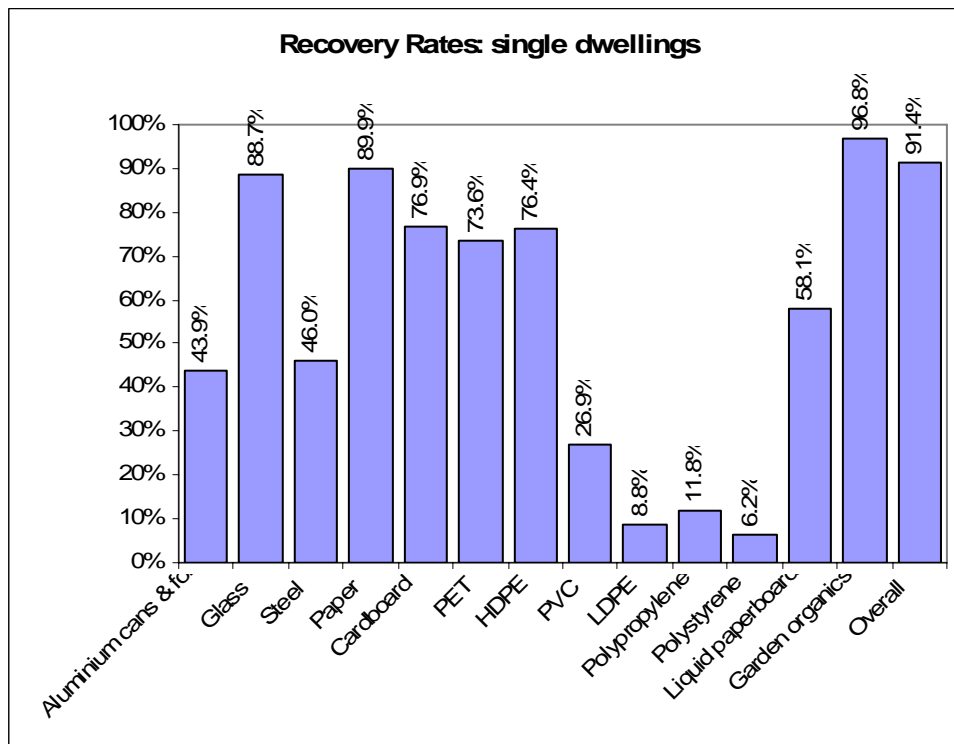
Chart 9 Recovery rates single dwellings

Chart 9 presents the recovery rates for the recyclable products for single dwellings along with the overall recovery rate of 91.4%. Garden organics achieved the highest recovery rate of 96.8% followed by paper at 89.9%. Glass containers achieved a recovery rate of 88.7% and cardboard was 76.9%.

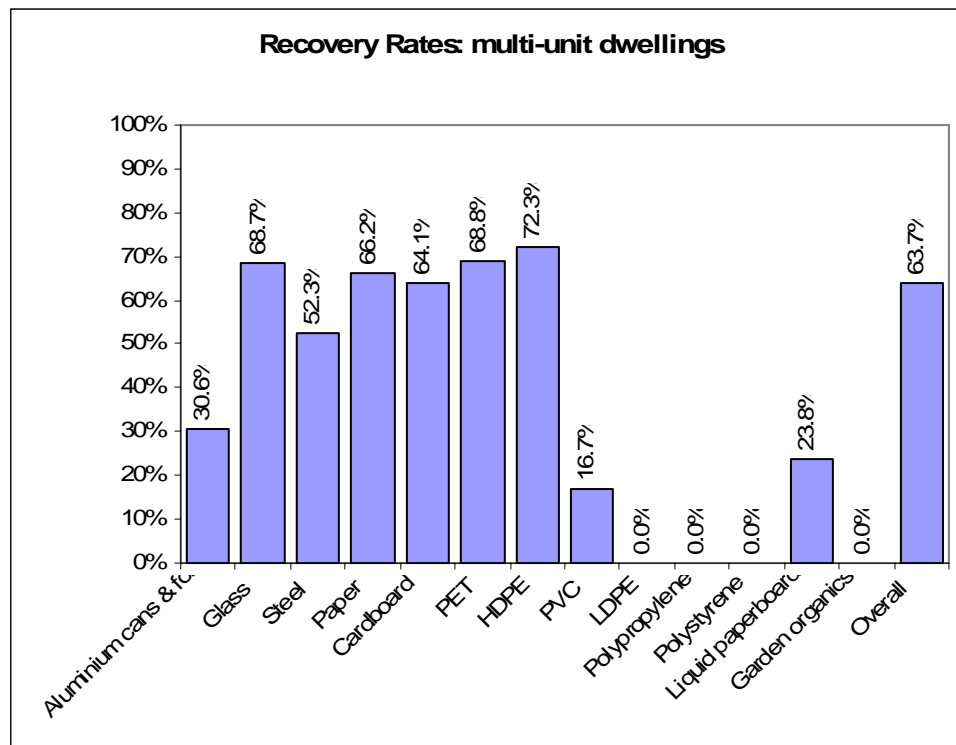
Chart 10 Recovery rates multi unit dwellings

Chart 10 presents the recovery rates for the recyclable products for multi unit dwellings along with the overall recovery rate of 63.7%. This is significantly lower than the result achieved in the SDs. HDPE achieved the highest recovery rate in the MUDs at 72.3%. PET achieved a recovery rate of 68.8%, followed by glass containers at 68.7% and paper was 66.2%.

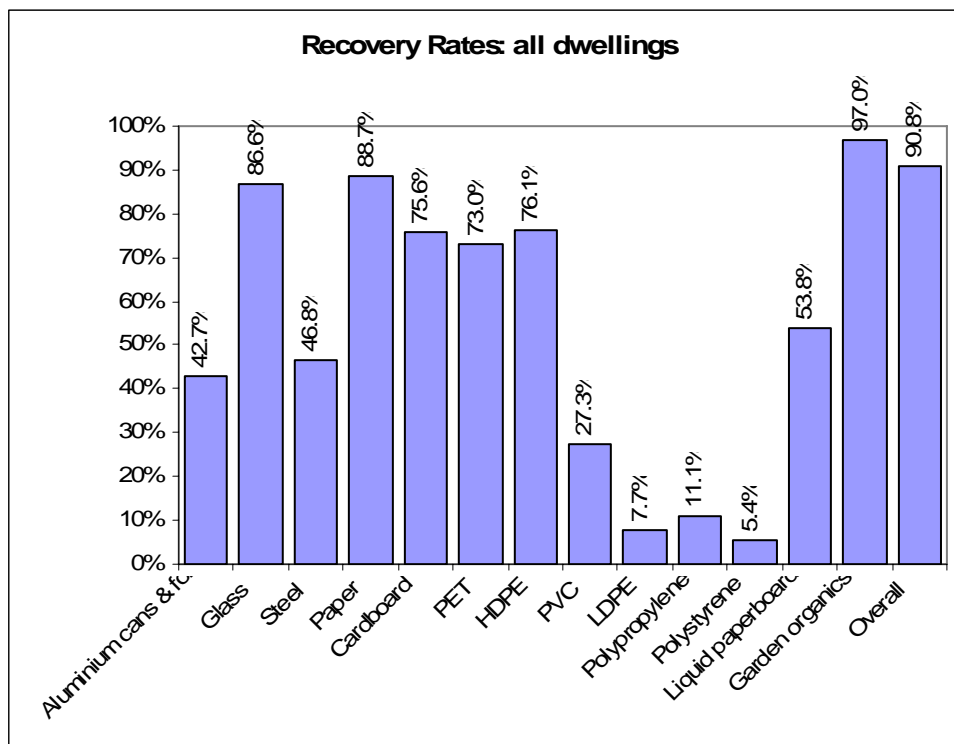
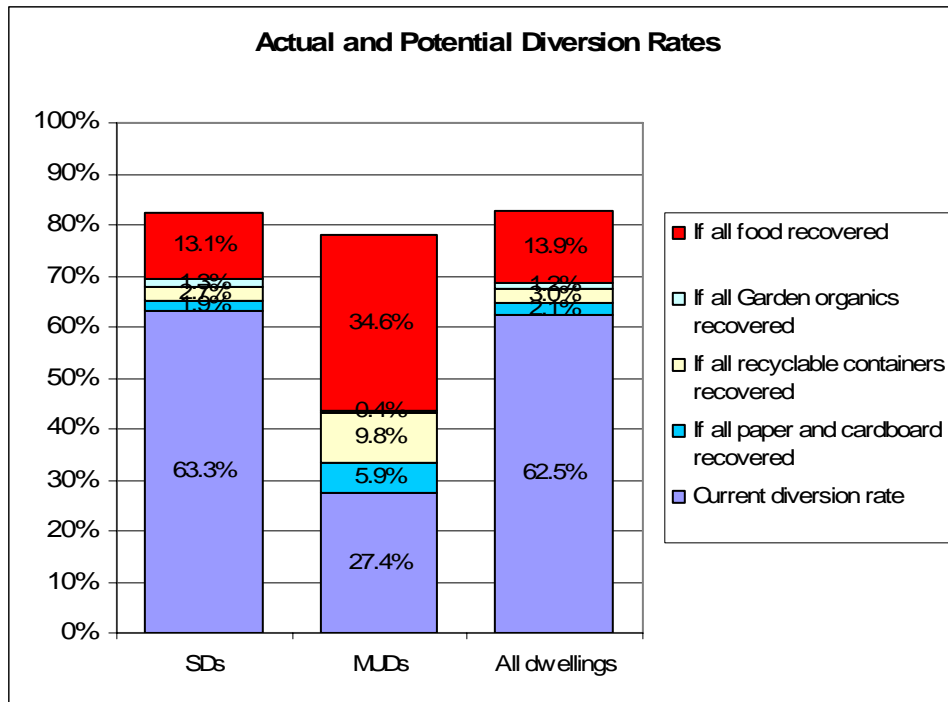
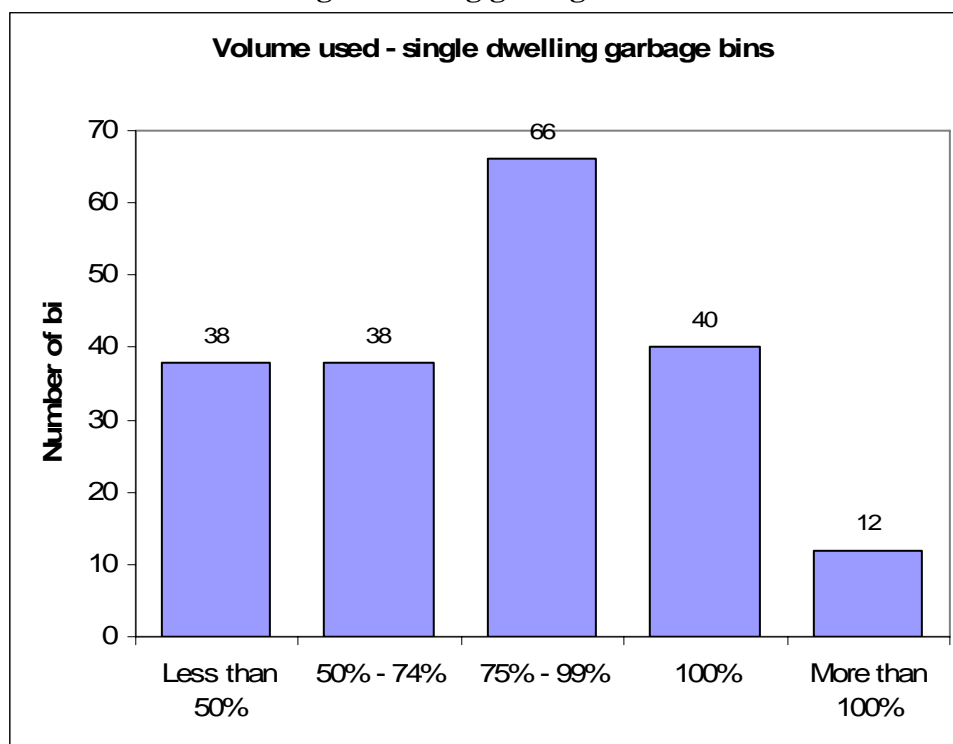
Chart 11 Recovery rates all dwellings

Chart 11 presents the combined recovery rates for the recyclable products for all dwellings. Overall the recovery rate is 90.8%. The highest performing products were garden organics (97%), paper (88.7%) and glass containers (86.6%). Poor performing products were polystyrene (5.4%), LDPE (7.7%) and polypropylene (11.1%).

Chart 12 Actual and potential diversion



The chart shows the actual diversion rate and potential diversion rates if all potentially recyclable material was diverted for the SDs, MUDs and combined. Overall, the current diversion rate is 62.5%. This could only be increased to 69% without the inclusion of a system to recover food waste.

