

Wellington Shire Council Waste Audit Report





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SUMMARY

About the
audit

- The purpose of the audit is to provide accurate data and analysis of the composition of General Waste and Recycling streams for 251 households (single-unit dwellings) and 58 commercial premises, establishing a baseline prior to implementation of additional stream separation (FOGO, Glass)
- All bins were visually assessed by APC's Waste Audit Supervisor prior to collection and bin fullness was recorded.
- Sampled waste was collected and sorted by APC's audit team at Wellington Shire Council's Kilmany Resource Recovery Centre, located at Velore Road, Kilmany VIC 3851.
- The findings of the audit are presented in PowerBi Dashboard and EXCEL format to facilitate a more tailored granular analysis by Wellington Shire Council.

Audit
Findings

- A total of 4,368 kgs household waste was audited comprising 1,348 kgs recycling and 3,020 kgs rubbish.

- Glass represented 13.5% by weight of the recycling stream
- Organics combined represented 85.2% by weight of the rubbish stream

Household composition audit:

- On average 13.3 kg/HH/week was generated. Of this 30.86% (4.1 kgs) was disposed as recycling bin and 69.14% (9.2 kgs) was disposed as general waste
- 15.61% of the combined waste streams comprised organics, followed by green waste (13.91%), cardboard (9.33%), containerised food and liquid (7.89%) and paper (7.87%).

Household Recovery Rates:

- When adjusted for contamination, the recovery rate was 26.27% (from initial recovery rate of 30.86% at the point of collection).
- The audit also revealed how much opportunity is available for additional recovery from the general waste stream (49.61%), bringing the potential recovery rate up to 75.88%.
- Households top 5 contaminants in recycling stream were: residual waste (41.6%), broken glass (14.2%), clothing/textile (9.6%), containerised food and liquid (8.9%) and non-household waste (6.5%).
- Households top 5 opportunities in general waste stream were: food organics (31.42%), green waste (27.88%), containerised food and liquid (15.08%), other putrescible (10.8%) and paper (3.75%).

Commercial composition audit:

- From the total sample of commercial waste generated over a standard kerbside collection service period (726 kgs), 47.43% (344.5 kgs) was disposed in the general waste bin and 52.57% (381.9 kgs) was disposed on the recycling bins.
- Regarding material composition of commercial general waste stream, organics category comprised 47.03% of total weight, followed by commingled recyclables (22.63%), which includes paper, cardboard, plastics (PET, HDPE and PP), glass metal and aluminium.
- Commercial recycling stream composition indicates 74.61% under commingled recyclables category, followed by bagged materials (12.22%) and residual waste (9.85%). Potentially hazardous waste comprised 0.82% of commercial recycling stream weight.

Commercial recovery rates:

- Commercial adjusted recovery rate was 39.23% (from initial recovery rate of 52.57% at collection point). The audit also revealed how much opportunity is available for additional recovery from the general waste stream (33.04%), bringing the potential recovery rate up to 72.26%.
- Commercial top 5 contaminants in recycling stream were: bagged materials (48.1%), other residual waste (19.8%), broken glass (12.2%), ceramics (3.2%) and plastic film (3.2%).
- Commercial top 5 opportunities in general waste stream were: food organics (34.18%), containerised food and liquid (14.44%), other putrescible (14.12%), paper (12.93%) and glass (5.35%).

1. INTRODUCTION

Wellington Shire Council is located in the Gippsland region of the state of Victoria, approximately two hours east of Melbourne by road or rail. It extends from the Great Dividing Range and Victoria's High Country, through rich irrigated flats and some of the most productive grazing land in Australia to the internationally significant Gippsland Lakes and Wetlands and the Ninety Mile Beach and Bass Strait.

It is Victoria's third largest municipality, covering an area of 10,924 square kilometres and is home to 45,639 residents (2021 census) spread across more than 30 different communities.

Wellington Shire Council currently provides a 120L red general rubbish bin (weekly collection) and a 240L yellow recycling bin (fortnightly collection) to households and businesses within declared kerbside collection areas across the municipality. A council service includes one of each bin type, with no options for larger or smaller bins.

Council currently provides around 20,863 kerbside collection services across the municipality, with the majority of kerbside services located within the towns of:

- Sale - 7613 services
- Maffra - 2486 services
- Loch Sport - 1781 services
- Stratford - 1316 services
- Yarram - 1127 services
- Heyfield – 975 services
- Rosedale–780 services

Council proposes to introduce a 240L FOGO bin (weekly collection) in mid-2026 and a 120L glass bin (monthly collection) in mid-2027 in line with Recycling Victoria's draft Service Standards.

2. ABOUT THE AUDIT

Wellington Shire Council engaged APC Waste Consultants to conduct a two-stream kerbside waste composition audit of general rubbish and recycling sourced from 250 households (120L and 240L bins respectively) and 50 businesses. For this audit Council requested that APC audit the towns of Sale and Maffra.

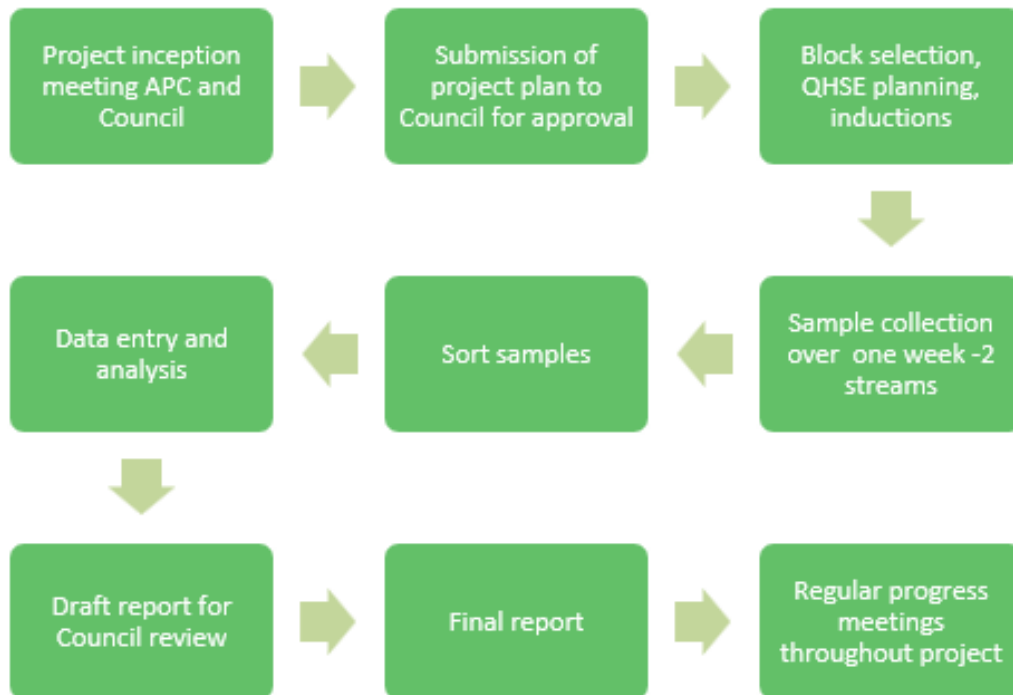
The purpose of this audit is to:

- Provide a pre-implementation baseline to measure the effectiveness of additional stream separation (FOGO, GLASS) in the coming years for households (only) Kerbside service recipients.
- Compare with historical audits to identify change in practice.
- Compare the municipality against average state composition and contamination benchmarks
- Assess lost opportunity for residents who choose not to benefit from CDS
- Identify key waste contamination issues for targeted communication and education programs.

The audit was scheduled over 6 days between 8th and 15 November 2024 and included measuring composition and volume of materials sourced from households and businesses located in the towns of Sale and Maffra.

3. AUDIT METHODOLOGY

3.1 Overview of methodology



Each step is detailed on the below sections:

3.2 Project Inception Meeting

Discussions were held with Kaitlyn Morris and Samantha Nock from Wellington Shire Council and Natasha Schultz, from APC to determine operational aspects of the project, including the sort site, bin sizes and configuration, waste types, collection schedules, waste sampling and collection, and other requirements for the physical audit.

APC Provided

- auditing equipment and team
- Risk Assessments and OH&S Plans
- Personal Protective Equipment (PPE)
- site-specific Safe Work Method Statements (SWMS)

Council provided

- information on current waste management practices
- collection and delivery of sample at sort site
- sort site and access to waste audit location
- disposal of sample materials post-audit

3.3 Site Inductions

All staff were required to be inducted prior to commencing work. APC's Waste Audit Supervisor oversaw the audit and ensured the agreed processes and protocols were fit for purpose and amended as required.

3.4 Sample size and sample collection

A representative sample from the waste generated over a standard kerbside rubbish collection service period was collected commencing Monday 8 November and concluding Monday 15 November 2024, from 250 households (120L general rubbish x 240L recycling bins), as well as bins from 50 businesses. The samples were collected prior to the regular collection, allowing for the samples to be collected on the allocated day with minimal impact on the regular collection routes and times.

APC's Audit Supervisor accompanied Council's waste collection contractor to visually assess bins prior to collection, recording presentation rates and bin fullness for each of the selected samples. APC's Supervisor also ensured that the correct number of bins were collected from selected streets in the defined areas, as per table below. Commercial sites were collected separately from household kerbside collections. Dates were established so that the audit was not conducted before, during or immediately after any public holidays or significant sporting / community events that could interfere with audit results.

An aggregated collection method of sampling was applied, allowing for the contents of household bins to be combined in the collection vehicle, which delivers significant WH&S, privacy and efficiency advantages. A separate vehicle was deployed for the collection of business waste.

3.5 Sorting location

Sampled waste was taken Kilmany Resource Recovery Centre, Vero Road, Kilmany

3.6 Sorting

<Content redacted >



Image 1: Aggregated general rubbish ready for auditing at sort site

3.7 Equipment

All auditors were equipped with long pants and long sleeves, high-visibility safety vests, safety boots, wet weather gear, puncture resistant gloves and safety glasses. APC provided multiple sets of platform and table scales that weight up to 150 kgs.

All data sheets were contained in specifically designed all weather clipboards. Data was not directly entered into laptops on site but hand-written for manual checking and subsequently entered by APC's Data Entry.

All APC staff were provided with a clear set of instructions in relation to methodologies and uniform data recording to ensure consistency between assessors.

3.8 Data management, data analysis and statistical validation techniques

<Content redacted >

3.9 Reporting

APC has provided:

- Draft comprehensive Waste Composition Audit report – electronic document (PDF and MS Word) for review and comment
- PowerBI Dashboard link to analysis
- for review and comment, prior to finalising.

3.10 Presenting the audit data in PowerBI dashboard.

APC's audit data has been analysed and visualised using PowerBI Dashboard. Access to the data in this form provides additional capabilities including intuitive filtering options to interrogate and personalise data and provide different levels of detail as may be required. This report contains a sample of this analysis with additional commentary to supplement the Dashboard.

Refer link: [Wellington Dashboard](#)

4. RESULTS

The audit provided an overview of bin fullness broken down by each street assessed in the LGA, indicating number of samples per street, bin fullness by street and bin fullness by collection streams, both for households and for businesses.

4.1 Household bin fullness

Wellington Shire Council provides residents with a 120L rubbish bin collected weekly and a 240L recycling bin collected on a fortnightly basis. Visual inspection prior to the collection of bins indicated rubbish and recycling bins fullness.

Figure 1 has been extracted from the Dashboard and provides analysis of the number of households sampled in each street, the percentage fullness of bins by street and quantity. The dashboard can be further interrogated for a more granular view.