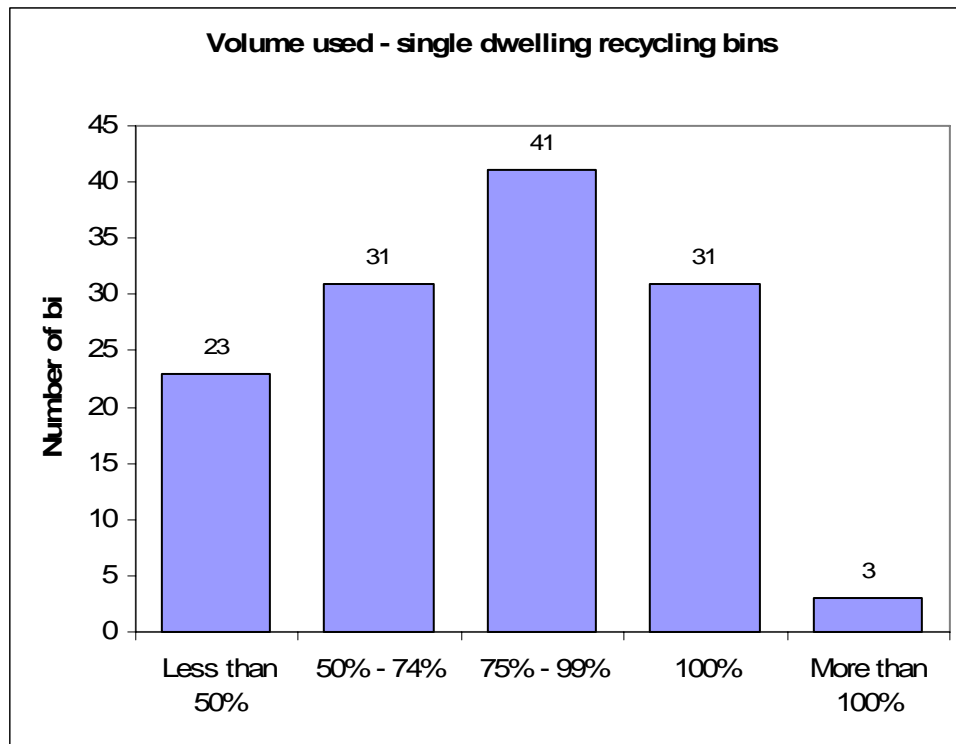
Chart 13 Volume of single-dwelling garbage bins used

Volume used	Number	Per cent
Less than 50% full	38	19.6%
Between 50% and 74% full	38	19.6%
Between 75% and 99% full	66	34.0%
100% full	40	20.6%
More than 100% full (overflowing)	12	6.2%
Total bins studied	194	100.0%

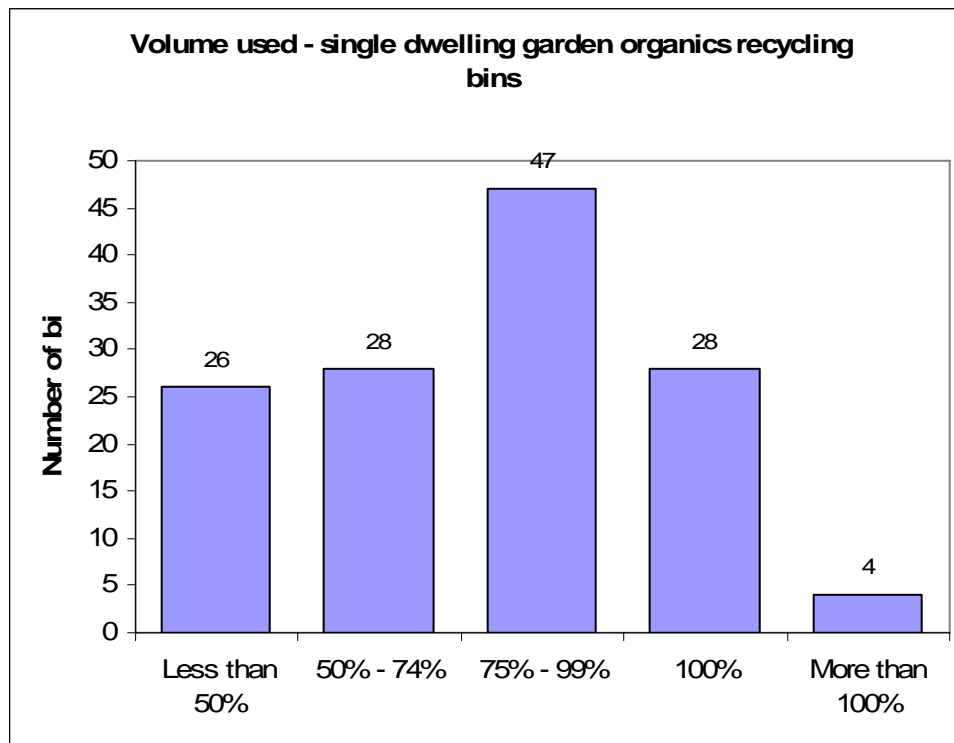
Median 85%

The chart shows the volume filled of the garbage bins at each of the single dwellings households recorded as part of this audit. Some bins were placed out at properties where only the recycling or green-waste bin was required to be sampled. In those cases, the volume of the garbage bin was recorded nevertheless.

The majority of bins were between 75%-99% full. 12 bins were more than 100% full and 38 bins were less than 50%. The median volume usage for garbage bins was 85%.

Chart 14 Volume of single-dwelling recycling bins used

The chart shows the volume filled of the recycling bins at each of the single dwelling households recorded as part of this audit. As with the garbage bins, the majority of bins were between 75% and 99% full. 3 bins were filled to more than 100% and 23 bins were less than 50% full. The median volume usage for recycling bins was 85%.

Chart 15 Volume of single-dwelling green waste bins used

The chart shows the volume filled of the green waste bins at each of the households recorded as part of this audit. As for the garbage and recycling bins, the majority of green waste bins were between 75%-99% full. 4 bins were more than 100% full and 26 bins were less than 50% full. The median volume usage for green waste bins was 80%.

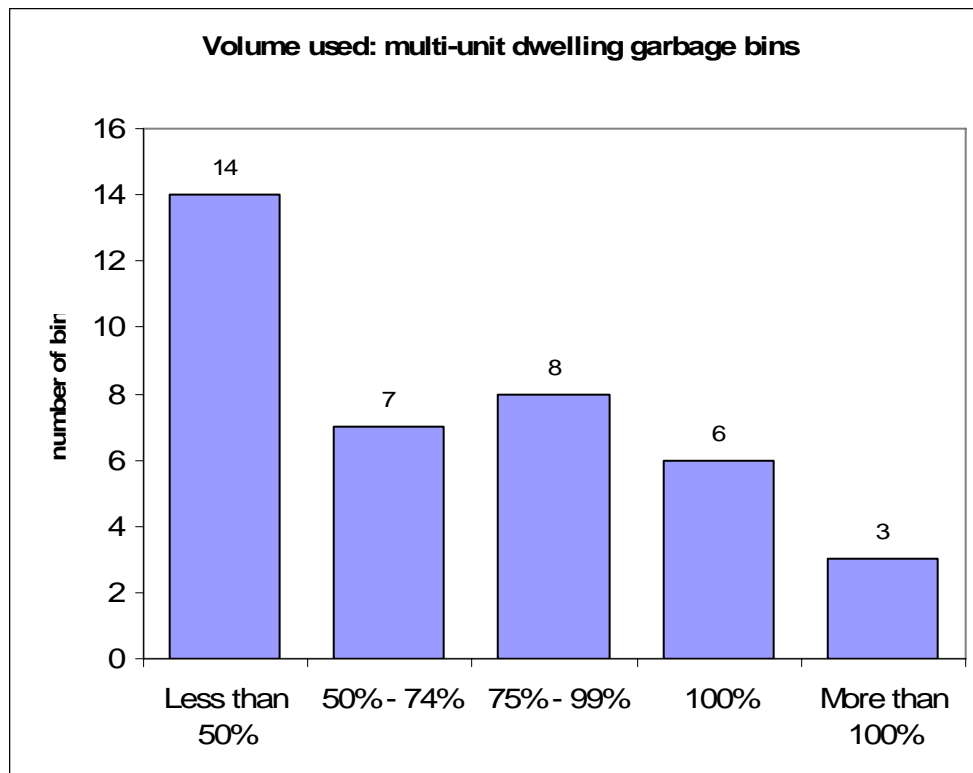
Chart 16 Volume of multi-unit dwelling garbage bins used

Chart 16 shows the volume of the garbage bins used at the MUDs audited. In this case most bins were less than 50% full which would indicate that a reduction in garbage disposal capacity could be considered as part of future changes to the waste management system. 8 bins were between 75%-99% full and only 3 bins were more than 100% full. The median usage was 60%.

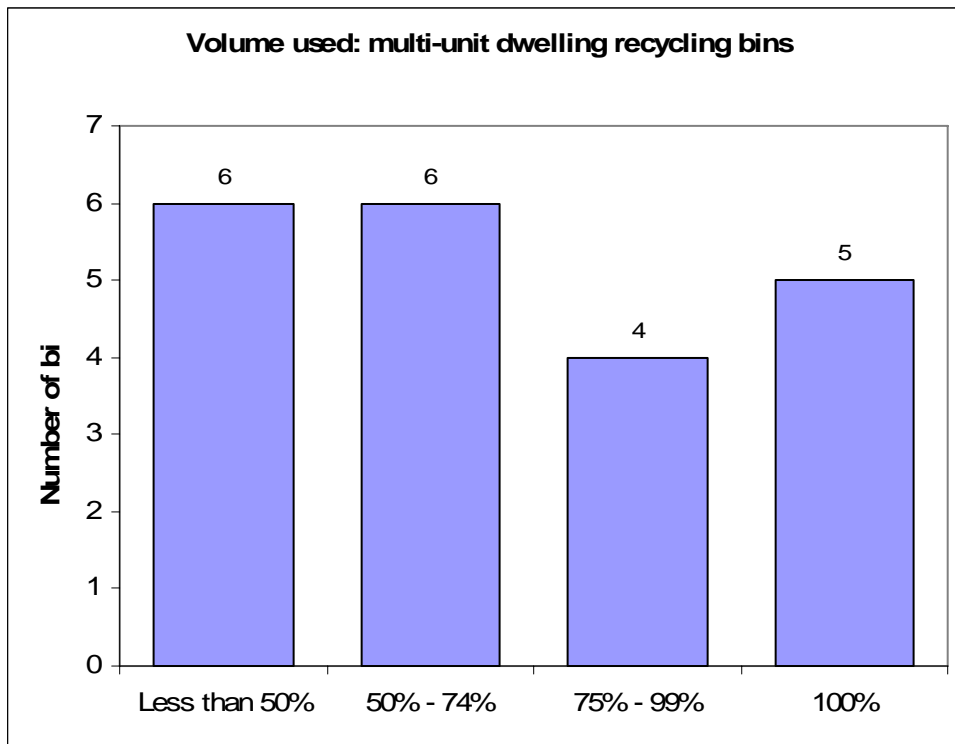
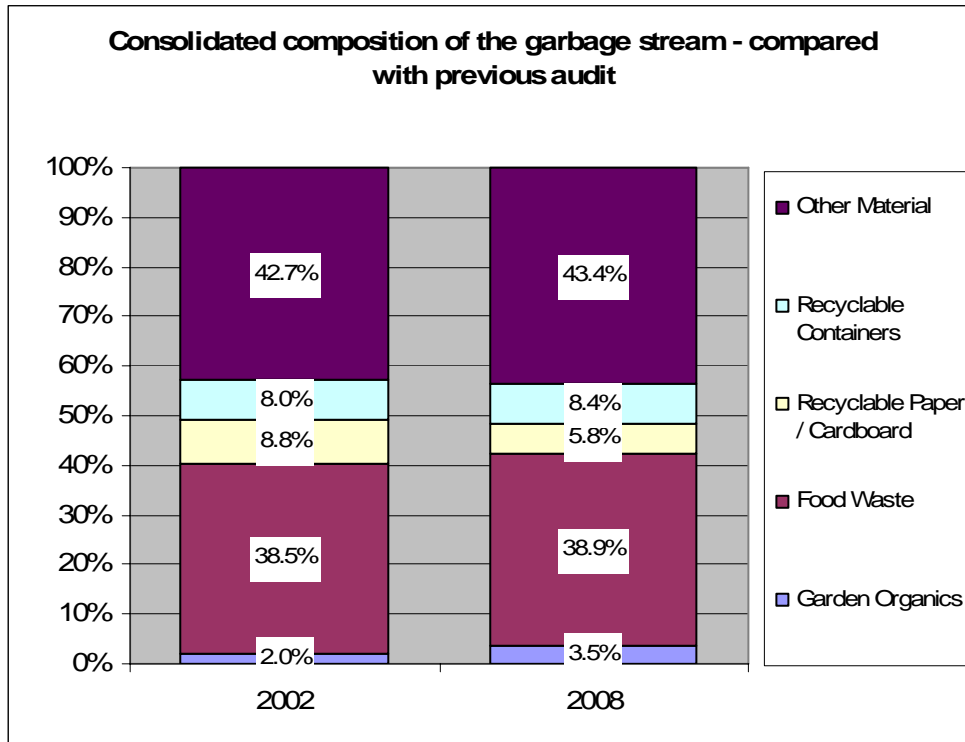
Chart 17 Volume of multi unit dwelling recycling bins used

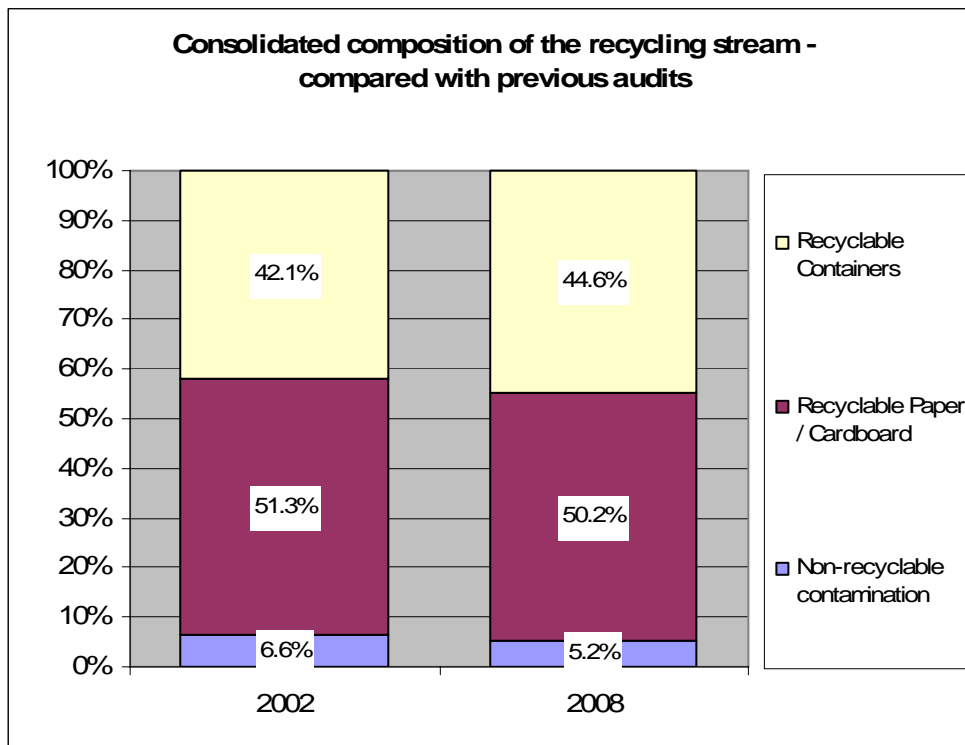
Chart 17 shows the volume of recycling bins used when placed out for collection in the MUDs. The median usage was calculated to be 70%.