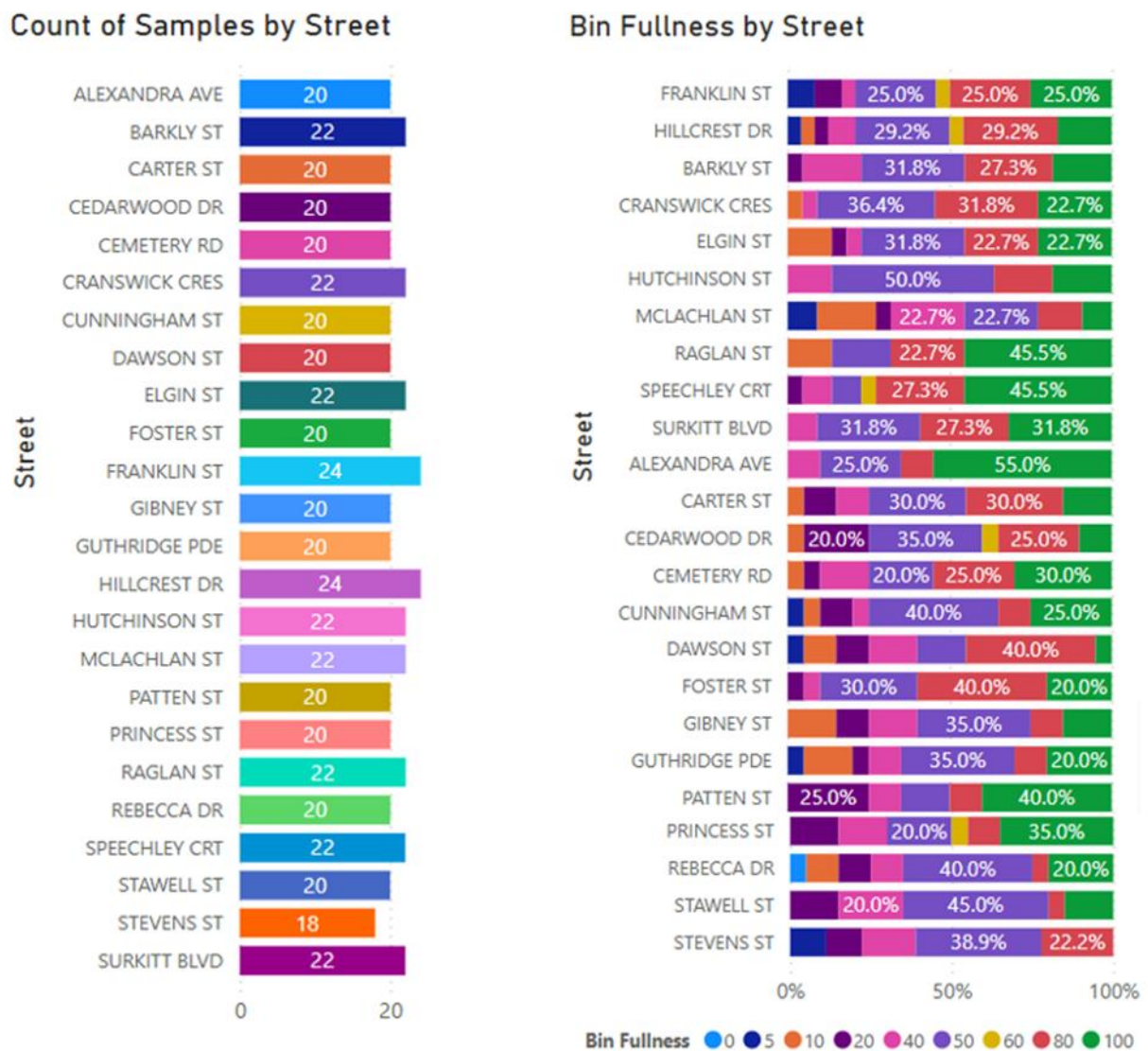


Figure 1: Bin fullness by street

Figure 2 below indicates that 32.7% of bins assessed for household rubbish stream were at capacity (100% full), whilst only 14.74% of bins assessed for household recycling stream were 100% full. The audit found that there were no overflowing household rubbish or recycling bins

53% of the rubbish bins assessed were found to be 50% or less full, meaning they had 60L unused capacity. For the recycling stream, visual assessment indicated that 56% of bins were 50% or less full, meaning they had 120L unused capacity.

The audit found that the 47% of the rubbish bins were between 60% to 100% full, whilst 44% of recycling stream were 60% to 100% full.

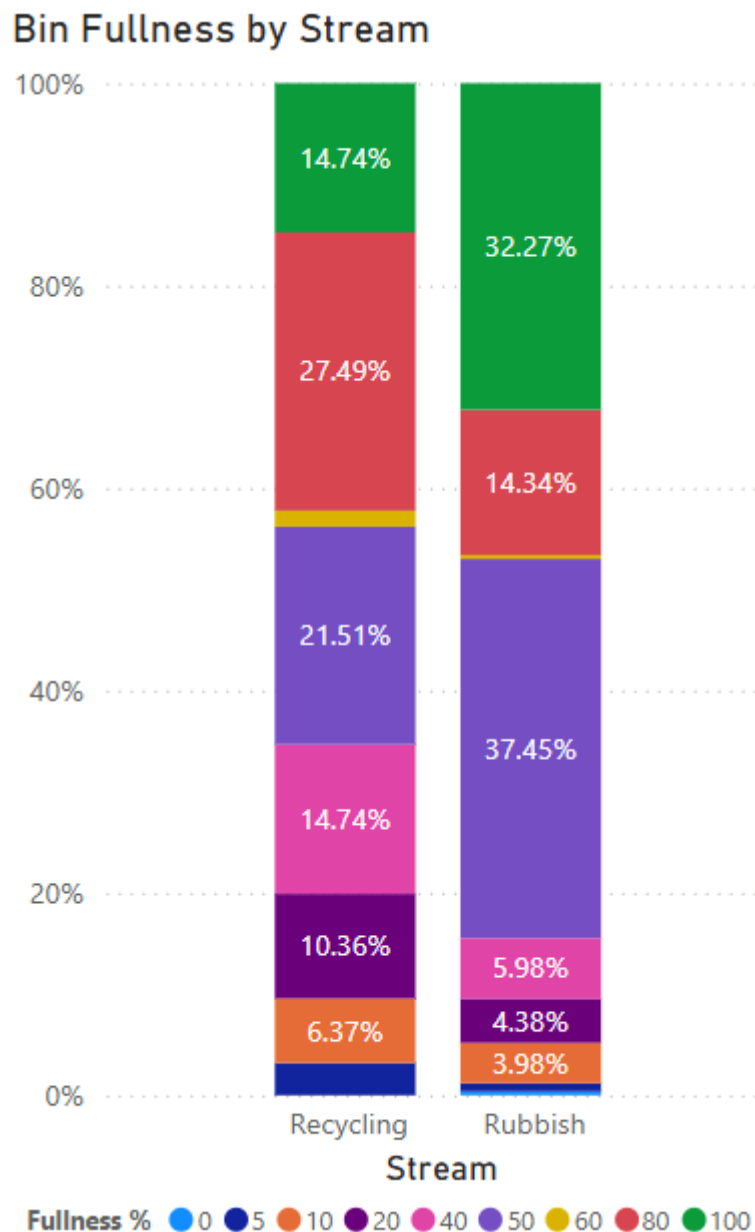


Figure 2: Household bin fullness by waste stream

4.2 Commercial bin fullness

Visual inspections prior to the collection of bins servicing commercial premises provided an indication of bin fullness. Figure 3 has been extracted from the Dashboard and provides analysis of the number of households sampled in each street, the percentage fullness of bins by street and quantity.

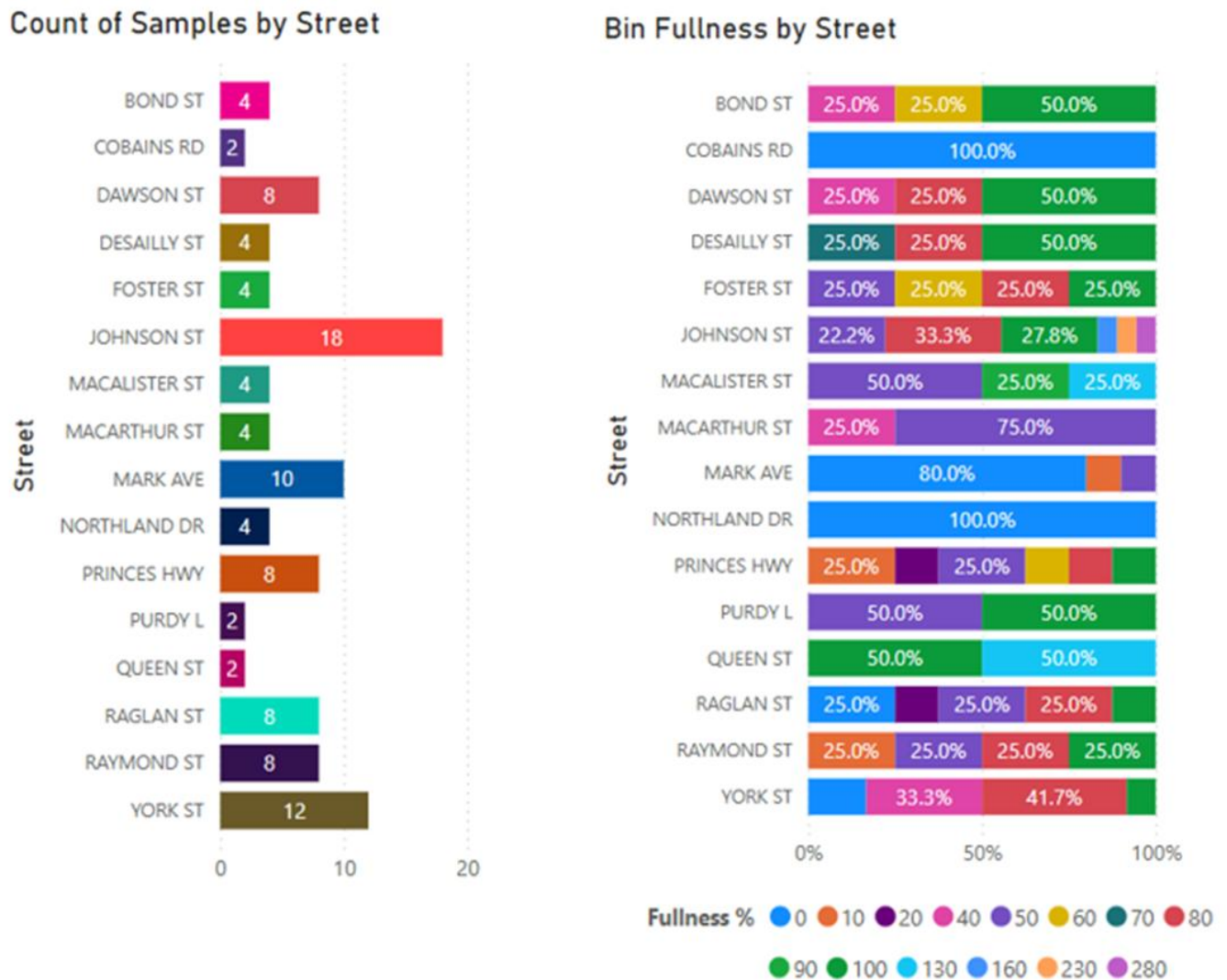


Figure 3: Commercial count of samples and bin fullness by street

The audit of commercial premises found 43% of rubbish bins were between 60% and 100% full and 45% of recycling bins were between 60% and 100% full.

6% of commercial rubbish bins and 4% of commercial recycling bins were overflowing. Overflowing bins were identified on Johnson Street, Queen Street and Macalister Street.

● 90 ● 100 ● 130 ● 160 ● 230 ● 280

Figure 4 overleaf provides further information about each audited waste stream.