Chart 18 Consolidated composition of garbage – previous audits



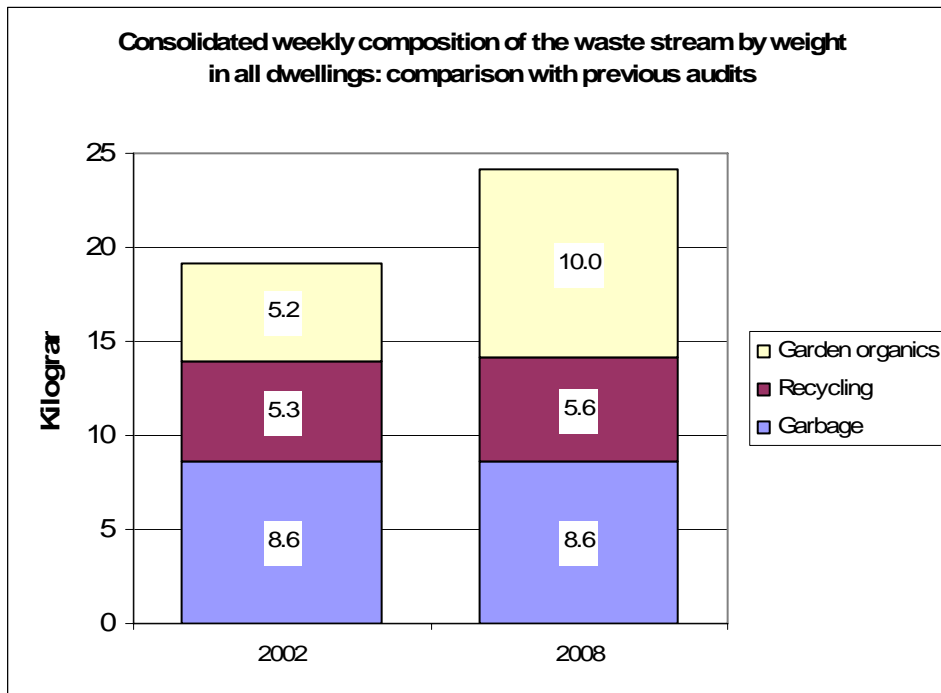
The chart shows the consolidated composition of the garbage stream found in 2008 compared to the previous audit in 2002. The main change in the 2008 composition, compared to previous results is a slight decrease in the proportion of recyclable paper from 8.8% to 5.8%. Other proportions have remained very much the same.

Chart 19 Consolidated composition of recycling – previous audits

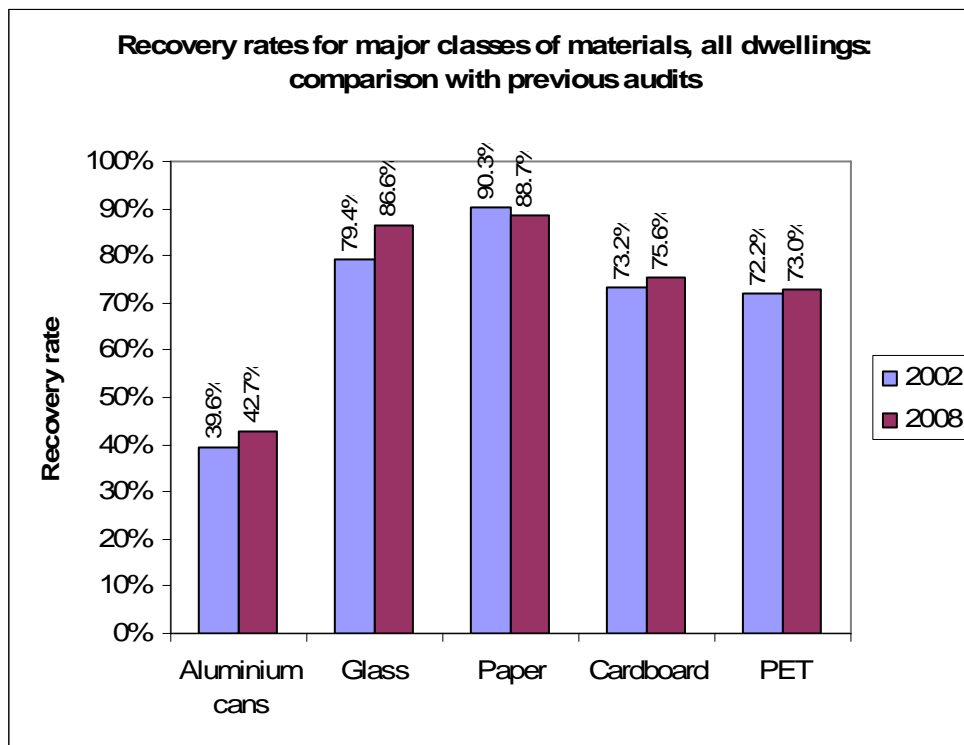


The chart shows the consolidated composition of the recycling stream found in 2008 compared to the previous audit. The 2008 composition shows a slight increase in the proportion of recyclable containers and a slight decrease in the level of contamination.

Chart 20 Consolidated weekly composition of waste stream in all dwellings: comparison with previous audits

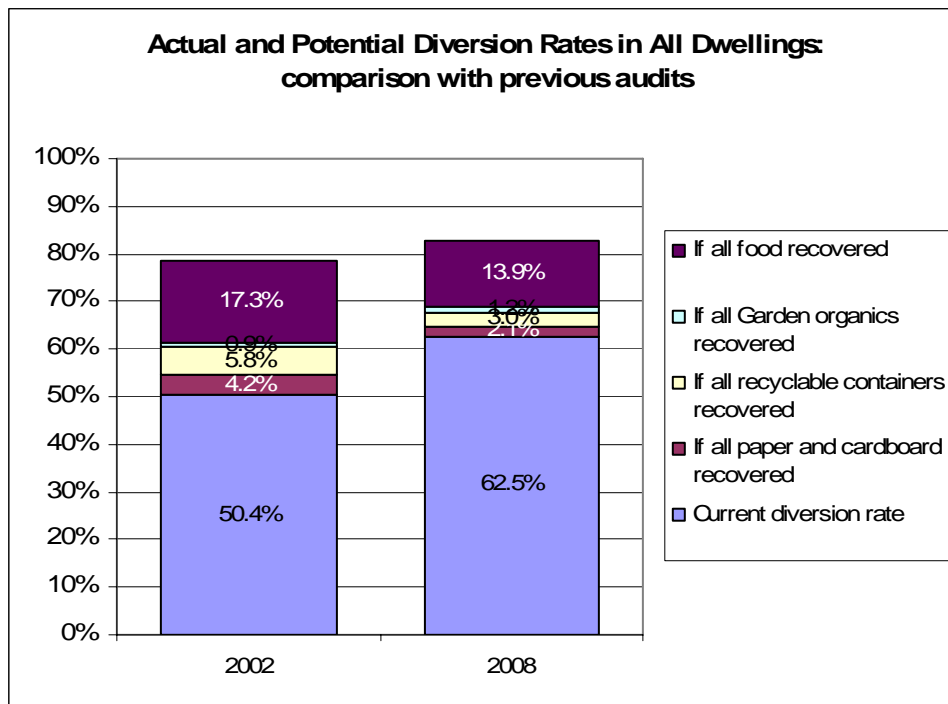


The chart shows the weight of garbage, recycling and green waste per household per week for all dwelling types in Wollongong City. The results for recycling and garbage are very similar to those recorded in the 2002 audit however the volume of green waste has doubled.

Chart 21 Recovery rates – all dwellings – comparison with previous audits –

The chart shows the recovery rates from major classes of materials (determined by their proportion of the recycling stream), from all dwellings compared to previous audits. The major materials are aluminium, glass, paper, cardboard and PET. Recovery rates for all of these materials have increased from previous audits (albeit slightly), except for paper whose rate has dropped by approximately 3%.

Chart 22 Actual and Potential Diversion rates - previous audits



The chart shows the actual diversion rate for single dwellings in 2008 and for previous audits, as well as potential diversion rates if certain other materials were recovered. The diversion rate is 62.5%, up from 50.4% in 2002. The maximum potential diversion without the inclusion of food waste is 68%. Wollongong City council is very close to achieving its maximum potential diversion (excluding food waste) with the current system in place.

5. CONFIDENCE INTERVALS

Measuring the proportions of particular materials in the garbage, recycling and green waste streams is done by taking a number of randomly selected households' kerbside waste as a sample of all the households in a council area.

The accuracy of estimates of waste stream composition depends on two factors:

- **Sample size:** Larger numbers of samples will have lower errors and thus yield greater accuracy
- **Variability within the sample:** If households differ greatly from each other in what they place out in their waste, the estimates will have higher errors and thus yield less accuracy. The variability of households is difficult to measure until an audit is actually carried out, but is usually taken to be relatively high.

It is not necessary to take larger samples in larger populations. For example, in a council of 40,000 households, it is not necessary to take a sample twice as large as for a council of 20,000 households. The accuracy of a sample depends on its size, i.e., a sample of 200 will have a certain level of accuracy no matter how large the overall population is.

Because only a sample of households has been audited rather than every household in a council area, the data is not 100% accurate. The accuracy of the data, however, can be measured by calculating confidence intervals. These are the upper and lower ends of a range of values between which we can be confident that the true value for the whole council lies. The confidence intervals for all the components of each of the streams audited can be found in Appendix B.

The DECC Guidelines indicate that the major components of the waste stream are:

- Food organics
- Paper
- Plastics
- Metals
- Textiles and
- Glass

Using the data from the audit and the sample calculation formula shown in the DECC Guidelines⁷, sample sizes have been calculated for the above materials to show how many single-dwelling households need to be sampled in future audits to achieve the same confidence intervals as calculated in 2008.

⁷ $n = \left(\frac{z \times CV}{f} \right)^2$

6. CONCLUSIONS

The results for Wollongong City show that overall waste generation is up by 5kg per household per week however all of this increase has occurred in the garden waste stream which could be explained by seasonal fluctuation and the different times of the year in which the audits were conducted.

There recycling contamination rate improved slightly, dropping from 6.6% in 2002 to 5.2% in 2008. Wollongong City is close to achieving its maximum diversion rate with the current collection system. The recovery of food in some form will be the next way in which to make significant improvements to the recovery of waste in Wollongong City.

APPENDIX A

WASTE SORTING CATEGORIES

AWD Code	Material Type	Material Items
PAPER		
A01	Newspapers	Newspapers, newspaper-like pamphlets
A02	Magazines, Brochures	Magazines (glossy and non-glossy), pamphlets,
A03	Miscellaneous Packaging	Wrapping paper, labels, paper packaging (no plastic or wax coatings)
A04	Corrugated Cardboard	Cardboard with corrugation
A05	Package Board	Cardboard without corrugation (glossy and non-glossy), cereal boxes, business cards
A06	Liquid Paperboard Containers	Soy milk cartons, some fruit juice cartons, UHT/long-life milk
A07	Disposable Paper Products	Hand towels, tissues, coffee cups, paper napkins, paper food bags (unsoiled)
A08	Print/Writing Office Paper	A4 document paper, writing pads, letters, envelopes, books
A09	Composite (mostly paper)	Composite paper items for which the weight of the paper is estimated to be greater than the weight of the other materials
A90	Nappies	Used disposable nappies
A092	Contaminated Soiled Paper	Paper not suitable for recycling, mixed and other paper, used tissues, soiled paper
ORGANIC (COMPOSTABLES)		
B01	Food/Kitchen	Vegetable scraps, meat scraps, animal food, leftover food.
B02	Garden/Vegetation	Grass clippings, tree trimmings/prunings, flowers, tree wood (< 20 mm)
B03	Other Putrescible	Animal excrement, mixed compostable items, cellophane
OTHER ORGANIC		
C01	Wood/Timber	Milled wood/timber, children's wooden toys, wooden skewers, garden trees (> 20 mm)
C02	Textile/Rags/Carpet (Organic)	Wool, cotton and natural fibre materials
C03	Leather	Leather clothing, craft leather, some shoes, belts with belt buckle
C04	Rubber	Rubber bands, rubber toys, Shoes, latex gloves
C05	Oils	Used car oil, motor and other, vegetable, cooking oil
GLASS		
D01	Recyclable Glass	Beer bottles, wine bottles, food and sauce jars other than clear, green or brown
D0121	Glass Clear Packaging/Containers	Beer bottles, wine bottles, food and sauce jars (clear glass)
D0122	Glass Green Packaging/Containers	Beer bottles, wine bottles, food and sauce jars (green glass)
D0123	Glass Packaging/Containers Brown/Blue	Beer bottles, wine bottles, food and sauce jars (amber/brown glass)
D050	Mixed Glass/Fines	Mixed glass or glass fines < 4.75 mm – non-recyclable
D02	Miscellaneous/Other Glass	Plate glass (window and windscreen), Pyrex, Corning ware, light globes, laboratory and medical glass, white opaque glass (e.g., Malibu alcohol bottles)
PLASTIC		
E01	PET #1	(Polyethylene) Soft drink bottles, juice bottles, some food containers (e.g., jam & sauce bottles), mouthwash containers, peanut butter jars,
E02	HDPE #2	(High-density polyethylene) milk and cream bottles, shampoo and cleaner bottles
E03	PVC #3	(Polyvinyl chloride) Clear cordial and juice bottles, blister packs, plumbing pipes and fittings
E04	LDPE #4	(Low-density polyethylene) Ice cream container lids, cream bottle lids, squeeze bottles, lids, poly pipe, black mulch film, plant nursery bags, builders' black plastic, bread bags
E05	Polypropylene #5	Ice cream containers, drinking straws, plant pots, some bottle caps, microwave oven ware, plastic garden settings, potato crisp bags, compost bins, worm farms

AWD Code	Material Type	Material Items
E06	Polystyrene #6 (Polystyrene and expanded polystyrene)	Yoghurt/sour cream containers, plastic cutlery, imitation crystal glassware, clothes pegs, coat hangers, office accessories, video/CD boxes, hot drink cups, take-away containers, meat trays, packaging foam
E07	Other Plastic	Tupperware, mixed unidentifiable plastics, low-cost brittle toys, all other resins and multi-blend plastic materials, synthetic textiles, all other containers
E071	Foams	Foam
E072	Plastic Bags	Plastic shopping bags
E073	Film	Film, office film, cling film
E08	Composite (mostly plastic)	Cigarette butts, composite plastic items for which the weight of the plastic is estimated to be greater than the other material items.
FERROUS		
F01	Steel Packaging Cans Food & Pet	Food cans, pet food cans, tins
F011	Steel Aerosols	Aerosol cans
F012	Steel Paint Cans	Empty paint tins
F03	Composite (mostly ferrous)	Beer bottle tops, jar lids, composite ferrous items for which the weight of the ferrous metal is estimated to be greater than the other material items
F02	Other (specify)	100% ferrous items that are not cans/tins/package materials, any other steel
NON-FERROUS		
G01	Aluminium	Beer and soft drink cans, clean foil
G03	Composite (mostly non-ferrous)	Composite non-ferrous metal items for which the weight of the metal is estimated to be greater than the other material items.
G02	Other (specify)	Copper/brass/bronze items, other metals (not ferrous/aluminium)
HAZARDOUS		
H01	Paint	Paint (dry or wet)
H02	Fluorescent Tubes	Fluorescent tubes; compact fluorescent lamps (CFLs)
H03	Dry-cell Batteries	Common batteries, AAA, AA etc, single-use or rechargeable
H04	Car Batteries	Car batteries
H05	Household Chemicals	Bleach, shampoo, cleaning products, unused medical pills
H06	Building Materials	Building materials not earth-based or wood
H07	Clinical (Medical)	Sharps, human tissue, bulk bodily fluids and blood, any blood-stained disposable material or equipment.
	Gas Bottles	Gas bottles
	Hazardous Other	Any other hazardous material
EARTH-BASED		
I01	Ceramics	Cups, bowls, pottery items
I02	Dust/Dirt/Rock/Inert	Vacuum bag contents, soil, rocks, dirt, concrete, plasterboard
I03	Ash/Earth-based	Ash
OTHER & WEEE		
Q53	Other Household Items	Other household items, candles, candle wax, cosmetics
Y57	Toner Cartridges	Printer and toner cartridges
	Computer Parts	Keyboard, monitor, cables, printers, etc.
	Electrical Items	Toasters, radios, iPods, Gameboys, stereos, speakers, TVs, VCRs, DVD players, small electrical items, power tools, wiring and cables.
	Mobile Phones	Mobile phones
XX00	Other	Other, please specify