Bin Fullness by Stream

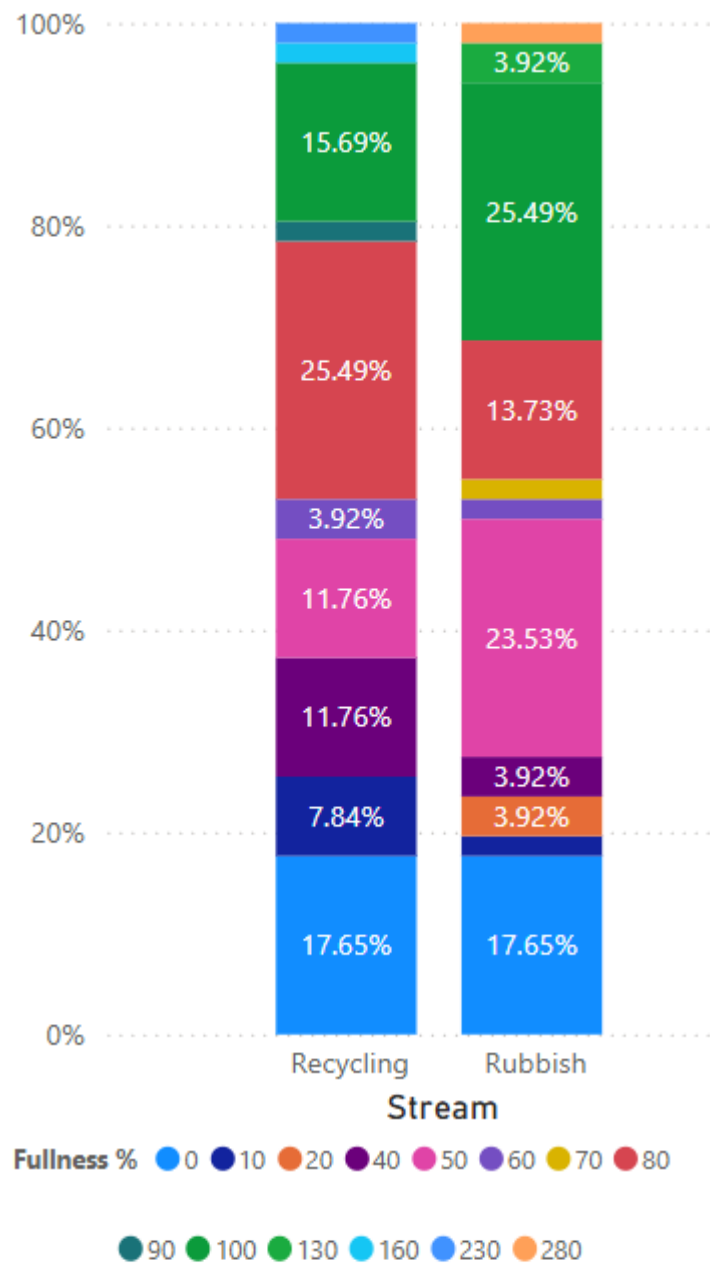
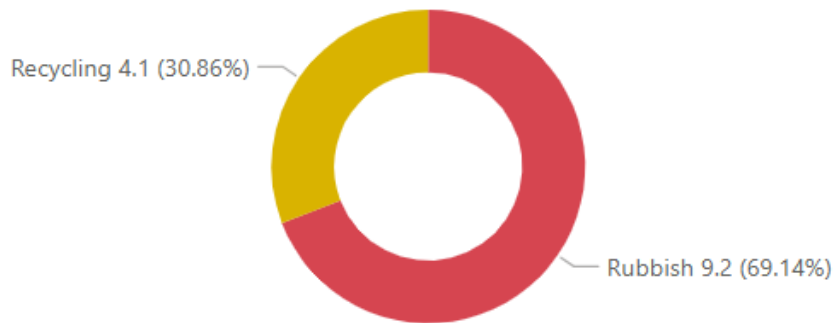


Figure 4: Commercial bin fullness by stream

4.3 Household Generation and Composition

From the total sample of household waste generated during the sampling period, 30.86% (4.1 kgs) was disposed in the recycling bin and 69.14% (9.2 kgs) was disposed as rubbish. When combined this represents an average of 13.3 kg/HH/week.

Generation (kg/HH/week / percentage) by Collection Stream



Generation (kg/HH/week) by Day

Stream ● Rubbish ● Recycling

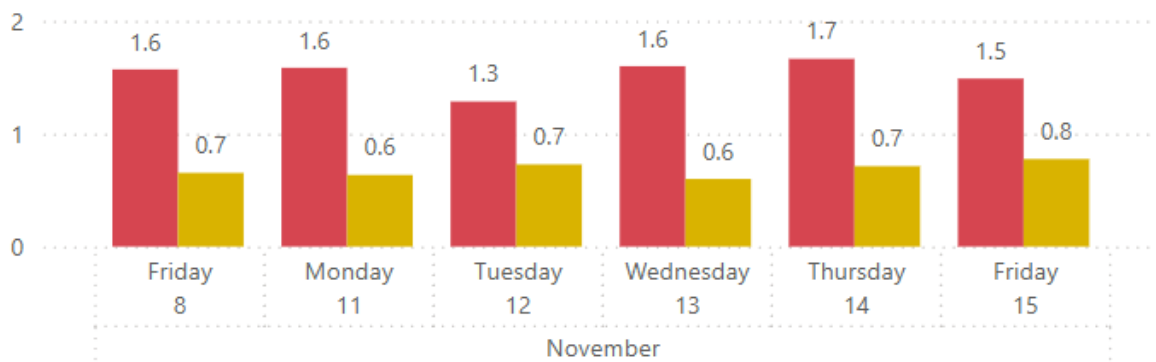


Figure 5: Household generation by waste stream and by weekday

4.4 Household Material Composition

A total of 4,367.91 kgs of material was audited (rubbish and recycling). Of this, Food organics comprised 12% (522 kgs) which if combined with food decanted from containerised food, could potentially comprise 18.3% of the total waste stream (799 kgs), followed by green waste 13.91% (608 kgs), cardboard 9.33% (408kgs), containerised food and liquid 7.89% (345kgs) and paper 7.87% (344kgs). Figure 6 below details the top 20 material categories.

Material Composition (kg/HH/week / percentage)

Stream ● Recycling ● Rubbish

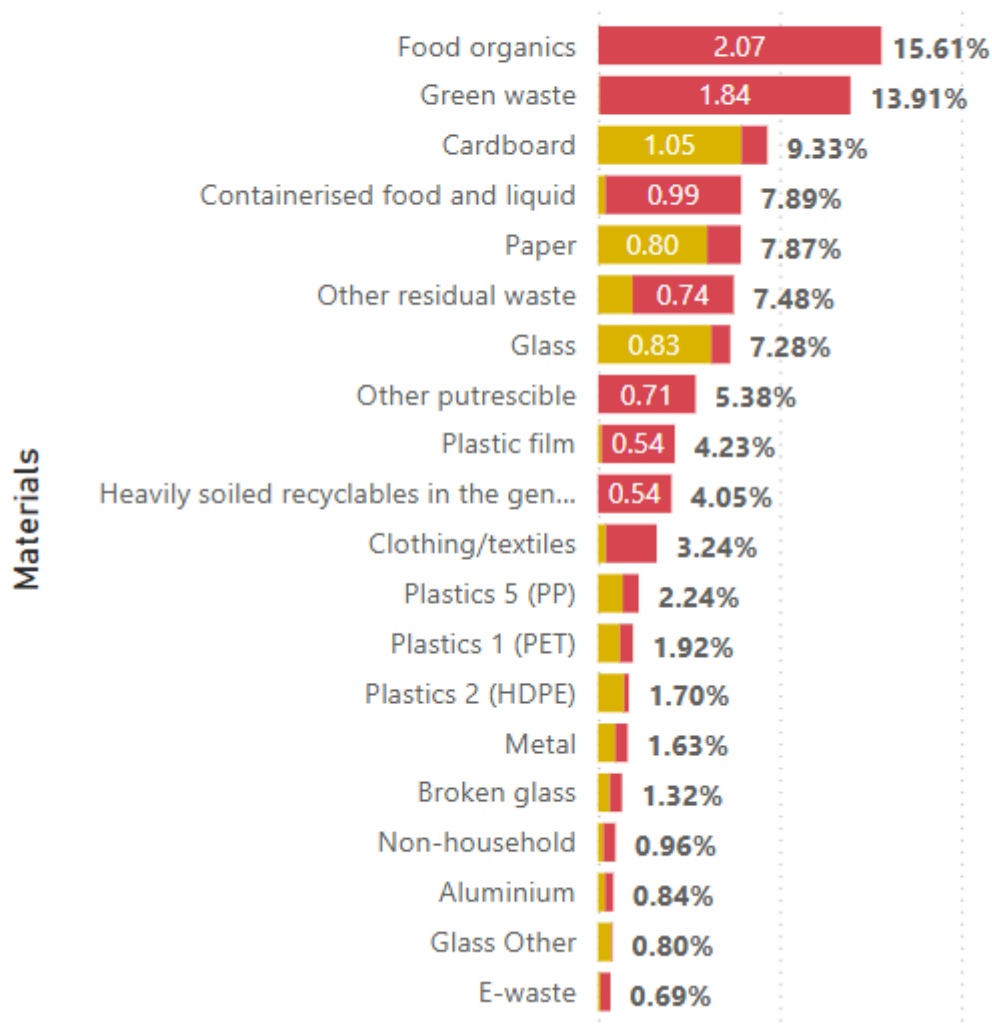


Figure 6: Household material composition

4.4.1 Rubbish stream

3,012 kgs was disposed of in the rubbish stream. Of this 1,276 kgs (42.25%) was organics and included food organics, green waste, containerised food and other putrescibles. 320 kgs (10.64%) comprised commingled recyclables which could have been recovered if placed in the dedicated recycling bin.

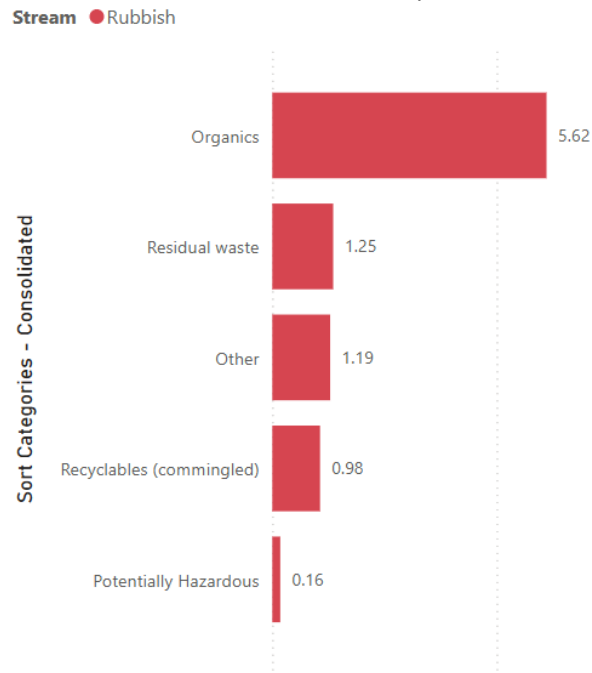


Figure 7: Composition of household rubbish stream by consolidated category (kgs per household per week)

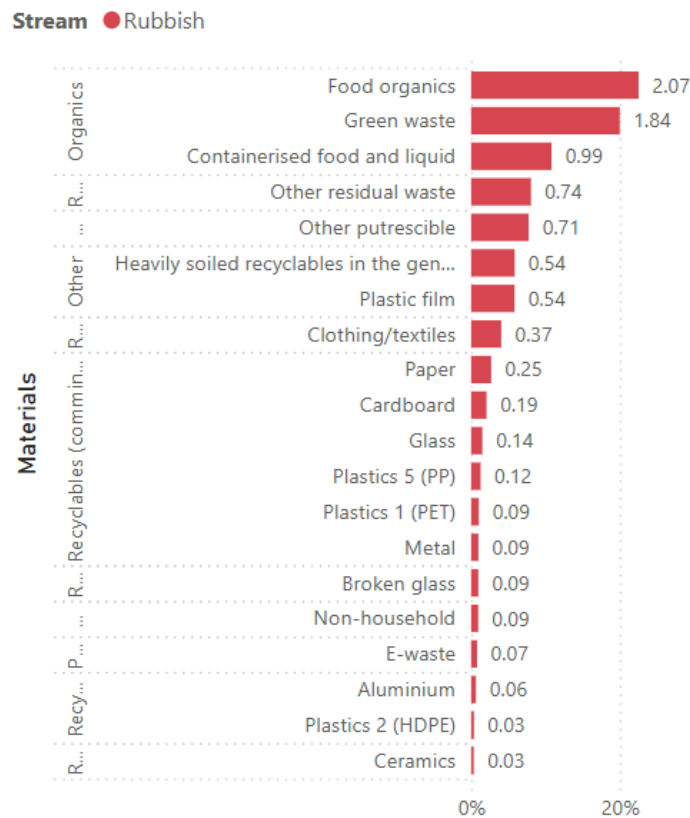


Figure 8: Composition of household rubbish stream – top 20 sort categories (kgs per household per week)

4.4.2 Recycling

Of the total sample audited 1,355 kgs (30.86%) was recycling. The audit found that 85.13% of this stream comprised commingled recyclables followed by contamination (14.87%) which included residual waste (10.17%), organics (1.74%) and bagged materials (0.54%).