APPENDIX B CONFIDENCE INTERVALS

Table 12 - Single-dwelling Confidence Intervals – Garbage Stream

AWD Code	Material	n	Average	St dev	CI	Lower CI	Upper CI
A01	Newspaper	194	0.09	0.37	0.04	0.04	0.13
A02	Magazines/brochures	194	0.09	0.21	0.02	0.07	0.12
A03	Miscellaneous Packaging	194	0.01	0.03	0.00	0.00	0.01
A04	Corrugated Cardboard	194	0.07	0.22	0.03	0.04	0.09
A05	Package Board	194	0.16	0.16	0.02	0.14	0.18
A06	Liquid Paper Containers	194	0.03	0.06	0.01	0.02	0.03
A07	Disposable Paper Product	194	0.02	0.05	0.01	0.02	0.03
A08	Print/ Writing/ Office Paper	194	0.11	0.37	0.04	0.07	0.15
Total	Recyclable Paper	194	0.57	0.77	0.09	0.48	0.66
A09	Composite (mainly paper)	194	0.02	0.10	0.01	0.00	0.03
A90	Nappies Disposable	194	0.67	1.86	0.22	0.45	0.89
A092	Contaminated Soiled Paper	194	0.84	0.73	0.09	0.76	0.93
Total	Non Recyclable (Composite)	194	1.53	2.11	0.25	1.28	1.78
	Total Paper	194	2.10	2.30	0.27	1.83	2.37
B01	Food/Kitchen	194	3.89	3.27	0.39	3.50	4.27
B02	Garden/Vegetation	194	0.40	1.62	0.19	0.21	0.59
B03	Other Putrescible	194	0.41	1.57	0.19	0.22	0.59
Total	Organic (Compostables)	194	4.70	3.92	0.46	4.23	5.16
C01	Wood/Timber	194	0.11	0.48	0.06	0.05	0.17
C02	Textile/Rags	194	0.26	0.47	0.06	0.21	0.32
C03	Leather	194	0.06	0.36	0.04	0.02	0.10
C04	Rubber	194	0.03	0.12	0.01	0.02	0.05
C05	Oils	194	0.02	0.14	0.02	0.00	0.04
Total	Other Organics	194	0.48	0.84	0.10	0.39	0.58
	Total Organic	194	5.18	4.09	0.48	4.70	5.66
D01	Packaging/ Glass Containers	-	-	-	-	-	-
D0121	Packaging/ Cullet White	194	0.20	0.36	0.04	0.16	0.24
D0122	Packaging/ Cullet Green	194	0.04	0.20	0.02	0.02	0.07
D0123	Packaging/ Cullet Brown	194	0.09	0.38	0.05	0.04	0.13
Total	Glass Packaging	194	0.33	0.61	0.07	0.26	0.40
D050	Mixed Glass / Fines	194	0.00	0.00	0.00	0.00	0.00
D02	Miscellaneous/Other Glass	194	0.06	0.24	0.03	0.03	0.09
Total	Glass Fines Other	194	0.06	0.24	0.03	0.03	0.09
	Total Glass	194	0.39	0.68	0.08	0.31	0.47
E01	PET	194	0.06	0.09	0.01	0.05	0.07
E02	HDPE	194	0.04	0.06	0.01	0.03	0.05
E03	PVC	194	0.02	0.04	0.00	0.01	0.02
E04	LDPE	194	0.03	0.09	0.01	0.02	0.04
E05	Polypropylene	194	0.07	0.09	0.01	0.06	0.08
E06	Polystyrene	194	0.06	0.08	0.01	0.05	0.07
E07	Other Plastic	194	0.18	0.26	0.03	0.15	0.21
E071	Foams	194	0.00	0.03	0.00	0.00	0.01
E072	Plastic Bags	194	0.22	0.18	0.02	0.19	0.24
E073	Film	194	0.37	0.26	0.03	0.33	0.40
E08	Composite (mostly plastic)	194	0.13	0.32	0.04	0.09	0.16
	Total Plastic	194	1.16	0.75	0.09	1.07	1.25
F01	Steel Food and Pet Cans	194	0.11	0.16	0.02	0.09	0.13
F011	Steel Aerosols	194	0.03	0.09	0.01	0.02	0.05
F012	Steel Paint Cans	194	0.00	0.03	0.00	0.00	0.01
Total	Steel Packaging	194	0.15	0.19	0.02	0.12	0.17
F03	Composite (mostly ferrous)	194	0.02	0.13	0.02	0.00	0.04
F02	Other ferrous (specify)	194	0.21	1.82	0.21	0.00	0.42
Total	Other Steel	194	0.23	1.92	0.23	0.00	0.45
	Total Ferrous	194	0.37	1.92	0.23	0.15	0.60
G01	Aluminium (Cans & Foil)	194	0.05	0.08	0.01	0.04	0.06
Total	Aluminium Packaging	194	0.05	0.08	0.01	0.04	0.06
G03	Composite (mostly non-ferrous)	194	0.01	0.06	0.01	0.00	0.01
G02	Other metal (specify)	194	0.00	0.02	0.00	0.00	0.01
Total	Other Non-Ferrous	194	0.01	0.06	0.01	0.00	0.02
	Total Non-Ferrous	194	0.06	0.11	0.01	0.05	0.08
H01	Paint	194	0.00	0.00	0.00	0.00	0.00
H02	Fluorescent tubes *	194	0.00	0.01	0.00	0.00	0.00
H03	Dry cell batteries *	194	0.01	0.05	0.01	0.01	0.02
H04	Car batteries *	194	0.00	0.00	0.00	0.00	0.00
H05	Household chemicals	194	0.09	0.76	0.09	0.00	0.18
H06	Asbestos / Building Materials	194	0.39	2.97	0.35	0.04	0.74
H07	Pathogenic Infectious	194	0.00	0.03	0.00	0.00	0.01
-	Gas Bottles *	194	0.00	0.00	0.00	0.00	0.00
-	Hazardous Other	194	0.00	0.00	0.00	0.00	0.00
	Total Hazardous	194	0.49	3.07	0.36	0.13	0.86
I01	Ceramics	194	0.09	0.54	0.06	0.03	0.15
I02	Dust/Dirt/Rock/Inert	194	0.16	0.86	0.10	0.06	0.26
I03	Ash / Earth Based Other	194	0.04	0.55	0.06	0.00	0.10
	Total Earth Based	194	0.29	1.13	0.13	0.15	0.42
Q53	Other Household Items	194	0.01	0.09	0.01	0.00	0.02
Y57	Toner Cartridges *	194	0.00	0.00	0.00	0.00	0.00
-	Computer Equipment *	194	0.00	0.04	0.00	0.00	0.01
-	Mobile Phones *	194	0.00	0.00	0.00	0.00	0.00
-	Electrical Items *	194	0.14	0.52	0.06	0.08	0.20
XX00	Other material (specify)	194	0.09	0.44	0.05	0.04	0.15
	Total Other	194	0.25	0.71	0.08	0.17	0.34
	Total weight	194	10.31	6.84	0.81	9.50	11.12

Table 13 - Single-dwelling Confidence Intervals –Recycling Stream

AWD Code	Material	n	Average	St dev	CI	Lower CI	Upper CI
A01	Newspaper	129	1.43	1.60	0.23	1.19	1.66
A02	Magazines/brochures	129	0.89	1.01	0.15	0.74	1.03
A03	Miscellaneous Packaging	129	0.00	0.01	0.00	0.00	0.00
A04	Corrugated Cardboard	129	0.53	0.68	0.10	0.43	0.63
A05	Package Board	129	0.24	0.22	0.03	0.21	0.27
A06	Liquid Paper Containers	129	0.04	0.11	0.02	0.02	0.05
A07	Disposable Paper Product	129	0.01	0.05	0.01	0.01	0.02
A08	Print/ Writing/ Office Paper	129	0.43	0.76	0.11	0.32	0.54
Total	Recyclable Paper	129	3.56	2.01	0.29	3.27	3.86
A09	Composite (mainly paper)	129	0.00	0.03	0.00	0.00	0.01
A90	Nappies Disposable	129	0.00	0.00	0.00	0.00	0.00
A092	Contaminated Soiled Paper	129	0.06	0.22	0.03	0.03	0.09
Total	Non Recyclable (Composite)	129	0.06	0.23	0.03	0.03	0.10
	Total Paper	129	3.63	2.00	0.29	3.34	3.92
B01	Food/Kitchen	129	0.02	0.13	0.02	0.00	0.04
B02	Garden/Vegetation	129	0.00	0.01	0.00	0.00	0.00
B03	Other Putrescible	129	0.00	0.02	0.00	0.00	0.00
Total	Organic (Compostables)	129	0.02	0.13	0.02	0.00	0.04
C01	Wood/Timber	129	0.00	0.00	0.00	0.00	0.00
C02	Textile/Rags	129	0.04	0.25	0.04	0.01	0.08
C03	Leather	129	0.00	0.00	0.00	0.00	0.00
C04	Rubber	129	0.00	0.00	0.00	0.00	0.00
C05	Oils	129	0.00	0.02	0.00	0.00	0.01
Total	Other Organics	129	0.05	0.25	0.04	0.01	0.08
	Total Organic	129	0.07	0.28	0.04	0.03	0.11
D01	Packaging/ Glass Containers	-	-	-	-	-	-
D0121	Packaging/ Cullet White	129	1.04	1.71	0.25	0.79	1.28
D0122	Packaging/ Cullet Green	129	0.72	1.25	0.18	0.53	0.90
D0123	Packaging/ Cullet Brown	129	0.81	1.45	0.21	0.60	1.02
Total	Glass Packaging	129	2.56	3.03	0.44	2.12	3.00
D050	Mixed Glass / Fines	129	0.00	0.00	0.00	0.00	0.00
D02	Miscellaneous/Other Glass	129	0.00	0.04	0.01	0.00	0.01
Total	Glass Fines Other	129	0.00	0.04	0.01	0.00	0.01
	Total Glass	129	2.56	3.03	0.44	2.13	3.00
E01	PET	129	0.16	0.15	0.02	0.14	0.18
E02	HDPE	129	0.13	0.16	0.02	0.10	0.15
E03	PVC	129	0.01	0.02	0.00	0.00	0.01
E04	LDPE	129	0.00	0.02	0.00	0.00	0.01
E05	Polypropylene	129	0.01	0.04	0.01	0.00	0.01
E06	Polystyrene	129	0.00	0.02	0.00	0.00	0.01
E07	Other Plastic	129	0.08	0.16	0.02	0.06	0.10
E071	Foams	129	0.00	0.01	0.00	0.00	0.00
E072	Plastic Bags	129	0.00	0.03	0.00	0.00	0.01
E073	Film	129	0.02	0.06	0.01	0.01	0.03
E08	Composite (mostly plastic)	129	0.03	0.25	0.04	0.00	0.06
	Total Plastic	129	0.44	0.37	0.05	0.39	0.49
F01	Steel Food and Pet Cans	129	0.12	0.18	0.03	0.09	0.15
F011	Steel Aerosols	129	0.00	0.03	0.00	0.00	0.01
F012	Steel Paint Cans	129	0.00	0.00	0.00	0.00	0.00
Total	Steel Packaging	129	0.13	0.19	0.03	0.10	0.15
F03	Composite (mostly ferrous)	129	0.00	0.00	0.00	0.00	0.00
F02	Other ferrous (specify)	129	0.00	0.00	0.00	0.00	0.00
Total	Other Steel	129	0.00	0.00	0.00	0.00	0.00
	Total Ferrous	129	0.13	0.19	0.03	0.10	0.15
G01	Aluminium (Cans & Foil)	129	0.04	0.09	0.01	0.03	0.06
Total	Aluminium Packaging	129	0.04	0.09	0.01	0.03	0.06
G03	Composite (mostly non-ferrous)	129	0.00	0.00	0.00	0.00	0.00
G02	Other metal (specify)	129	0.00	0.00	0.00	0.00	0.00
Total	Other Non-Ferrous	129	0.00	0.00	0.00	0.00	0.00
	Total Non-Ferrous	129	0.04	0.09	0.01	0.03	0.06
H01	Paint	129	0.00	0.00	0.00	0.00	0.00
H02	Fluorescent tubes *	129	0.00	0.04	0.01	0.00	0.01
H03	Dry cell batteries *	129	0.00	0.00	0.00	0.00	0.00
H04	Car batteries *	129	0.00	0.00	0.00	0.00	0.00
H05	Household chemicals	129	0.00	0.00	0.00	0.00	0.00
H06	Asbestos / Building Materials	129	0.06	0.68	0.10	0.00	0.16
H07	Pathogenic Infectious	129	0.00	0.00	0.00	0.00	0.00
-	Gas Bottles *	129	0.00	0.00	0.00	0.00	0.00
-	Hazardous Other	129	0.00	0.00	0.00	0.00	0.00
	Total Hazardous	129	0.06	0.68	0.10	0.00	0.16
I01	Ceramics	129	0.01	0.06	0.01	0.00	0.01
I02	Dust/Dirt/Rock/Inert	129	0.00	0.00	0.00	0.00	0.00
I03	Ash / Earth Based Other	129	0.00	0.00	0.00	0.00	0.00
	Total Earth Based	129	0.01	0.06	0.01	0.00	0.01
Q53	Other Household Items	129	0.00	0.01	0.00	0.00	0.00
Y57	Toner Cartridges *	129	0.00	0.00	0.00	0.00	0.00
-	Computer Equipment *	129	0.00	0.00	0.00	0.00	0.00
-	Mobile Phones *	129	0.00	0.00	0.00	0.00	0.00
-	Electrical Items *	129	0.02	0.17	0.02	0.00	0.04
XX00	Other material (specify)	129	0.00	0.00	0.00	0.00	0.00
	Total Other	129	0.02	0.17	0.02	0.00	0.04
	Total weight	129	6.96	3.92	0.57	6.39	7.52