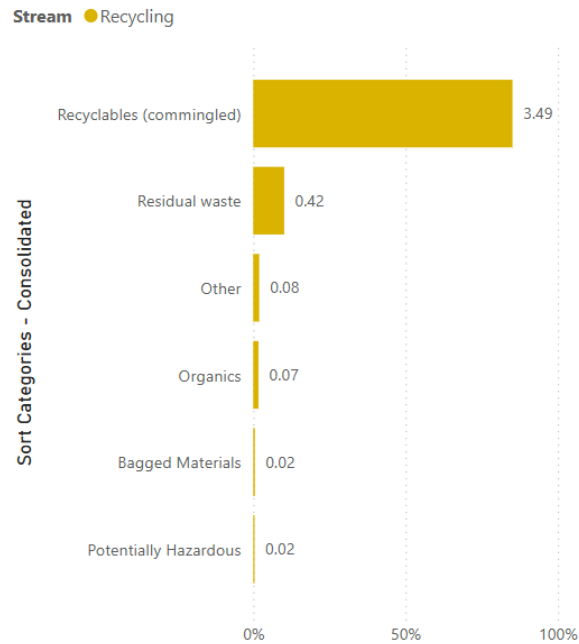


Figure 9: Composition of household recycling stream by consolidated category (kgs per household per week)

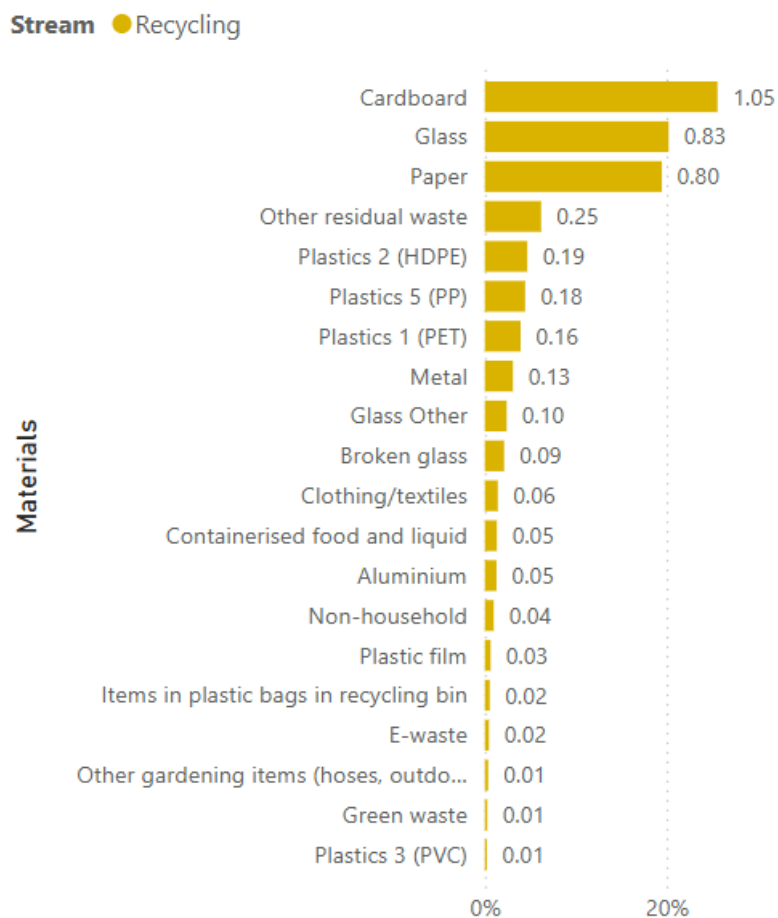


Figure 10: Composition of household recycling stream – top 20 sort categories (kgs per household per week)

4.4.3 Contamination of recycling stream (kgs/hh/ week)

Of the contamination found in the recycling stream more than 68.4% by weight was residual waste (41.6%), comprising broken glass (14.2%), clothing and textile (9.6%) and plastics not currently recycled (2.8%), such as PVC, LDPE, PS ,Polystyrene and items in plastic bags, followed by Other (13.2% comprising non household, plastic film and other gardening items), Organics (11.7% - mainly containerised food) and Potentially hazardous (3.1% E-waste)

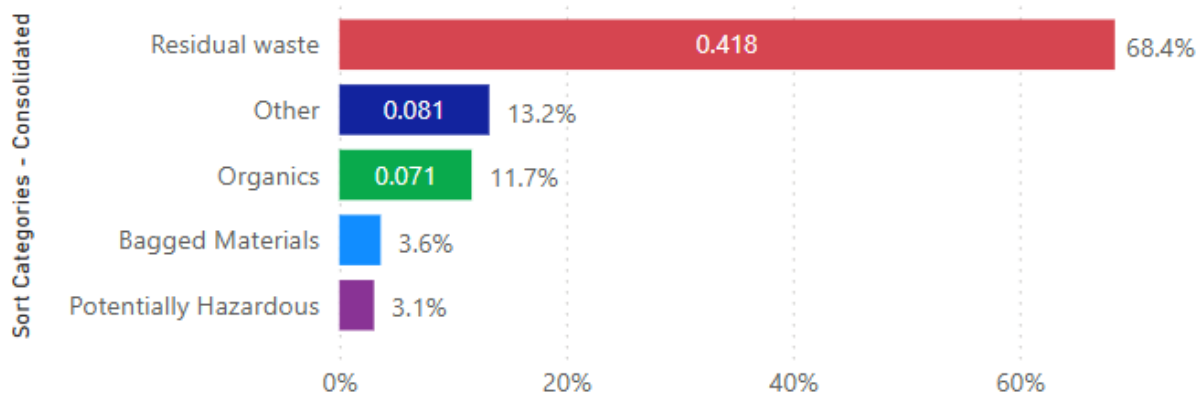


Figure 11: Contamination in household recycling - consolidated category (kgs per household per week)

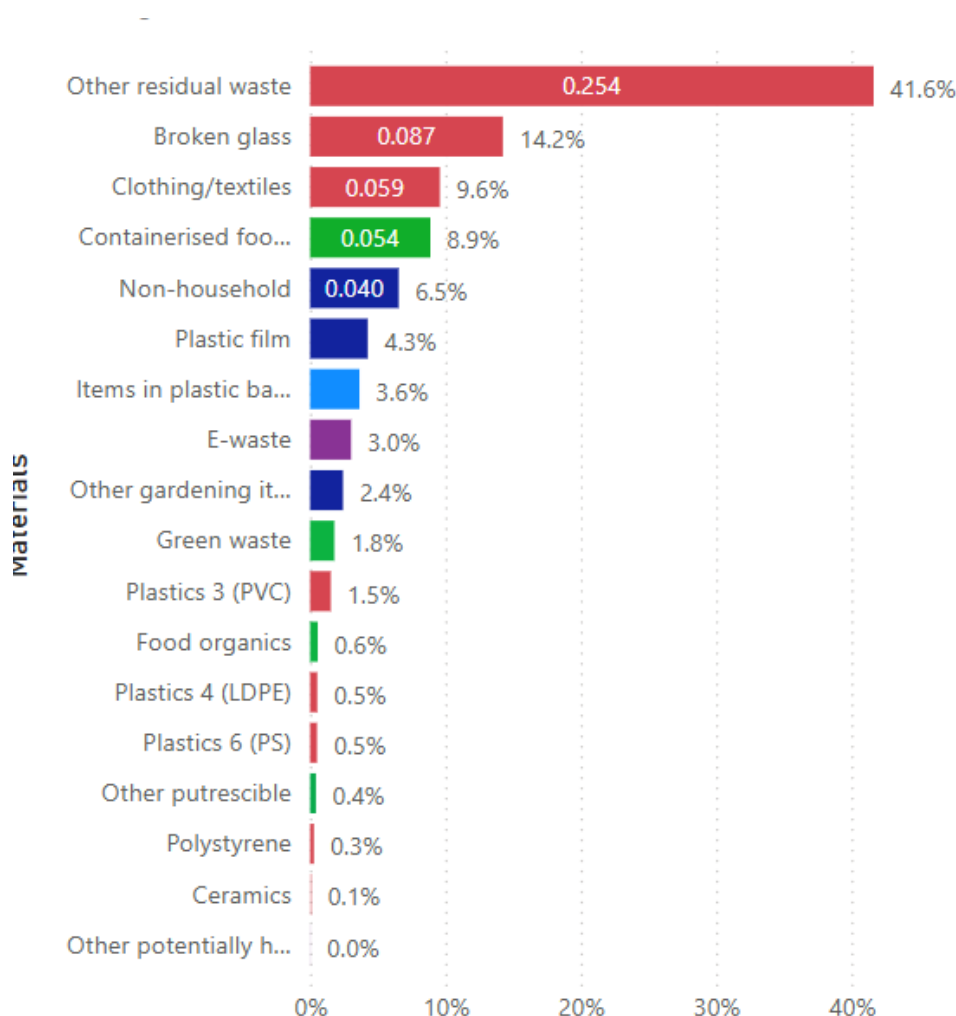


Figure 12: Contamination in household recycling– top 20 sort categories (kgs per household per week)

4.4.4 Opportunities within rubbish stream

The following provides an overview of the opportunities for resource recovery from the rubbish stream. Opportunity is defined as any “recyclable leakage” in this stream

By weight, Organics comprised 85.2% of potentially recoverable material comprising food organics (31.42%), green waste (27.88%), containerised food and liquid (15.08%) and Other putrescible (10.8%). Commingled recyclables (14.81%) by weight could have been recovered if placed in the correct bin.