Table 14 - Single-dwelling Confidence Intervals – Green Waste Stream

AWD Code	Material	n	Average	St dev	CI	Lower CI	Upper CI
A01	Newspaper	141	0.02	0.10	0.01	0.00	0.03
A02	Magazines/brochures	141	0.00	0.03	0.00	0.00	0.01
A03	Miscellaneous Packaging	141	0.00	0.01	0.00	0.00	0.00
A04	Corrugated Cardboard	141	0.00	0.02	0.00	0.00	0.01
A05	Package Board	141	0.00	0.02	0.00	0.00	0.00
A06	Liquid Paper Containers	141	0.00	0.01	0.00	0.00	0.00
A07	Disposable Paper Product	141	0.00	0.00	0.00	0.00	0.00
A08	Print/ Writing/ Office Paper	141	0.00	0.00	0.00	0.00	0.00
Total	Recyclable Paper	141	0.03	0.14	0.02	0.01	0.05
A09	Composite (mainly paper)	141	0.00	0.01	0.00	0.00	0.00
A90	Nappies Disposable	141	0.00	0.06	0.01	0.00	0.01
A092	Contaminated Soiled Paper	141	0.01	0.07	0.01	0.00	0.02
Total	Non Recyclable (Composite)	141	0.02	0.11	0.01	0.00	0.03
	Total Paper	141	0.05	0.23	0.03	0.01	0.08
B01	Food/Kitchen	141	0.02	0.14	0.02	0.00	0.04
B02	Garden/Vegetation	141	12.01	6.80	0.94	11.07	12.95
B03	Other Putrescible	141	0.03	0.10	0.01	0.01	0.04
Total	Organic (Compostables)	141	12.06	6.81	0.94	11.11	13.00
C01	Wood/Timber	141	0.14	1.00	0.14	0.00	0.27
C02	Textile/Rags	141	0.01	0.04	0.01	0.00	0.01
C03	Leather	141	0.00	0.00	0.00	0.00	0.00
C04	Rubber	141	0.00	0.02	0.00	0.00	0.00
C05	Oils	141	0.00	0.00	0.00	0.00	0.00
Total	Other Organics	141	0.14	1.00	0.14	0.00	0.28
	Total Organic	141	12.20	6.78	0.94	11.26	13.14
D01	Packaging/ Glass Containers	-	-	-	-	-	-
D0121	Packaging/ Cullet White	141	0.00	0.00	0.00	0.00	0.00
D0122	Packaging/ Cullet Green	141	0.00	0.01	0.00	0.00	0.00
D0123	Packaging/ Cullet Brown	141	0.00	0.00	0.00	0.00	0.00
Total	Glass Packaging	141	0.00	0.01	0.00	0.00	0.00
D050	Mixed Glass / Fines	141	0.00	0.01	0.00	0.00	0.00
D02	Miscellaneous/Other Glass	141	0.00	0.00	0.00	0.00	0.00
Total	Glass Fines Other	141	0.00	0.01	0.00	0.00	0.00
	Total Glass	141	0.00	0.01	0.00	0.00	0.00
E01	PET	141	0.00	0.00	0.00	0.00	0.00
E02	HDPE	141	0.00	0.00	0.00	0.00	0.00
E03	PVC	141	0.00	0.00	0.00	0.00	0.00
E04	LDPE	141	0.00	0.00	0.00	0.00	0.00
E05	Polypropylene	141	0.00	0.01	0.00	0.00	0.00
E06	Polystyrene	141	0.00	0.00	0.00	0.00	0.00
E07	Other Plastic	141	0.02	0.14	0.02	0.01	0.04
E071	Foams	141	0.00	0.00	0.00	0.00	0.00
E072	Plastic Bags	141	0.01	0.04	0.01	0.00	0.01
E073	Film	141	0.01	0.01	0.00	0.00	0.01
E08	Composite (mostly plastic)	141	0.00	0.04	0.00	0.00	0.01
	Total Plastic	141	0.04	0.22	0.03	0.01	0.07
F01	Steel Food and Pet Cans	141	0.00	0.00	0.00	0.00	0.00
F011	Steel Aerosols	141	0.00	0.00	0.00	0.00	0.00
F012	Steel Paint Cans	141	0.00	0.00	0.00	0.00	0.00
Total	Steel Packaging	141	0.00	0.00	0.00	0.00	0.00
F03	Composite (mostly ferrous)	141	0.00	0.00	0.00	0.00	0.00
F02	Other ferrous (specify)	141	0.00	0.01	0.00	0.00	0.00
Total	Other Steel	141	0.00	0.01	0.00	0.00	0.00
	Total Ferrous	141	0.00	0.01	0.00	0.00	0.00
G01	Aluminium (Cans & Foil)	141	0.00	0.00	0.00	0.00	0.00
Total	Aluminium Packaging	141	0.00	0.00	0.00	0.00	0.00
G03	Composite (mostly non-ferrous)	141	0.00	0.00	0.00	0.00	0.00
G02	Other metal (specify)	141	0.00	0.00	0.00	0.00	0.00
Total	Other Non-Ferrous	141	0.00	0.00	0.00	0.00	0.00
	Total Non-Ferrous	141	0.00	0.01	0.00	0.00	0.00
H01	Paint	141	0.00	0.00	0.00	0.00	0.00
H02	Fluorescent tubes *	141	0.00	0.00	0.00	0.00	0.00
H03	Dry cell batteries *	141	0.00	0.00	0.00	0.00	0.00
H04	Car batteries *	141	0.00	0.00	0.00	0.00	0.00
H05	Household chemicals	141	0.00	0.00	0.00	0.00	0.00
H06	Asbestos / Building Materials	141	0.00	0.00	0.00	0.00	0.00
H07	Pathogenic Infectious	141	0.00	0.00	0.00	0.00	0.00
-	Gas Bottles *	141	0.00	0.00	0.00	0.00	0.00
-	Hazardous Other	141	0.00	0.00	0.00	0.00	0.00
	Total Hazardous	141	0.00	0.00	0.00	0.00	0.00
I01	Ceramics	141	0.00	0.01	0.00	0.00	0.00
I02	Dust/Dirt/Rock/Inert	141	0.03	0.14	0.02	0.01	0.05
I03	Ash / Earth Based Other	141	0.00	0.00	0.00	0.00	0.00
	Total Earth Based	141	0.03	0.15	0.02	0.01	0.05
Q53	Other Household Items	141	0.00	0.00	0.00	0.00	0.00
Y57	Toner Cartridges *	141	0.00	0.00	0.00	0.00	0.00
-	Computer Equipment *	141	0.00	0.00	0.00	0.00	0.00
-	Mobile Phones *	141	0.00	0.00	0.00	0.00	0.00
-	Electrical Items *	141	0.00	0.00	0.00	0.00	0.00
XX00	Other material (specify)	141	0.03	0.17	0.02	0.01	0.06
	Total Other	141	0.03	0.17	0.02	0.01	0.06
	Total weight	141	12.36	6.81	0.94	11.42	13.30

Table 15 - Multi Unit-dwelling Confidence Intervals – Garbage Stream

AWD Code	Material	n (1)	Average (2)	St dev (2)	CI (2)	Lower CI (2)	Upper CI (2)
A01	Newspaper	4	0.07	0.06	0.05	0.01	0.12
A02	Magazines/brochures	4	0.06	0.06	0.05	0.01	0.10
A03	Miscellaneous Packaging	4	0.01	0.01	0.01	0.00	0.02
A04	Corrugated Cardboard	4	0.03	0.03	0.02	0.00	0.05
A05	Package Board	4	0.08	0.03	0.03	0.05	0.10
A06	Liquid Paper Containers	4	0.02	0.01	0.01	0.00	0.03
A07	Disposable Paper Product	4	0.01	0.01	0.01	0.00	0.02
A08	Print/ Writing/ Office Paper	4	0.03	0.04	0.03	0.00	0.06
Total	Recyclable Paper	4	0.29	0.16	0.13	0.15	0.42
A09	Composite (mainly paper)	4	0.00	0.01	0.01	0.00	0.01
A90	Nappies Disposable	4	0.08	0.17	0.14	0.00	0.22
A092	Contaminated Soiled Paper	4	0.31	0.14	0.12	0.20	0.43
Total	Non Recyclable (Composite)	4	0.40	0.10	0.08	0.32	0.48
	Total Paper	4	0.69	0.18	0.15	0.54	0.84
B01	Food/Kitchen	4	1.70	0.51	0.42	1.29	2.12
B02	Garden/Vegetation	4	0.02	0.04	0.03	0.00	0.06
B03	Other Putrescible	4	0.00	0.00	0.00	0.00	0.00
Total	Organic (Compostables)	4	1.73	0.52	0.43	1.30	2.16
C01	Wood/Timber	4	0.00	0.01	0.01	0.00	0.01
C02	Textile/Rags	4	0.09	0.10	0.09	0.00	0.17
C03	Leather	4	0.00	0.01	0.00	0.00	0.01
C04	Rubber	4	0.01	0.01	0.00	0.00	0.01
C05	Oils	4	0.01	0.01	0.01	0.00	0.02
Total	Other Organics	4	0.11	0.12	0.10	0.01	0.20
	Total Organic	4	1.84	0.63	0.52	1.32	2.35
D01	Packaging/ Glass Containers	-	-	-	-	-	-
D0121	Packaging/ Cullet White	4	0.08	0.05	0.04	0.05	0.12
D0122	Packaging/ Cullet Green	4	0.11	0.14	0.12	0.00	0.23
D0123	Packaging/ Cullet Brown	4	0.11	0.17	0.14	0.00	0.24
Total	Glass Packaging	4	0.30	0.20	0.16	0.14	0.47
D050	Mixed Glass / Fines	4	0.00	0.00	0.00	0.00	0.00
D02	Miscellaneous/Other Glass	4	0.00	0.00	0.00	0.00	0.01
Total	Glass Fines Other	4	0.00	0.00	0.00	0.00	0.01
	Total Glass	4	0.31	0.20	0.16	0.14	0.47
E01	PET	4	0.03	0.01	0.01	0.02	0.03
E02	HDPE	4	0.01	0.01	0.01	0.00	0.02
E03	PVC	4	0.01	0.01	0.01	0.00	0.02
E04	LDPE	4	0.00	0.00	0.00	0.00	0.00
E05	Polypropylene	4	0.02	0.01	0.01	0.01	0.03
E06	Polystyrene	4	0.03	0.02	0.01	0.01	0.04
E07	Other Plastic	4	0.06	0.02	0.01	0.04	0.07
E071	Foams	4	0.00	0.00	0.00	0.00	0.00
E072	Plastic Bags	4	0.09	0.04	0.03	0.05	0.12
E073	Film	4	0.11	0.05	0.04	0.07	0.15
E08	Composite (mostly plastic)	4	0.05	0.08	0.07	0.00	0.12
	Total Plastic	4	0.40	0.20	0.16	0.24	0.57
F01	Steel Food and Pet Cans	4	0.03	0.03	0.03	0.01	0.06
F011	Steel Aerosols	4	0.01	0.01	0.01	0.00	0.03
F012	Steel Paint Cans	4	0.00	0.01	0.01	0.00	0.01
Total	Steel Packaging	4	0.05	0.04	0.04	0.02	0.09
F03	Composite (mostly ferrous)	4	0.00	0.00	0.00	0.00	0.00
F02	Other ferrous (specify)	4	0.00	0.00	0.00	0.00	0.00
Total	Other Steel	4	0.00	0.00	0.00	0.00	0.00
	Total Ferrous	4	0.05	0.04	0.04	0.02	0.09
G01	Aluminium (Cans & Foil)	4	0.02	0.01	0.01	0.02	0.03
Total	Aluminium Packaging	4	0.02	0.01	0.01	0.02	0.03
G03	Composite (mostly non-ferrous)	4	0.01	0.02	0.02	0.00	0.03
G02	Other metal (specify)	4	0.00	0.00	0.00	0.00	0.00
Total	Other Non-Ferrous	4	0.01	0.02	0.02	0.00	0.03
	Total Non-Ferrous	4	0.04	0.03	0.02	0.02	0.06
H01	Paint	4	0.00	0.00	0.00	0.00	0.00
H02	Fluorescent tubes *	4	0.00	0.00	0.00	0.00	0.00
H03	Dry cell batteries *	4	0.00	0.00	0.00	0.00	0.01
H04	Car batteries *	4	0.00	0.00	0.00	0.00	0.00
H05	Household chemicals	4	0.02	0.03	0.03	0.00	0.05
H06	Asbestos / Building Materials	4	0.00	0.00	0.00	0.00	0.00
H07	Pathogenic Infectious	4	0.00	0.00	0.00	0.00	0.00
-	Gas Bottles *	4	0.00	0.00	0.00	0.00	0.00
-	Hazardous Other	4	0.00	0.00	0.00	0.00	0.00
	Total Hazardous	4	0.03	0.03	0.03	0.00	0.05
I01	Ceramics	4	0.06	0.09	0.08	0.00	0.14
I02	Dust/Dirt/Rock/Inert	4	0.02	0.01	0.01	0.01	0.03
I03	Ash / Earth Based Other	4	0.00	0.00	0.00	0.00	0.00
	Total Earth Based	4	0.08	0.09	0.07	0.00	0.15
Q53	Other Household Items	4	0.01	0.02	0.02	0.00	0.03
Y57	Toner Cartridges *	4	0.00	0.00	0.00	0.00	0.00
-	Computer Equipment *	4	0.00	0.00	0.00	0.00	0.00
-	Mobile Phones *	4	0.00	0.00	0.00	0.00	0.00
-	Electrical Items *	4	0.03	0.03	0.02	0.00	0.05
XX00	Other material (specify)	4	0.02	0.03	0.03	0.00	0.04
	Total Other	4	0.06	0.06	0.05	0.00	0.11
	Total weight	4	3.49	1.32	1.09	2.40	4.57

Table 16 - Multi Unit-dwelling Confidence Intervals –Recycling Stream

AWD Code	Material	n (1)	Average (2)	St dev (2)	CI (2)	Lower CI (2)	Upper CI (2)
A01	Newspaper	2	0.21	0.25	0.29	0.00	0.51
A02	Magazines/brochures	2	0.08	0.11	0.13	0.00	0.21
A03	Miscellaneous Packaging	2	0.01	0.01	0.01	0.00	0.02
A04	Corrugated Cardboard	2	0.15	0.00	0.00	0.14	0.15
A05	Package Board	2	0.05	0.01	0.01	0.04	0.06
A06	Liquid Paper Containers	2	0.00	0.01	0.01	0.00	0.01
A07	Disposable Paper Product	2	0.00	0.00	0.00	0.00	0.00
A08	Print/ Writing/ Office Paper	2	0.02	0.03	0.03	0.00	0.05
Total	Recyclable Paper	2	0.52	0.42	0.48	0.03	1.00
A09	Composite (mainly paper)	2	0.00	0.00	0.00	0.00	0.00
A90	Nappies Disposable	2	0.00	0.00	0.00	0.00	0.00
A092	Contaminated Soiled Paper	2	0.02	0.02	0.03	0.00	0.05
Total	Non Recyclable (Composite)	2	0.02	0.02	0.03	0.00	0.05
	Total Paper	2	0.54	0.39	0.45	0.08	0.99
B01	Food/Kitchen	2	0.00	0.00	0.00	0.00	0.00
B02	Garden/Vegetation	2	0.00	0.00	0.00	0.00	0.00
B03	Other Putrescible	2	0.00	0.00	0.00	0.00	0.00
Total	Organic (Compostables)	2	0.00	0.00	0.00	0.00	0.00
C01	Wood/Timber	2	0.02	0.02	0.03	0.00	0.04
C02	Textile/Rags	2	0.00	0.00	0.00	0.00	0.00
C03	Leather	2	0.00	0.00	0.00	0.00	0.00
C04	Rubber	2	0.00	0.00	0.00	0.00	0.00
C05	Oils	2	0.00	0.00	0.00	0.00	0.00
Total	Other Organics	2	0.02	0.02	0.03	0.00	0.04
	Total Organic	2	0.02	0.02	0.03	0.00	0.04
D01	Packaging/ Glass Containers	-	-	-	-	-	-
D0121	Packaging/ Cullet White	2	0.14	0.10	0.11	0.03	0.25
D0122	Packaging/ Cullet Green	2	0.16	0.06	0.07	0.09	0.23
D0123	Packaging/ Cullet Brown	2	0.36	0.24	0.27	0.09	0.64
Total	Glass Packaging	2	0.66	0.39	0.46	0.21	1.12
D050	Mixed Glass / Fines	2	0.00	0.00	0.00	0.00	0.00
D02	Miscellaneous/Other Glass	2	0.00	0.00	0.00	0.00	0.00
Total	Glass Fines Other	2	0.00	0.00	0.00	0.00	0.00
	Total Glass	2	0.66	0.39	0.46	0.21	1.12
E01	PET	2	0.06	0.00	0.00	0.06	0.06
E02	HDPE	2	0.03	0.00	0.00	0.03	0.03
E03	PVC	2	0.00	0.00	0.01	0.00	0.01
E04	LDPE	2	0.00	0.00	0.00	0.00	0.00
E05	Polypropylene	2	0.00	0.00	0.00	0.00	0.00
E06	Polystyrene	2	0.00	0.00	0.00	0.00	0.00
E07	Other Plastic	2	0.04	0.03	0.03	0.00	0.07
E071	Foams	2	0.00	0.00	0.00	0.00	0.00
E072	Plastic Bags	2	0.00	0.00	0.00	0.00	0.00
E073	Film	2	0.00	0.00	0.00	0.00	0.00
E08	Composite (mostly plastic)	2	0.00	0.00	0.00	0.00	0.00
	Total Plastic	2	0.14	0.02	0.03	0.11	0.16
F01	Steel Food and Pet Cans	2	0.06	0.04	0.04	0.01	0.10
F011	Steel Aerosols	2	0.00	0.00	0.00	0.00	0.00
F012	Steel Paint Cans	2	0.00	0.00	0.00	0.00	0.00
Total	Steel Packaging	2	0.06	0.04	0.04	0.01	0.10
F03	Composite (mostly ferrous)	2	0.00	0.00	0.00	0.00	0.00
F02	Other ferrous (specify)	2	0.00	0.00	0.00	0.00	0.00
Total	Other Steel	2	0.00	0.00	0.00	0.00	0.00
	Total Ferrous	2	0.06	0.04	0.04	0.01	0.10
G01	Aluminium (Cans & Foil)	2	0.01	0.02	0.02	0.00	0.03
Total	Aluminium Packaging	2	0.01	0.02	0.02	0.00	0.03
G03	Composite (mostly non-ferrous)	2	0.00	0.00	0.00	0.00	0.00
G02	Other metal (specify)	2	0.00	0.00	0.00	0.00	0.00
Total	Other Non-Ferrous	2	0.00	0.00	0.00	0.00	0.00
	Total Non-Ferrous	2	0.01	0.02	0.02	0.00	0.03
H01	Paint	2	0.00	0.00	0.00	0.00	0.00
H02	Fluorescent tubes *	2	0.00	0.00	0.00	0.00	0.00
H03	Dry cell batteries *	2	0.00	0.00	0.00	0.00	0.00
H04	Car batteries *	2	0.00	0.00	0.00	0.00	0.00
H05	Household chemicals	2	0.00	0.00	0.00	0.00	0.00
H06	Asbestos / Building Materials	2	0.00	0.00	0.00	0.00	0.00
H07	Pathogenic Infectious	2	0.00	0.00	0.00	0.00	0.00
-	Gas Bottles *	2	0.00	0.00	0.00	0.00	0.00
-	Hazardous Other	2	0.00	0.00	0.00	0.00	0.00
	Total Hazardous	2	0.00	0.00	0.00	0.00	0.00
I01	Ceramics	2	0.01	0.01	0.01	0.00	0.02
I02	Dust/Dirt/Rock/Inert	2	0.00	0.00	0.00	0.00	0.00
I03	Ash / Earth Based Other	2	0.00	0.00	0.00	0.00	0.00
	Total Earth Based	2	0.01	0.01	0.01	0.00	0.02
Q53	Other Household Items	2	0.00	0.00	0.00	0.00	0.00
Y57	Toner Cartridges *	2	0.00	0.00	0.00	0.00	0.00
-	Computer Equipment *	2	0.00	0.00	0.00	0.00	0.00
-	Mobile Phones *	2	0.00	0.00	0.00	0.00	0.00
-	Electrical Items *	2	0.01	0.02	0.02	0.00	0.03
XX00	Other material (specify)	2	0.00	0.00	0.00	0.00	0.00
	Total Other	2	0.01	0.02	0.02	0.00	0.03
	Total weight	2	1.44	0.13	0.15	1.29	1.60

APPENDIX C

SUMMARY DATA FOR DOMESTIC WASTE STREAM

A. RESULTS FOR SINGLE DWELLINGS

PER WEEK

Total single dwellings in sample: 194**Table 1. Composition of the domestic garbage stream**

Material	Amount (kg)	Per cent	Average per h/hold
Newspaper	16.8	0.8%	0.09
Magazines / brochures	17.6	0.9%	0.09
Miscellaneous Packaging	1.0	0.1%	0.01
Corrugated Cardboard	13.2	0.7%	0.07
Package Board	31.0	1.5%	0.16
Liquid Paper Containers	5.1	0.3%	0.03
Disposable Paper Product	4.5	0.2%	0.02
Print / Writing / Office Paper	21.2	1.1%	0.11
Composite (mostly paper)	3.2	0.2%	0.02
Nappies	130.9	6.5%	0.67
Contaminated Soiled Paper	163.6	8.2%	0.84
Food / Kitchen	754.5	37.7%	3.89
Garden / Vegetation	77.2	3.9%	0.40
Other Putrescible	79.4	4.0%	0.41
Wood / Timber	21.0	1.0%	0.11
Textile / Rags / Carpet	51.3	2.6%	0.26
Leather	11.6	0.6%	0.06
Rubber	6.1	0.3%	0.03
Oils	4.0	0.2%	0.02
Glass clear containers	38.7	1.9%	0.20
Glass green containers	8.5	0.4%	0.04
Glass brown / blue containers	16.5	0.8%	0.09
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	12.1	0.6%	0.06
PET #1	11.1	0.6%	0.06
HDPE #2	7.5	0.4%	0.04
PVC #3	3.6	0.2%	0.02
LDPE #4	6.0	0.3%	0.03
Polypropylene #5	13.1	0.7%	0.07
Polystyrene #6	11.9	0.6%	0.06
Other Plastic	34.3	1.7%	0.18
Foams	0.7	0.0%	0.00
Plastic Bags	41.8	2.1%	0.22
Film	70.8	3.5%	0.37
Composite (mostly plastic)	24.7	1.2%	0.13
Steel Cans Food & Pet	21.3	1.1%	0.11
Steel Aerosols	6.8	0.3%	0.03
Steel Paint Cans	0.4	0.0%	0.00
Composite (mostly ferrous)	4.0	0.2%	0.02
Other ferrous	40.0	2.0%	0.21
Aluminium	10.6	0.5%	0.05
Composite (mostly non-ferrous)	1.2	0.1%	0.01
Other Non-Ferrous	0.6	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.3	0.0%	0.00
Dry cell batteries	2.9	0.1%	0.01
Car batteries	0.0	0.0%	0.00
Household chemicals	16.8	0.8%	0.09
Building Materials	75.0	3.8%	0.39
Pathogenic Infectious	0.6	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.1	0.0%	0.00
Ceramics	17.3	0.9%	0.09
Dust / Dirt / Rock / Inert	31.0	1.5%	0.16
Ash / Earth Based	7.7	0.4%	0.04
Other Household Items	2.6	0.1%	0.01
Toner Cartridges	0.1	0.0%	0.00
Computer Equipment	0.5	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	27.4	1.4%	0.14
Other	18.3	0.9%	0.09
Total	1,999.7	100.0%	10.31

A. RESULTS FOR SINGLE DWELLINGS

PER WEEK

Total single dwellings in sample: 129**Table 2. Composition of the recycling stream**

Material	Amount (kg)	Per cent	Average per h/hold
Newspaper	184.0	20.5%	1.43
Magazines / brochures	114.2	12.7%	0.89
Miscellaneous Packaging	0.2	0.0%	0.00
Corrugated Cardboard	68.3	7.6%	0.53
Package Board	31.3	3.5%	0.24
Liquid Paper Containers	4.7	0.5%	0.04
Disposable Paper Product	1.6	0.2%	0.01
Print / Writing / Office Paper	55.5	6.2%	0.43
Composite (mostly paper)	0.6	0.1%	0.00
Nappies	0.0	0.0%	0.00
Contaminated Soiled Paper	7.4	0.8%	0.06
Food / Kitchen	2.5	0.3%	0.02
Garden / Vegetation	0.2	0.0%	0.00
Other Putrescible	0.2	0.0%	0.00
Wood / Timber	0.0	0.0%	0.00
Textile / Rags / Carpet	5.6	0.6%	0.04
Leather	0.0	0.0%	0.00
Rubber	0.0	0.0%	0.00
Oils	0.4	0.0%	0.00
Glass clear containers	133.5	14.9%	1.03
Glass green containers	92.3	10.3%	0.72
Glass brown containers	104.7	11.7%	0.81
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	0.4	0.0%	0.00
PET #1	20.5	2.3%	0.16
HDPE #2	16.2	1.8%	0.13
PVC #3	0.9	0.1%	0.01
LDPE #4	0.4	0.0%	0.00
Polypropylene #5	1.2	0.1%	0.01
Polystyrene #6	0.5	0.1%	0.00
Other Plastic	10.3	1.1%	0.08
Foams	0.3	0.0%	0.00
Plastic Bags	0.6	0.1%	0.00
Film	2.6	0.3%	0.02
Composite (mostly plastic)	3.2	0.4%	0.02
Steel Cans Food & Pet	15.5	1.7%	0.12
Steel Aerosols	0.6	0.1%	0.00
Steel Paint Cans	0.0	0.0%	0.00
Composite (mostly ferrous)	0.0	0.0%	0.00
Other ferrous	0.0	0.0%	0.00
Aluminium	5.5	0.6%	0.04
Composite (mostly non-ferrous)	0.0	0.0%	0.00
Other Non-Ferrous	0.0	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.6	0.1%	0.00
Dry cell batteries	0.0	0.0%	0.00
Car batteries	0.0	0.0%	0.00
Household chemicals	0.0	0.0%	0.00
Building Materials	7.7	0.9%	0.06
Pathogenic Infectious	0.0	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.0	0.0%	0.00
Ceramics	0.7	0.1%	0.01
Dust / Dirt / Rock / Inert	0.0	0.0%	0.00
Ash / Earth Based	0.0	0.0%	0.00
Other Household Items	0.1	0.0%	0.00
Toner Cartridges	0.0	0.0%	0.00
Computer Equipment	0.0	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	2.3	0.3%	0.02
Other	0.0	0.0%	0.00
Total	897.3	100.0%	6.96

A. RESULTS FOR SINGLE DWELLINGS

PER WEEK

Total single dwellings in sample: 141**Table 3. Composition of the garden organics stream**

Material	Amount (kg)	Per cent	Average per h'hold
Newspaper	2.2	0.1%	0.02
Magazines / brochures	0.6	0.0%	0.00
Miscellaneous Packaging	0.1	0.0%	0.00
Corrugated Cardboard	0.5	0.0%	0.00
Package Board	0.3	0.0%	0.00
Liquid Paper Containers	0.1	0.0%	0.00
Disposable Paper Product	0.1	0.0%	0.00
Print / Writing / Office Paper	0.1	0.0%	0.00
Composite (mostly paper)	0.1	0.0%	0.00
Nappies	0.7	0.0%	0.00
Contaminated Soiled Paper	1.9	0.1%	0.01
Food / Kitchen	2.7	0.2%	0.02
Garden / Vegetation	1,693.4	97.1%	12.01
Other Putrescible	4.0	0.2%	0.03
Wood / Timber	19.1	1.1%	0.14
Textile / Rags / Carpet	0.9	0.1%	0.01
Leather	0.0	0.0%	0.00
Rubber	0.3	0.0%	0.00
Oils	0.0	0.0%	0.00
Glass clear containers	0.0	0.0%	0.00
Glass green containers	0.1	0.0%	0.00
Glass brown / blue containers	0.0	0.0%	0.00
Mixed Glass / Fines	0.1	0.0%	0.00
Miscellaneous / Other Glass	0.0	0.0%	0.00
PET #1	0.1	0.0%	0.00
HDPE #2	0.1	0.0%	0.00
PVC #3	0.0	0.0%	0.00
LDPE #4	0.0	0.0%	0.00
Polypropylene #5	0.2	0.0%	0.00
Polystyrene #6	0.1	0.0%	0.00
Other Plastic	3.4	0.2%	0.02
Foams	0.0	0.0%	0.00
Plastic Bags	1.0	0.1%	0.01
Film	0.7	0.0%	0.00
Composite (mostly plastic)	0.6	0.0%	0.00
Steel Cans Food & Pet	0.0	0.0%	0.00
Steel Aerosols	0.0	0.0%	0.00
Steel Paint Cans	0.0	0.0%	0.00
Composite (mostly ferrous)	0.0	0.0%	0.00
Other ferrous	0.1	0.0%	0.00
Aluminium	0.1	0.0%	0.00
Composite (mostly non-ferrous)	0.0	0.0%	0.00
Other Non-Ferrous	0.0	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.0	0.0%	0.00
Dry cell batteries	0.0	0.0%	0.00
Car batteries	0.0	0.0%	0.00
Household chemicals	0.0	0.0%	0.00
Building Materials	0.0	0.0%	0.00
Pathogenic Infectious	0.0	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.0	0.0%	0.00
Ceramics	0.1	0.0%	0.00
Dust / Dirt / Rock / Inert	4.5	0.3%	0.03
Ash / Earth Based	0.0	0.0%	0.00
Other Household Items	0.0	0.0%	0.00
Toner Cartridges	0.0	0.0%	0.00
Computer Equipment	0.0	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	0.0	0.0%	0.00
Other	4.8	0.3%	0.03
Total	1,743.1	100.0%	12.36