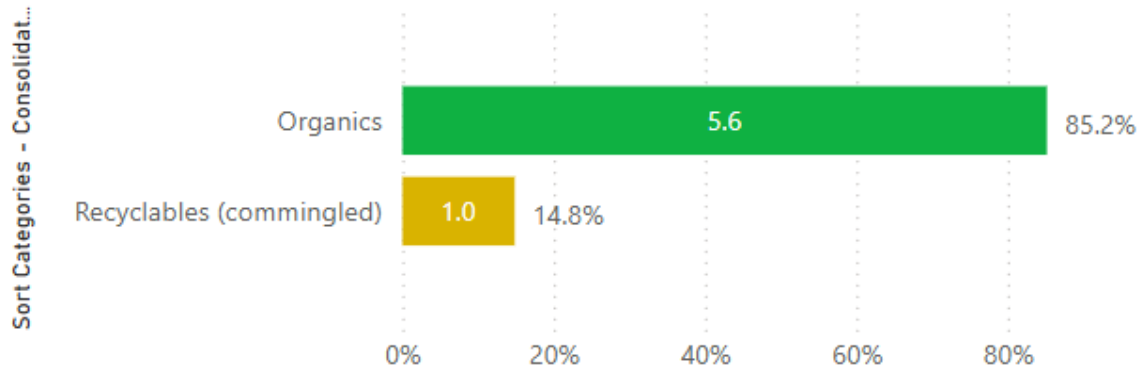


Figure 13: Potential resource recovery from rubbish– consolidated categories (kgs per household per week)

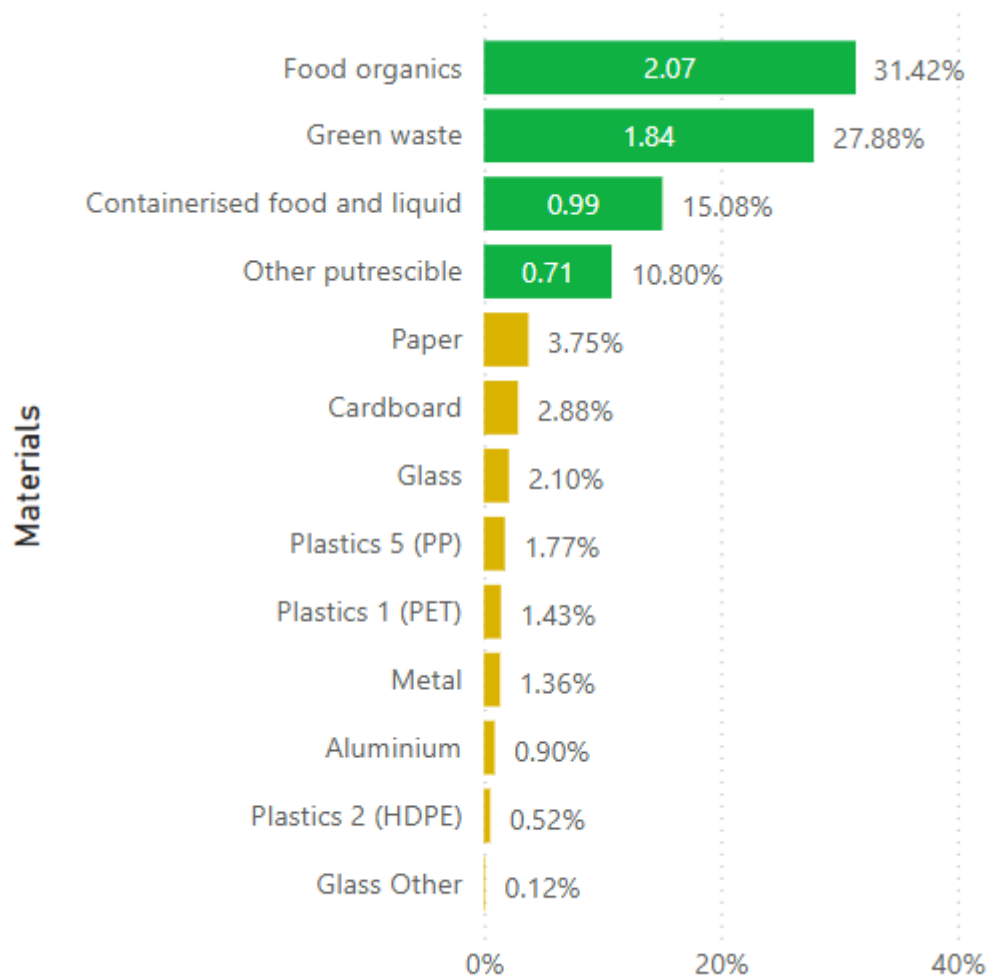


Figure 14: Potential resource recovery from rubbish– top 20 sort categories (kgs per household per week)



Image 2: Sample of green waste and recyclable items identified in rubbish stream

4.4.5 Household Container Deposit Scheme (CDS) Eligible Containers Count

Eligible containers under the CDS were counted to estimate the number disposed of in rubbish and recycling bins. The audit found that 2.13 containers were disposed of weekly by SUD households in the rubbish bin and 4.93 containers per SUD household were correctly disposed weekly in the recycling bin.

The following images provide an overview of the CDS counts per household per week and by stream.

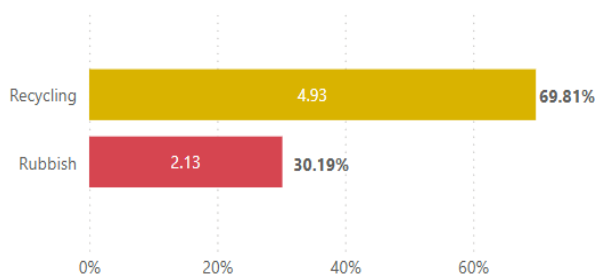


Figure 15: Eligible container count/SUD household/week

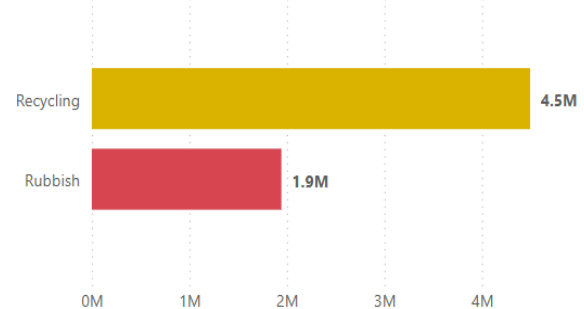


Figure 16: Eligible container count/SUD household /annum

The following image provides a theoretical estimate of the potential annual value of eligible containers found in the rubbish and recycling streams. This has been forecast using the number of eligible containers multiplied by the redeemable value of 10c and the estimated number of occupied households.(17,538 - ABS data for occupied private dwellings <https://www.abs.gov.au/census/find-census-data/quickstats/2021/LGA26810>).

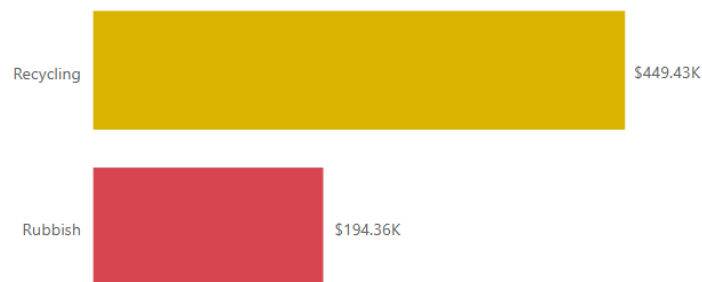


Figure 17: Annual theoretical value (\$) of eligible containers in the recycling and rubbish streams

5 COMMERCIAL WASTE GENERATION AND COMPOSITION

5.1 Commercial generation by weight

Overall, a total of 726 kgs sourced from 58 commercial premises was physically audited and sorted to 32 categories. This comprised 47.43% (344.5 kgs) rubbish and 52.57% (381.9 kgs) recycling.

Generation (kg / percentage) by Collection Stream



Generation (kg) by Day

Stream ● Rubbish ● Recycling

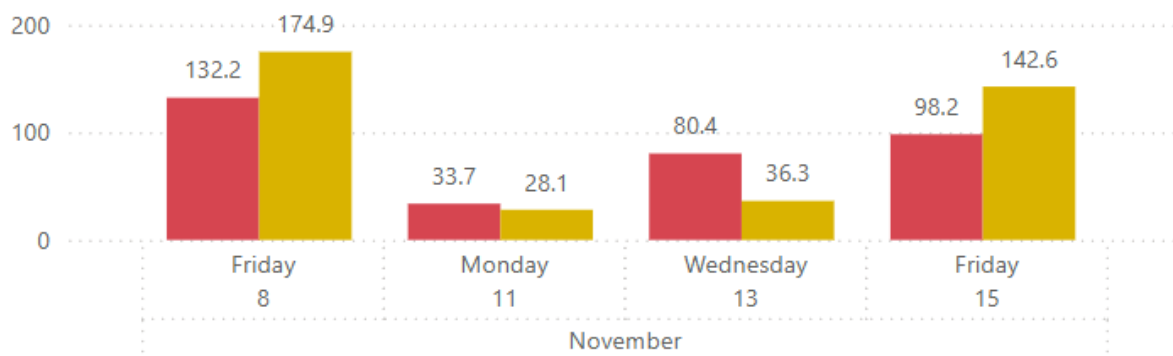


Figure 18: Commercial waste generation by weight, stream and day

Stream ● Recycling ● Rubbish

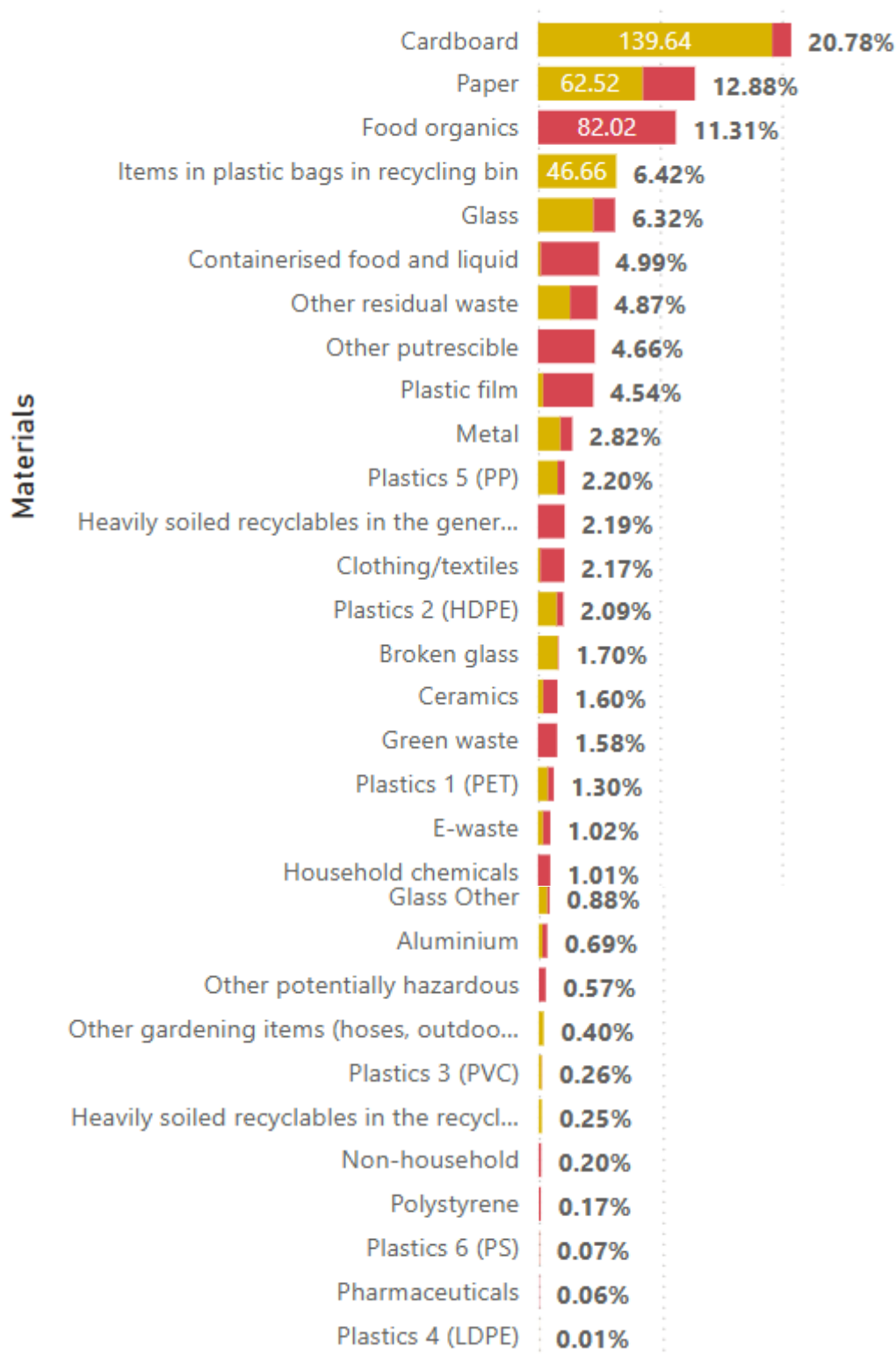


Figure 19: Commercial waste composition by proportion and stream

5.1.1 Rubbish stream composition – commercial

Of the total rubbish stream, organics comprised 47.03% by weight, followed by commingled recyclables (22.63%), which included paper, cardboard, plastics (PET, HDPE and PP), glass metal and aluminium.