A. RESULTS FOR SINGLE DWELLINGS

PER WEEK

Kilograms per household per week

Table 4. Composition of the domestic waste stream

Material	Average kg per h/hold	Per cent
Newspaper	1.54	5.2%
Magazines / brochures	0.98	3.3%
Miscellaneous Packaging	0.01	0.0%
Corrugated Cardboard	0.60	2.0%
Package Board	0.40	1.4%
Liquid Paper Containers	0.07	0.2%
Disposable Paper Product	0.03	0.1%
Print / Writing / Office Paper	0.54	1.8%
Composite (mostly paper)	0.02	0.1%
Nappies	0.67	2.3%
Contaminated Soiled Paper	0.91	3.1%
Food / Kitchen	3.93	13.3%
Garden / Vegetation	12.41	41.9%
Other Putrescible	0.44	1.5%
Wood / Timber	0.25	0.8%
Textile / Rags / Carpet	0.31	1.0%
Leather	0.06	0.2%
Rubber	0.03	0.1%
Oils	0.02	0.1%
Glass clear containers	1.23	4.2%
Glass green containers	0.76	2.6%
Glass brown / blue containers	0.90	3.0%
Mixed Glass / Fines	0.00	0.0%
Miscellaneous / Other Glass	0.06	0.2%
PET #1	0.22	0.7%
HDPE #2	0.17	0.6%
PVC #3	0.03	0.1%
LDPE #4	0.03	0.1%
Polypropylene #5	0.08	0.3%
Polystyrene #6	0.06	0.2%
Other Plastic	0.28	0.9%
Foams	0.00	0.0%
Plastic Bags	0.23	0.8%
Film	0.39	1.3%
Composite (mostly plastic)	0.15	0.5%
Steel Cans Food & Pet	0.23	0.8%
Steel Aerosols	0.03	0.1%
Steel Paint Cans	0.00	0.0%
Composite (mostly ferrous)	0.02	0.1%
Other ferrous	0.21	0.7%
Aluminium	0.09	0.3%
Composite (mostly non-ferrous)	0.01	0.0%
Other Non-Ferrous	0.00	0.0%
Paint	0.00	0.0%
Fluorescent tubes	0.00	0.0%
Dry cell batteries	0.01	0.0%
Car batteries	0.00	0.0%
Household chemicals	0.09	0.3%
Building Materials	0.45	1.5%
Pathogenic Infectious	0.00	0.0%
Gas Bottles	0.00	0.0%
Hazardous Other	0.00	0.0%
Ceramics	0.10	0.3%
Dust / Dirt / Rock / Inert	0.19	0.6%
Ash / Earth Based	0.04	0.1%
Other Household Items	0.01	0.0%
Toner Cartridges	0.00	0.0%
Computer Equipment	0.00	0.0%
Mobile Phones	0.00	0.0%
Electrical Items	0.16	0.5%
Other	0.12	0.4%
Total	29.62	100.0%

A. RESULTS FOR SINGLE DWELLINGS*PER WEEK***Table 5. Summary of garbage and recycling**

Material	Amount (kg per h'hold)	Per cent
Recycled paper	3.56	12.0%
Recycled containers	3.04	10.3%
Contamination in recycling	0.35	1.2%
Recovered garden organics	12.15	41.0%
Contamination in garden organics	0.22	0.7%
Garbage: Potentially recyclable paper	0.57	1.9%
Garbage: Potentially recyclable containers	0.80	2.7%
Garbage: Garden organics	0.40	1.3%
Garbage: Food waste	3.89	13.1%
Garbage: Other non-recyclable	4.65	15.7%
Total waste stream	29.63	100.0%
Diversion rate		63.3%
Recycling contamination rate		5.0%
Garden organics contamination rate		1.8%
Possible diversion rates if the following materials were recycled:		
Garbage: Potentially recyclable		67.9%
PR + Garden organics		69.3%
PR + Garden organics + Food waste		81.9%

A. RESULTS FOR SINGLE DWELLINGS**Table 6. Recovery rates for major classes of materials**

Material	Recycled per household (kg)	In garbage per household (kg)	Total per household (kg)	Recovery Rate %
Aluminium cans & foil	0.043	0.055	0.098	43.9%
Glass	2.562	0.328	2.890	88.7%
Steel	0.125	0.147	0.272	46.0%
Paper	2.754	0.310	3.064	89.9%
Cardboard	0.774	0.233	1.007	76.9%
PET	0.159	0.057	0.216	73.6%
HDPE	0.126	0.039	0.165	76.4%
PVC	0.007	0.019	0.026	26.9%
LDPE	0.003	0.031	0.034	8.8%
Polypropylene	0.009	0.067	0.076	11.8%
Polystyrene	0.004	0.061	0.065	6.2%
Liquid paperboard	0.036	0.026	0.062	58.1%
Garden organics	12.145	0.398	12.543	96.8%
Overall	18.747	1.771	20.518	91.4%

B. RESULTS FOR MULTI-UNIT DWELLINGS

PER WEEK

Total units in sample: 65**Table 7. Composition of the domestic garbage stream**

Material	Amount (kg)	Per cent	Average per h/hold
Newspaper	4.2	1.9%	0.07
Magazines / brochures	3.7	1.6%	0.06
Miscellaneous Packaging	0.7	0.3%	0.01
Corrugated Cardboard	1.7	0.7%	0.03
Package Board	5.1	2.3%	0.08
Liquid Paper Containers	1.0	0.5%	0.02
Disposable Paper Product	0.4	0.2%	0.01
Print / Writing / Office Paper	2.0	0.9%	0.03
Composite (mostly paper)	0.2	0.1%	0.00
Nappies	5.5	2.4%	0.08
Contaminated Soiled Paper	20.4	9.0%	0.31
Food / Kitchen	110.8	48.9%	1.70
Garden / Vegetation	1.6	0.7%	0.02
Other Putrescible	0.0	0.0%	0.00
Wood / Timber	0.3	0.1%	0.00
Textile / Rags / Carpet	5.7	2.5%	0.09
Leather	0.3	0.1%	0.00
Rubber	0.3	0.2%	0.01
Oils	0.4	0.2%	0.01
Glass clear containers	5.4	2.4%	0.08
Glass green containers	7.4	3.2%	0.11
Glass brown / blue containers	6.8	3.0%	0.11
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	0.2	0.1%	0.00
PET #1	1.9	0.8%	0.03
HDPE #2	0.9	0.4%	0.01
PVC #3	0.6	0.3%	0.01
LDPE #4	0.1	0.0%	0.00
Polypropylene #5	1.4	0.6%	0.02
Polystyrene #6	1.7	0.8%	0.03
Other Plastic	3.7	1.6%	0.06
Foams	0.0	0.0%	0.00
Plastic Bags	5.6	2.5%	0.09
Film	7.2	3.2%	0.11
Composite (mostly plastic)	3.2	1.4%	0.05
Steel Cans Food & Pet	2.1	0.9%	0.03
Steel Aerosols	0.9	0.4%	0.01
Steel Paint Cans	0.3	0.1%	0.00
Composite (mostly ferrous)	0.0	0.0%	0.00
Other ferrous	0.0	0.0%	0.00
Aluminium	1.6	0.7%	0.02
Composite (mostly non-ferrous)	0.9	0.4%	0.01
Other Non-Ferrous	0.0	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.1	0.0%	0.00
Dry cell batteries	0.2	0.1%	0.00
Car batteries	0.0	0.0%	0.00
Household chemicals	1.4	0.6%	0.02
Building Materials	0.0	0.0%	0.00
Pathogenic Infectious	0.0	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.0	0.0%	0.00
Ceramics	3.8	1.7%	0.06
Dust / Dirt / Rock / Inert	1.2	0.5%	0.02
Ash / Earth Based	0.0	0.0%	0.00
Other Household Items	0.6	0.3%	0.01
Toner Cartridges	0.0	0.0%	0.00
Computer Equipment	0.0	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	1.9	0.8%	0.03
Other	1.0	0.5%	0.02
Total	226.6	100.0%	3.49

B. RESULTS FOR MULTI-UNIT DWELLINGS

PER WEEK

Total units in sample: 44**Table 8. Composition of the recycling stream**

Material	Amount (kg)	Per cent	Average per h'hold
Newspaper	9.3	14.6%	0.21
Magazines / brochures	3.6	5.7%	0.08
Miscellaneous Packaging	0.3	0.5%	0.01
Corrugated Cardboard	6.4	10.1%	0.15
Package Board	2.3	3.6%	0.05
Liquid Paper Containers	0.2	0.3%	0.00
Disposable Paper Product	0.0	0.0%	0.00
Print / Writing / Office Paper	0.8	1.3%	0.02
Composite (mostly paper)	0.0	0.0%	0.00
Nappies	0.0	0.0%	0.00
Contaminated Soiled Paper	0.8	1.3%	0.02
Food / Kitchen	0.0	0.0%	0.00
Garden / Vegetation	0.0	0.0%	0.00
Other Putrescible	0.0	0.0%	0.00
Wood / Timber	0.7	1.1%	0.02
Textile / Rags / Carpet	0.0	0.0%	0.00
Leather	0.0	0.0%	0.00
Rubber	0.0	0.0%	0.00
Oils	0.0	0.0%	0.00
Glass clear containers	6.1	9.6%	0.14
Glass green containers	7.2	11.3%	0.16
Glass brown containers	15.9	25.0%	0.36
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	0.0	0.0%	0.00
PET #1	2.8	4.4%	0.06
HDPE #2	1.5	2.4%	0.03
PVC #3	0.1	0.2%	0.00
LDPE #4	0.0	0.0%	0.00
Polypropylene #5	0.0	0.0%	0.00
Polystyrene #6	0.0	0.0%	0.00
Other Plastic	1.6	2.5%	0.04
Foams	0.0	0.0%	0.00
Plastic Bags	0.0	0.0%	0.00
Film	0.0	0.0%	0.00
Composite (mostly plastic)	0.0	0.0%	0.00
Steel Cans Food & Pet	2.4	3.8%	0.05
Steel Aerosols	0.1	0.2%	0.00
Steel Paint Cans	0.0	0.0%	0.00
Composite (mostly ferrous)	0.0	0.0%	0.00
Other ferrous	0.0	0.0%	0.00
Aluminium	0.5	0.8%	0.01
Composite (mostly non-ferrous)	0.0	0.0%	0.00
Other Non-Ferrous	0.0	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.0	0.0%	0.00
Dry cell batteries	0.0	0.0%	0.00
Car batteries	0.0	0.0%	0.00
Household chemicals	0.0	0.0%	0.00
Building Materials	0.0	0.0%	0.00
Pathogenic Infectious	0.0	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.0	0.0%	0.00
Ceramics	0.4	0.6%	0.01
Dust / Dirt / Rock / Inert	0.0	0.0%	0.00
Ash / Earth Based	0.0	0.0%	0.00
Other Household Items	0.0	0.0%	0.00
Toner Cartridges	0.0	0.0%	0.00
Computer Equipment	0.0	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	0.6	0.9%	0.01
Other	0.0	0.0%	0.00
Total	63.6	100.0%	1.45

B. RESULTS FOR MULTI-UNIT DWELLINGS

PER WEEK

Kilograms per household per week

Table 10. Composition of the domestic waste stream

Material	Average kg per h/hold	Per cent
Newspaper	0.28	5.7%
Magazines / brochures	0.14	2.8%
Miscellaneous Packaging	0.02	0.4%
Corrugated Cardboard	0.18	3.7%
Package Board	0.13	2.6%
Liquid Paper Containers	0.02	0.4%
Disposable Paper Product	0.01	0.2%
Print / Writing / Office Paper	0.05	1.0%
Composite (mostly paper)	0.00	0.0%
Nappies	0.08	1.6%
Contaminated Soiled Paper	0.33	6.7%
Food / Kitchen	1.70	34.6%
Garden / Vegetation	0.02	0.4%
Other Putrescible	0.00	0.0%
Wood / Timber	0.02	0.4%
Textile / Rags / Carpet	0.09	1.8%
Leather	0.00	0.0%
Rubber	0.01	0.2%
Oils	0.01	0.2%
Glass clear containers	0.22	4.5%
Glass green containers	0.27	5.5%
Glass brown / blue containers	0.47	9.6%
Mixed Glass / Fines	0.00	0.0%
Miscellaneous / Other Glass	0.00	0.0%
PET #1	0.09	1.8%
HDPE #2	0.04	0.8%
PVC #3	0.01	0.2%
LDPE #4	0.00	0.0%
Polypropylene #5	0.02	0.4%
Polystyrene #6	0.03	0.6%
Other Plastic	0.10	2.0%
Foams	0.00	0.0%
Plastic Bags	0.09	1.8%
Film	0.11	2.2%
Composite (mostly plastic)	0.05	1.0%
Steel Cans Food & Pet	0.08	1.6%
Steel Aerosols	0.01	0.2%
Steel Paint Cans	0.00	0.0%
Composite (mostly ferrous)	0.00	0.0%
Other ferrous	0.00	0.0%
Aluminium	0.03	0.6%
Composite (mostly non-ferrous)	0.01	0.2%
Other Non-Ferrous	0.00	0.0%
Paint	0.00	0.0%
Fluorescent tubes	0.00	0.0%
Dry cell batteries	0.00	0.0%
Car batteries	0.00	0.0%
Household chemicals	0.02	0.4%
Building Materials	0.00	0.0%
Pathogenic Infectious	0.00	0.0%
Gas Bottles	0.00	0.0%
Hazardous Other	0.00	0.0%
Ceramics	0.07	1.4%
Dust / Dirt / Rock / Inert	0.02	0.4%
Ash / Earth Based	0.00	0.0%
Other Household Items	0.01	0.2%
Toner Cartridges	0.00	0.0%
Computer Equipment	0.00	0.0%
Mobile Phones	0.00	0.0%
Electrical Items	0.04	0.8%
Other	0.02	0.4%
Total	4.92	100.0%

B. RESULTS FOR MULTI-UNIT DWELLINGS*PER WEEK***Table 11. Summary of garbage and recycling**

Material	Amount (kg per h'hold)	Per cent
Recycled paper	0.52	10.6%
Recycled containers	0.83	16.9%
Contamination in recycling	0.09	1.8%
Recovered garden organics	0.00	0.0%
Contamination in garden organics	0.00	0.0%
Garbage: Potentially recyclable paper	0.29	5.9%
Garbage: Potentially recyclable containers	0.48	9.8%
Garbage: Garden organics	0.02	0.4%
Garbage: Food waste	1.70	34.6%
Garbage: Other non-recyclable	0.99	20.1%
Total waste stream	4.92	100.0%
Diversion rate		27.4%
Recycling contamination rate		6.3%
Garden organics contamination rate		-
Possible diversion rates if the following materials were recycled:		
Garbage: Potentially recyclable		43.1%
PR + Garden organics		43.5%
PR + Garden organics + Food waste		78.0%

B. RESULTS FOR MULTI-UNIT DWELLINGS**Table 12. Recovery rates for major classes of materials**

Material	Recycled per household (kg)	In garbage per household (kg)	Total per household (kg)	Recovery Rate %
Aluminium cans & foil	0.011	0.025	0.036	30.6%
Glass	0.664	0.302	0.966	68.7%
Steel	0.057	0.052	0.109	52.3%
Paper	0.311	0.159	0.470	66.2%
Cardboard	0.205	0.115	0.320	64.1%
PET	0.064	0.029	0.093	68.8%
HDPE	0.034	0.013	0.047	72.3%
PVC	0.002	0.010	0.012	16.7%
LDPE	0.000	0.002	0.002	0.0%
Polypropylene	0.000	0.021	0.021	0.0%
Polystyrene	0.000	0.026	0.026	0.0%
Liquid paperboard	0.005	0.016	0.021	23.8%
Garden organics	0.000	0.000	0.000	0.0%
Overall	1.353	0.770	2.123	63.7%

C. RESULTS FOR ALL DWELLINGS

PER WEEK

Total dwellings in sample: 259**Table 14. Composition of the domestic garbage stream**

Material	Amount (kg)	Per cent	Average per h'hold
Newspaper	21.0	0.9%	0.08
Magazines / brochures	21.3	1.0%	0.08
Miscellaneous Packaging	1.7	0.1%	0.01
Corrugated Cardboard	14.9	0.7%	0.06
Package Board	36.1	1.6%	0.14
Liquid Paper Containers	6.1	0.3%	0.02
Disposable Paper Product	4.9	0.2%	0.02
Print / Writing / Office Paper	23.2	1.0%	0.09
Composite (mostly paper)	3.4	0.2%	0.01
Nappies	136.4	6.1%	0.53
Contaminated Soiled Paper	184.0	8.3%	0.71
Food / Kitchen	865.3	38.9%	3.34
Garden / Vegetation	78.8	3.5%	0.30
Other Putrescible	79.4	3.6%	0.31
Wood / Timber	21.3	1.0%	0.08
Textile / Rags / Carpet	57.0	2.6%	0.22
Leather	11.9	0.5%	0.05
Rubber	6.4	0.3%	0.02
Oils	4.4	0.2%	0.02
Glass clear containers	44.1	2.0%	0.17
Glass green containers	15.8	0.7%	0.06
Glass brown / blue containers	23.4	1.0%	0.09
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	12.3	0.6%	0.05
PET #1	13.0	0.6%	0.05
HDPE #2	8.4	0.4%	0.03
PVC #3	4.2	0.2%	0.02
LDPE #4	6.1	0.3%	0.02
Polypropylene #5	14.4	0.6%	0.06
Polystyrene #6	13.6	0.6%	0.05
Other Plastic	37.9	1.7%	0.15
Foams	0.7	0.0%	0.00
Plastic Bags	47.4	2.1%	0.18
Film	78.1	3.5%	0.30
Composite (mostly plastic)	27.9	1.3%	0.11
Steel Cans Food & Pet	23.4	1.1%	0.09
Steel Aerosols	7.7	0.3%	0.03
Steel Paint Cans	0.8	0.0%	0.00
Composite (mostly ferrous)	4.0	0.2%	0.02
Other ferrous	40.0	1.8%	0.15
Aluminium	12.2	0.5%	0.05
Composite (mostly non-ferrous)	2.1	0.1%	0.01
Other Non-Ferrous	0.6	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.4	0.0%	0.00
Dry cell batteries	3.1	0.1%	0.01
Car batteries	0.0	0.0%	0.00
Household chemicals	18.1	0.8%	0.07
Building Materials	75.0	3.4%	0.29
Pathogenic Infectious	0.6	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.1	0.0%	0.00
Ceramics	21.2	1.0%	0.08
Dust / Dirt / Rock / Inert	32.2	1.4%	0.12
Ash / Earth Based	7.7	0.3%	0.03
Other Household Items	3.2	0.1%	0.01
Toner Cartridges	0.1	0.0%	0.00
Computer Equipment	0.5	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	29.3	1.3%	0.11
Other	19.3	0.9%	0.07
Total	2,226.3	100.0%	8.60

C. RESULTS FOR ALL DWELLINGS

PER WEEK

Total dwellings in sample: 173**Table 15. Composition of the recycling stream**

Material	Amount (kg)	Per cent	Average per h'hold
Newspaper	193.3	20.1%	1.12
Magazines / brochures	117.8	12.3%	0.68
Miscellaneous Packaging	0.5	0.1%	0.00
Corrugated Cardboard	74.7	7.8%	0.43
Package Board	33.6	3.5%	0.19
Liquid Paper Containers	4.9	0.5%	0.03
Disposable Paper Product	1.6	0.2%	0.01
Print / Writing / Office Paper	56.3	5.9%	0.33
Composite (mostly paper)	0.6	0.1%	0.00
Nappies	0.0	0.0%	0.00
Contaminated Soiled Paper	8.2	0.9%	0.05
Food / Kitchen	2.5	0.3%	0.01
Garden / Vegetation	0.2	0.0%	0.00
Other Putrescible	0.2	0.0%	0.00
Wood / Timber	0.7	0.1%	0.00
Textile / Rags / Carpet	5.6	0.6%	0.03
Leather	0.0	0.0%	0.00
Rubber	0.0	0.0%	0.00
Oils	0.4	0.0%	0.00
Glass clear containers	139.6	14.5%	0.81
Glass green containers	99.5	10.4%	0.58
Glass brown containers	120.6	12.6%	0.70
Mixed Glass / Fines	0.0	0.0%	0.00
Miscellaneous / Other Glass	0.4	0.0%	0.00
PET #1	23.3	2.4%	0.13
HDPE #2	17.7	1.8%	0.10
PVC #3	1.0	0.1%	0.01
LDPE #4	0.4	0.0%	0.00
Polypropylene #5	1.2	0.1%	0.01
Polystyrene #6	0.5	0.1%	0.00
Other Plastic	11.9	1.2%	0.07
Foams	0.3	0.0%	0.00
Plastic Bags	0.6	0.1%	0.00
Film	2.6	0.3%	0.02
Composite (mostly plastic)	3.2	0.3%	0.02
Steel Cans Food & Pet	17.9	1.9%	0.10
Steel Aerosols	0.7	0.1%	0.00
Steel Paint Cans	0.0	0.0%	0.00
Composite (mostly ferrous)	0.0	0.0%	0.00
Other ferrous	0.0	0.0%	0.00
Aluminium	6.0	0.6%	0.03
Composite (mostly non-ferrous)	0.0	0.0%	0.00
Other Non-Ferrous	0.0	0.0%	0.00
Paint	0.0	0.0%	0.00
Fluorescent tubes	0.6	0.1%	0.00
Dry cell batteries	0.0	0.0%	0.00
Car batteries	0.0	0.0%	0.00
Household chemicals	0.0	0.0%	0.00
Building Materials	7.7	0.8%	0.04
Pathogenic Infectious	0.0	0.0%	0.00
Gas Bottles	0.0	0.0%	0.00
Hazardous Other	0.0	0.0%	0.00
Ceramics	1.1	0.1%	0.01
Dust / Dirt / Rock / Inert	0.0	0.0%	0.00
Ash / Earth Based	0.0	0.0%	0.00
Other Household Items	0.1	0.0%	0.00
Toner Cartridges	0.0	0.0%	0.00
Computer Equipment	0.0	0.0%	0.00
Mobile Phones	0.0	0.0%	0.00
Electrical Items	2.9	0.3%	0.02
Other	0.0	0.0%	0.00
Total	960.9	100.0%	5.55

C. RESULTS FOR ALL DWELLINGS

PER WEEK

Table 16. Composition of the garden organics stream

Material	Per cent	Average per h'hold
Newspaper	0.1%	0.01
Magazines / brochures	0.0%	0.00
Miscellaneous Packaging	0.0%	0.00
Corrugated Cardboard	0.0%	0.00
Package Board	0.0%	0.00
Liquid Paper Containers	0.0%	0.00
Disposable Paper Product	0.0%	0.00
Print / Writing / Office Paper	0.0%	0.00
Composite (mostly paper)	0.0%	0.00
Nappies	0.0%	0.00
Contaminated Soiled Paper	0.1%	0.01
Food / Kitchen	0.2%	0.02
Garden / Vegetation	97.1%	9.68
Other Putrescible	0.2%	0.02
Wood / Timber	1.1%	0.11
Textile / Rags / Carpet	0.1%	0.01
Leather	0.0%	0.00
Rubber	0.0%	0.00
Oils	0.0%	0.00
Glass clear containers	0.0%	0.00
Glass green containers	0.0%	0.00
Glass brown / blue containers	0.0%	0.00
Mixed Glass / Fines	0.0%	0.00
Miscellaneous / Other Glass	0.0%	0.00
PET #1	0.0%	0.00
HDPE #2	0.0%	0.00
PVC #3	0.0%	0.00
LDPE #4	0.0%	0.00
Polypropylene #5	0.0%	0.00
Polystyrene #6	0.0%	0.00
Other Plastic	0.2%	0.02
Foams	0.0%	0.00
Plastic Bags	0.1%	0.01
Film	0.0%	0.00
Composite (mostly plastic)	0.0%	0.00
Steel Cans Food & Pet	0.0%	0.00
Steel Aerosols	0.0%	0.00
Steel Paint Cans	0.0%	0.00
Composite (mostly ferrous)	0.0%	0.00
Other ferrous	0.0%	0.00
Aluminium	0.0%	0.00
Composite (mostly non-ferrous)	0.0%	0.00
Other Non-Ferrous	0.0%	0.00
Paint	0.0%	0.00
Fluorescent tubes	0.0%	0.00
Dry cell batteries	0.0%	0.00
Car batteries	0.0%	0.00
Household chemicals	0.0%	0.00
Building Materials	0.0%	0.00
Pathogenic Infectious	0.0%	0.00
Gas Bottles	0.0%	0.00
Hazardous Other	0.0%	0.00
Ceramics	0.0%	0.00
Dust / Dirt / Rock / Inert	0.3%	0.03
Ash / Earth Based	0.0%	0.00
Other Household Items	0.0%	0.00
Toner Cartridges	0.0%	0.00
Computer Equipment	0.0%	0.00
Mobile Phones	0.0%	0.00
Electrical Items	0.0%	0.00
Other	0.3%	0.03
Total	100.0%	9.96

C. RESULTS FOR ALL DWELLINGS
Kilograms per household per week

PER WEEK

Table 17. Composition of the domestic waste stream

Material	Average kg per h'hold	Per cent
Newspaper	1.21	5.0%
Magazines / brochures	0.76	3.2%
Miscellaneous Packaging	0.01	0.0%
Corrugated Cardboard	0.49	2.0%
Package Board	0.33	1.4%
Liquid Paper Containers	0.05	0.2%
Disposable Paper Product	0.03	0.1%
Print / Writing / Office Paper	0.42	1.7%
Composite (mostly paper)	0.01	0.0%
Nappies	0.53	2.2%
Contaminated Soiled Paper	0.77	3.2%
Food / Kitchen	3.37	14.0%
Garden / Vegetation	9.98	41.4%
Other Putrescible	0.33	1.4%
Wood / Timber	0.19	0.8%
Textile / Rags / Carpet	0.26	1.1%
Leather	0.05	0.2%
Rubber	0.02	0.1%
Oils	0.02	0.1%
Glass clear containers	0.98	4.1%
Glass green containers	0.64	2.7%
Glass brown / blue containers	0.79	3.3%
Mixed Glass / Fines	0.00	0.0%
Miscellaneous / Other Glass	0.05	0.2%
PET #1	0.18	0.7%
HDPE #2	0.13	0.5%
PVC #3	0.03	0.1%
LDPE #4	0.02	0.1%
Polypropylene #5	0.07	0.3%
Polystyrene #6	0.05	0.2%
Other Plastic	0.24	1.0%
Foams	0.00	0.0%
Plastic Bags	0.19	0.8%
Film	0.32	1.3%
Composite (mostly plastic)	0.13	0.6%
Steel Cans Food & Pet	0.19	0.8%
Steel Aerosols	0.03	0.1%
Steel Paint Cans	0.00	0.0%
Composite (mostly ferrous)	0.02	0.1%
Other ferrous	0.15	0.6%
Aluminium	0.08	0.3%
Composite (mostly non-ferrous)	0.01	0.0%
Other Non-Ferrous	0.00	0.0%
Paint	0.00	0.0%
Fluorescent tubes	0.00	0.0%
Dry cell batteries	0.01	0.0%
Car batteries	0.00	0.0%
Household chemicals	0.07	0.3%
Building Materials	0.33	1.4%
Pathogenic Infectious	0.00	0.0%
Gas Bottles	0.00	0.0%
Hazardous Other	0.00	0.0%
Ceramics	0.09	0.4%
Dust / Dirt / Rock / Inert	0.15	0.6%
Ash / Earth Based	0.03	0.1%
Other Household Items	0.01	0.0%
Toner Cartridges	0.00	0.0%
Computer Equipment	0.00	0.0%
Mobile Phones	0.00	0.0%
Electrical Items	0.13	0.5%
Other	0.10	0.4%
Total	24.11	100.0%

C. RESULTS FOR ALL DWELLINGS**Table 19. Recovery rates for major classes of materials**

Material	Recycled per household (kg)	In garbage per household (kg)	Total per household (kg)	Recovery Rate %
Aluminium cans & foil	0.035	0.047	0.082	42.7%
Glass	2.079	0.322	2.401	86.6%
Steel	0.108	0.123	0.231	46.8%
Paper	2.133	0.272	2.405	88.7%
Cardboard	0.629	0.203	0.832	75.6%
PET	0.135	0.050	0.185	73.0%
HDPE	0.102	0.032	0.134	76.1%
PVC	0.006	0.016	0.022	27.3%
LDPE	0.002	0.024	0.026	7.7%
Polypropylene	0.007	0.056	0.063	11.1%
Polystyrene	0.003	0.053	0.056	5.4%
Liquid paperboard	0.028	0.024	0.052	53.8%
Garden organics	9.786	0.304	10.090	97.0%
Overall	15.053	1.526	16.579	90.8%