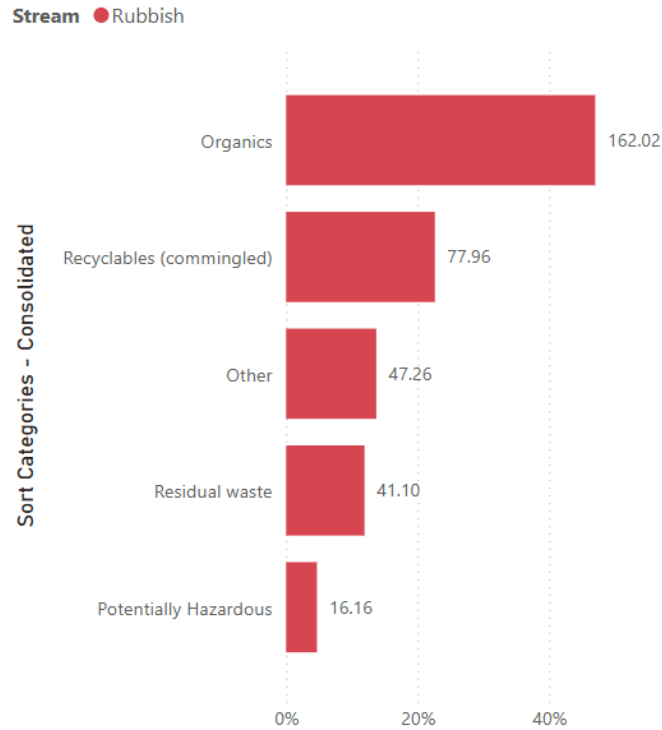


Figure 20: Composition of the rubbish stream by consolidated categories and weight

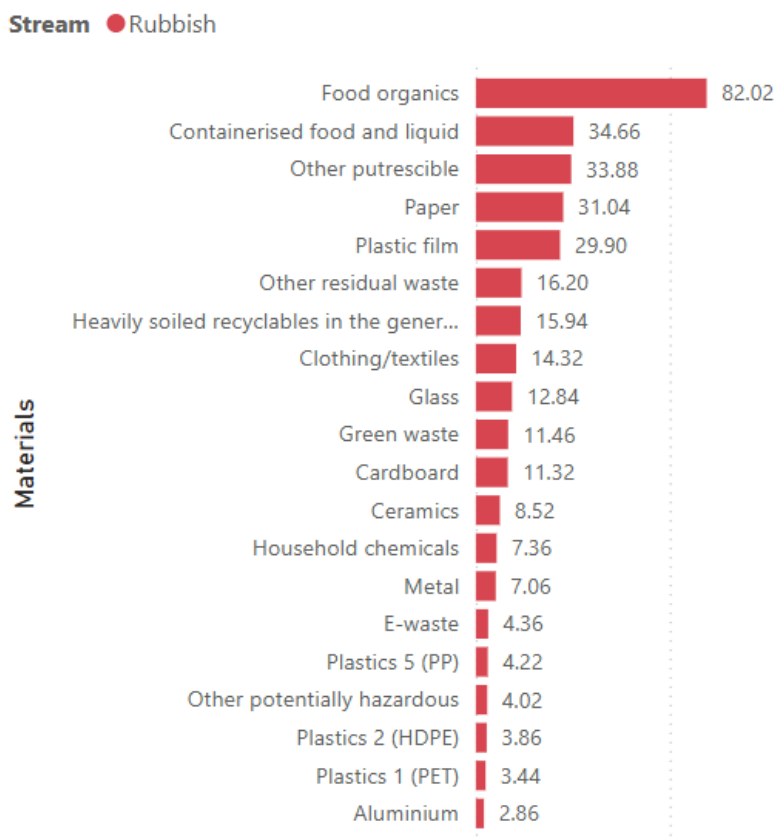


Figure 21: Composition of the rubbish stream top 20 Sort categories by weight

5.1.2 Recycling stream composition – commercial

Of the total recycling stream commingled recycling comprised 74.61% by weight, followed by bagged materials (12.22%) and residual waste (9.85%). Potentially hazardous waste comprised 0.82% of commercial recycling stream weight.

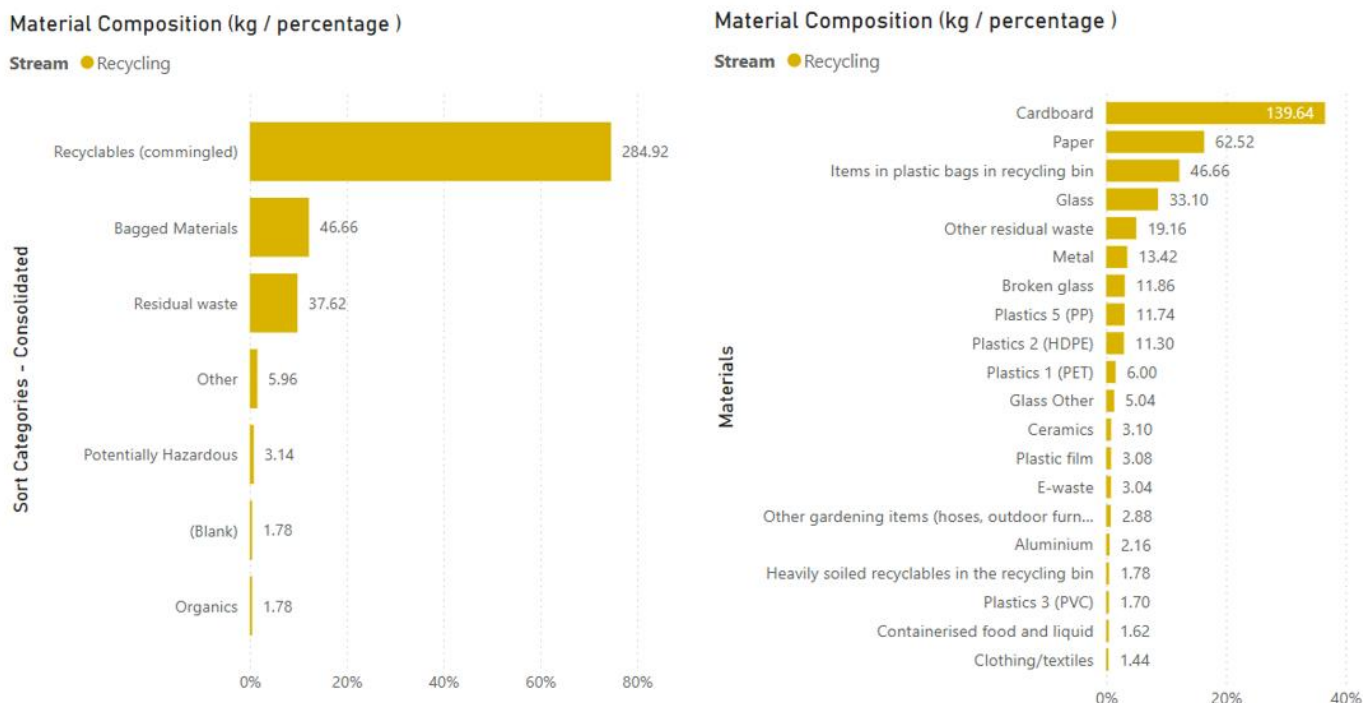


Figure 22: Commercial recycling composition consolidated and top 20 sort categories

5.1.3 Composition of contamination in commercial recycling

Contamination in the commercial recycling stream comprised bagged materials (48.1%), by weight, followed by residual waste (38.8%), Other (6.1%), Potentially hazardous (3.2%) and Organics (1.8%)

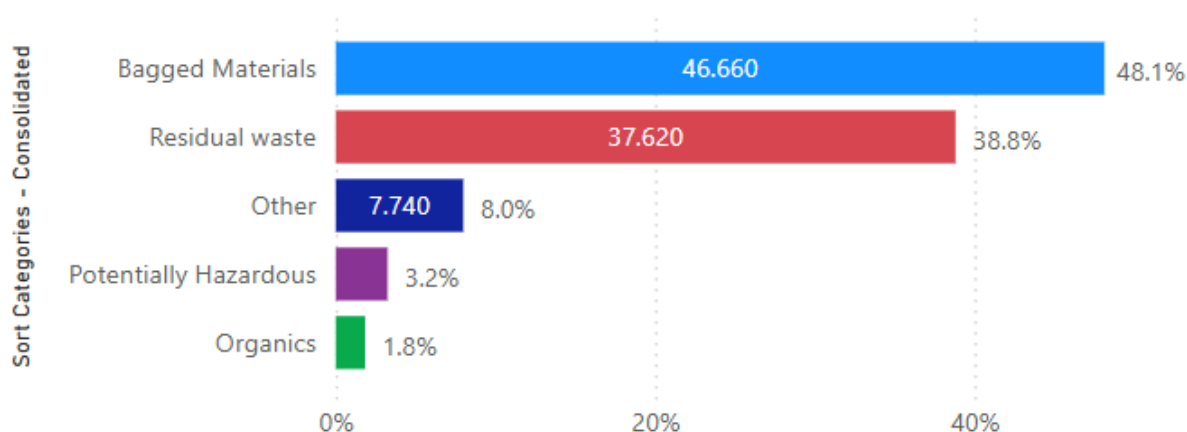


Figure 23: Composition of contamination found in commercial recycling consolidated categories

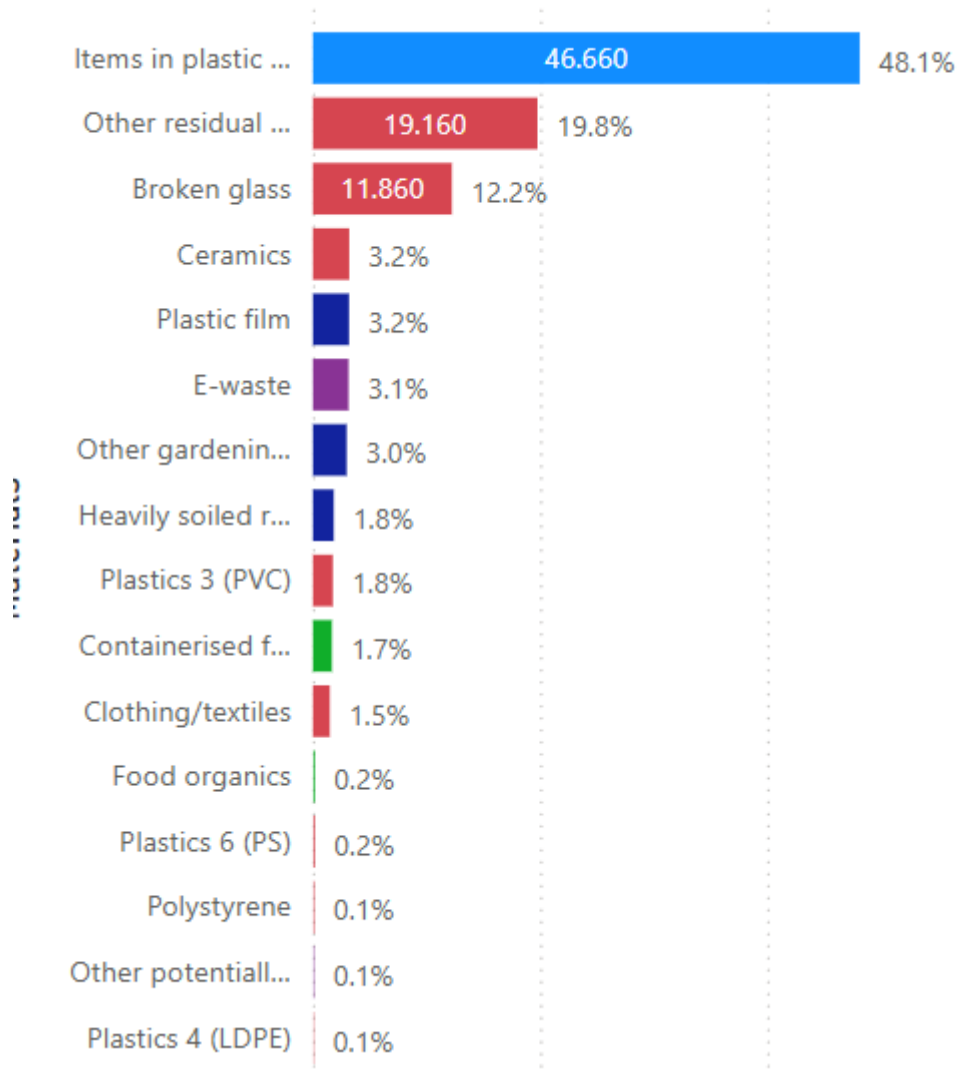


Figure 24: Composition of contamination by sort category

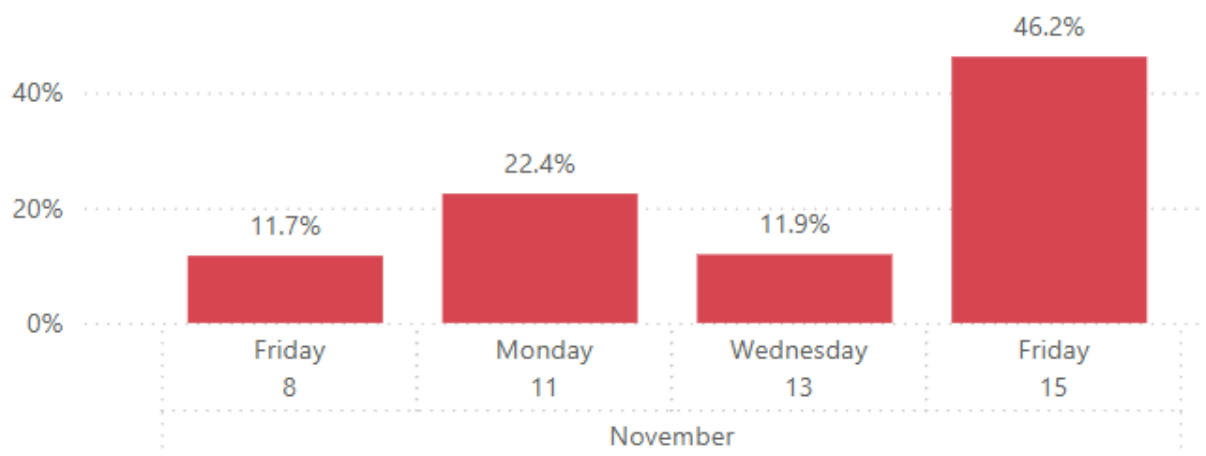


Figure 25: Percentage contamination by collection day

5.1.3 Opportunities within the commercial rubbish stream

Figure 26 identifies the composition of the rubbish stream by sort category and proportion that represent opportunities to improve resource recovery from the commercial rubbish stream.

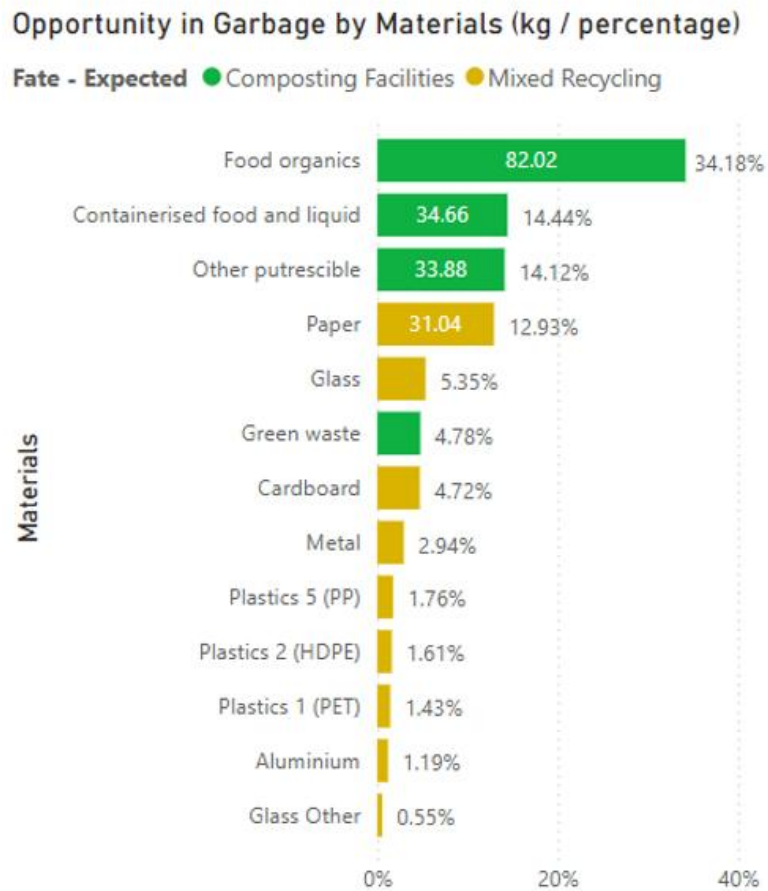


Figure 26: Composition of organics found in the commercial rubbish stream

Organics comprised 67.5% of the commercial rubbish stream. This category included food organics (34.18%), containerised food and liquid (14.44%), which if decanted could potentially increase food recovery, Other putrescible (14.12%) and green waste (4.78%).

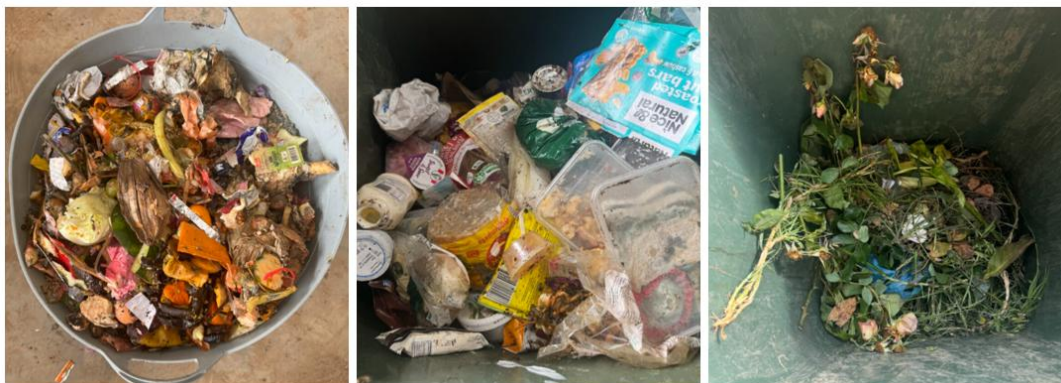


Image 3: Opportunities within organics category found in commercial rubbish – food waste, containerised food and liquids and green waste

Commingled recyclables comprised 32.5% of the total commercial rubbish stream, by weight and included paper (12.93%), glass (5.35%), cardboard (4.72%), metal (2.94%) and recyclable plastics (PP 1.76%, HDPE 1.61% and PET 1.43%, comprising a total of 4.8%).

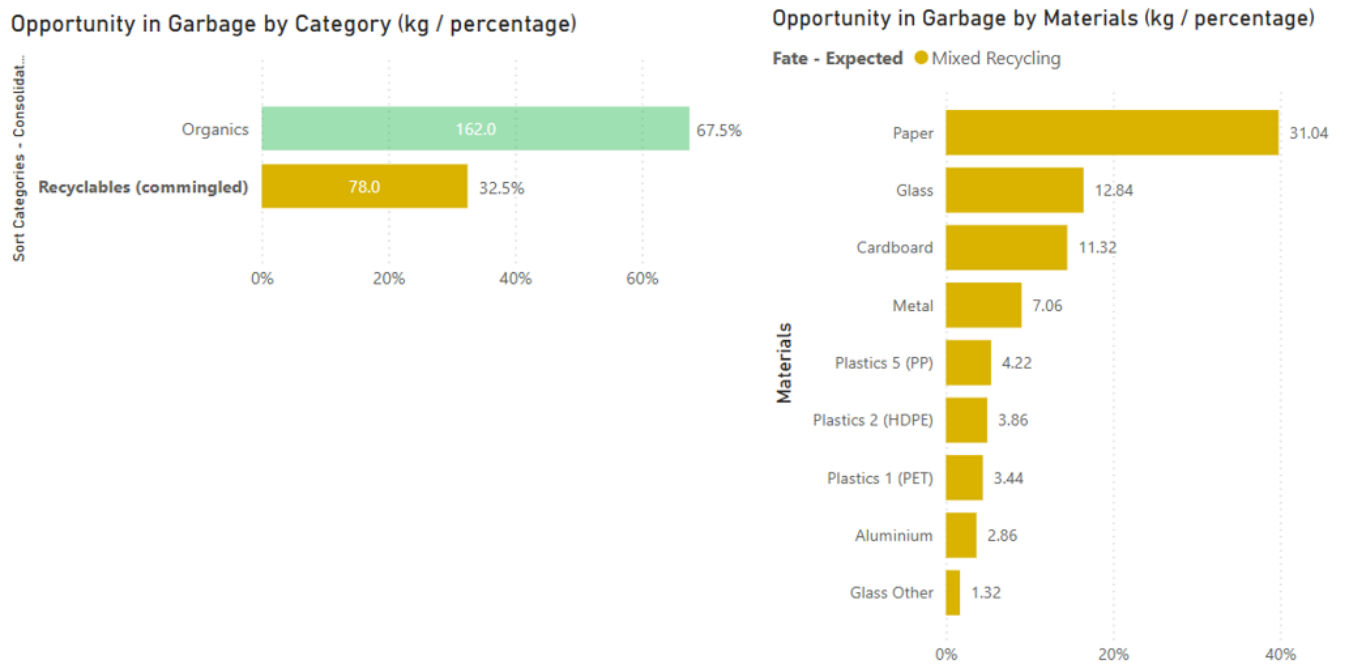


Figure 27: Opportunities within commingled recyclables category found in commercial rubbish



Image 4: Examples recyclables found in commercial rubbish

6. DISCUSSION

The waste audit facilitated an indicative assessment of wastes generated by 251 households (single-unit dwellings) and 58 businesses.

The results provide valuable information about the composition of the waste, in particular opportunities for improved resource recovery and diversion from landfill. The audit will also inform Council's strategy for the introduction of additional kerbside collected glass and FOGO for households.

The recovery rate indicates how much material is being diverted from landfill. It is typical to measure resource recovery at the point of collection, however it does not reflect the true resource recovery rate. Best practice is to factor in contamination identified through the audit to determine the true recovery rate.

6.1 Household Recovery Rates

The household recovery rate at the point of collection (A) when adjusted for contamination was 26.27% (C) a decline of 4.59% (B). The audit also detailed the potential for improved resource recovery 49.61% (D). Theoretically the audit found that there is potential to increase recovery from the rubbish stream by up to a maximum of 75.88% by weight.

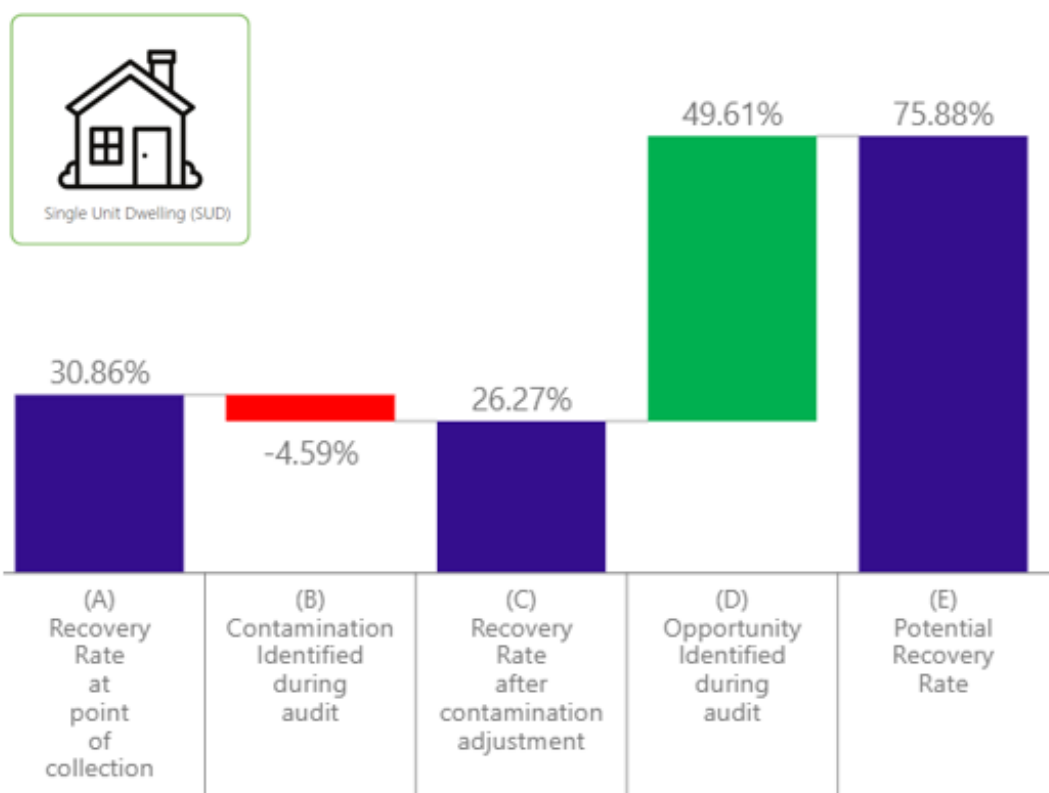


Figure 28: Overview of current and potential household resource recovery rates for SUD households

Overall, organics represented almost 43% of the waste streams combined (1,878 kgs) and more than 85% of the opportunity available in the rubbish stream to increase resource recovery. The remaining 15% is recycling material in the rubbish stream.

Overall, Glass (452kgs) by weight represented 13.5% by weight of the recycling stream.

The audit found that the top 5 opportunities for resource recovery in rubbish stream were: food organics (31.42%), green waste (27.88%), containerised food (15.08%) which if decanted could be recovered, other putrescible (10.8%) and paper (3.75%).

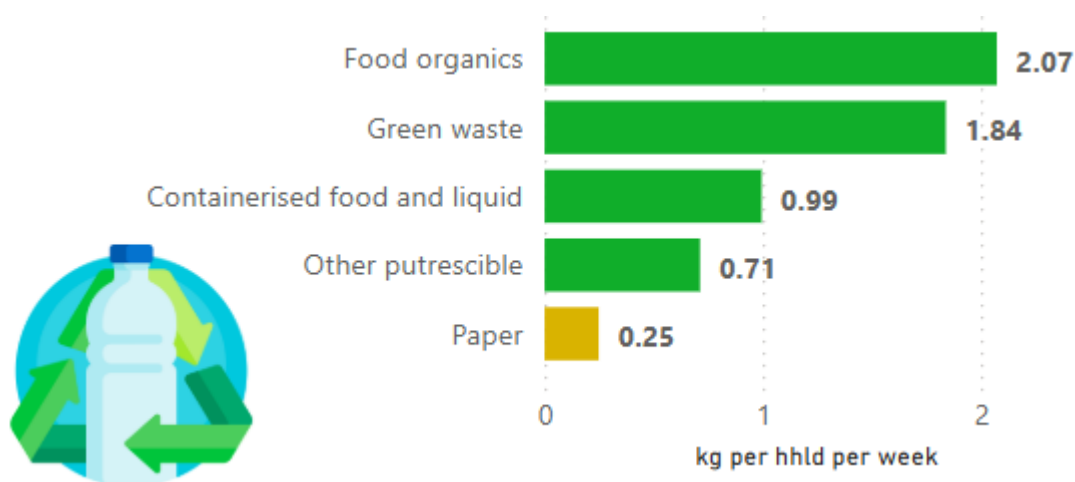


Figure 29: Overview of top 5 opportunities for resource recovery household rubbish stream

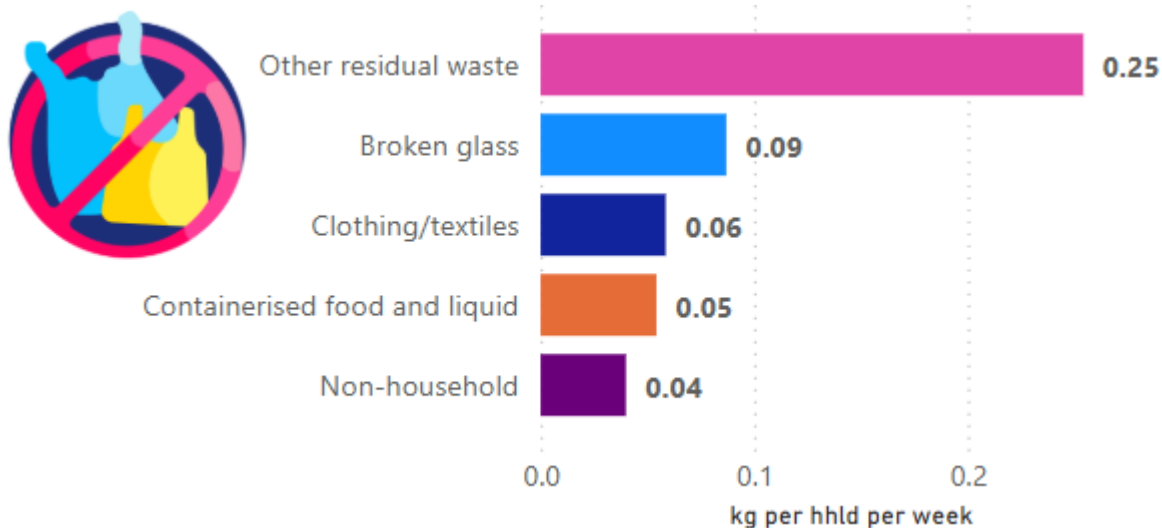


Figure 30: Overview of the top 5 contaminants in recycling

Figure 30 indicates the top 5 contaminants found in recycling stream by weight. Residual waste (41.6%), broken glass (14.2%), clothing/textile (9.6%), containerised food and liquid (8.9%) and non-household waste (6.5%).

Specific education campaigns encouraging responsible household behaviours such as using the correct bin to dispose of rubbish and avoid contaminating recycling are encouraged could theoretically reduce contamination of this stream by up to 41.6%. Targeting clothing/textiles and broken glass can

potentially reduce contamination by 23.8%. Recyclables not currently accepted for recycling, such as plastics 3, 4 & 6 (PVC, LDPE, PS) comprise 2.5%.

Potentially hazardous waste, primarily e-waste, was identified in the recycling stream. E-waste should not be put in kerbside bins as it contains toxic substances that are hazardous to the environment, posing risks to wildlife and human health. Batteries, individually or as a component of an electronic device, can also present fire hazard, especially lithium-ion batteries which if damaged or improperly handled, can ignite. Education campaigns about the impacts of hazardous waste, how to safely dispose or recycle at specific drop off locations can reduce these risks.

It was encouraging to note that items in plastic bags represented 0.02 kgs (0.48%) of the recycling stream, indicating the success of Council's waste education program.

6.2 Commercial Recovery Rates

The commercial recovery rate at the point of collection (A) when adjusted for contamination was 39.23% (C) a decline of 13.35% (B). The audit detailed the potential for improved resource recovery 33.04% (D). Theoretically the audit found that there is potential to increase recovery from the rubbish stream by up to a maximum of 72.26% by weight.

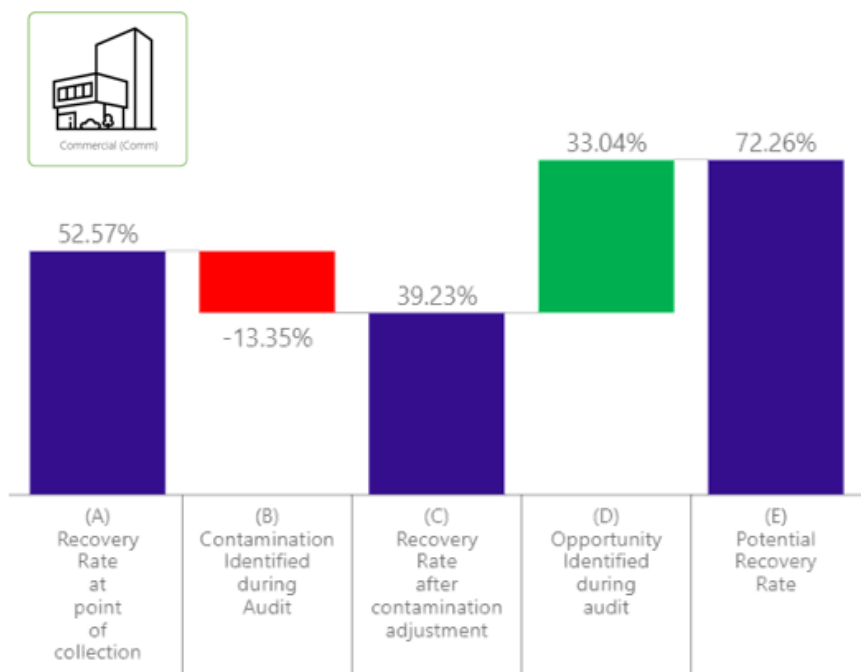


Figure 31: Overview of current and potential resource recovery rate for commercial waste

The top 5 opportunities in the commercial rubbish stream were food organics (34.18%), containerised food and liquid (14.44%), other putrescible (14.12%), paper (12.93%) and glass (5.35%).



Figure 32: Overview of the top 5 opportunities in the commercial rubbish stream

The top 5 contaminants in the commercial recycling stream were bagged materials (48.1%), other residual waste (19.8%), broken glass (12.2%), ceramics (3.2%) and plastic film (3.2%).

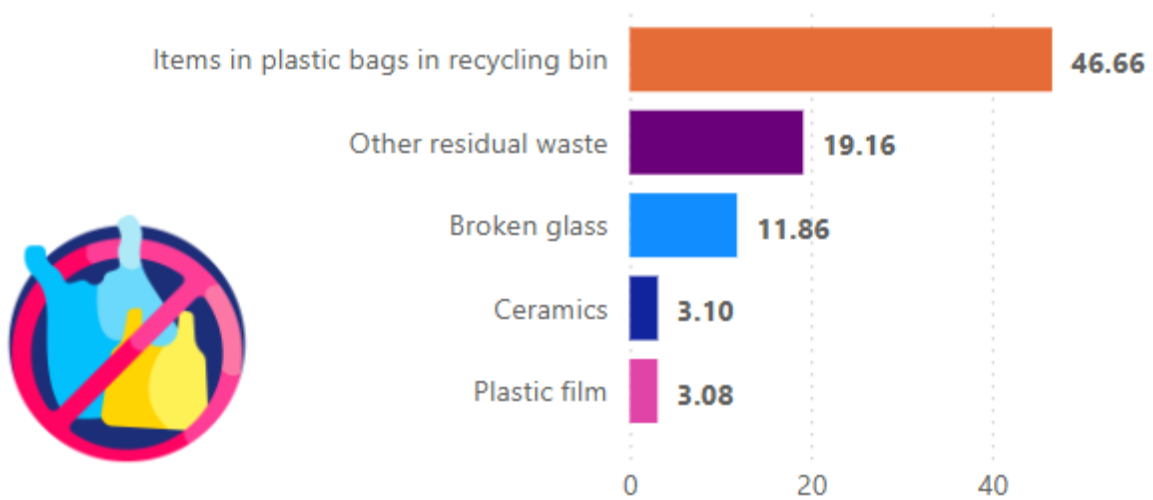


Figure 33: Overview of the top 5 opportunities in the commercial rubbish stream

Specific education campaigns and incentives to encourage responsible waste management behaviours such as source separating recyclables and disposing loose and not bagged recyclables can positively impact the commercial recovery rate. This could be a “quick-win” as commercial businesses currently have access to recycling collections.

Recovering organics from the rubbish stream provides further opportunity to reduce waste to landfill as it comprised 47% of this waste stream.

8 HISTORICAL ANALYSIS

Further analysis was undertaken to compare the results of the 2024 audit with a previous audit undertaken by Council in 2016.

8.1 Combined average weekly waste generation

Comparing the results of the 2024 audit with that undertaken in 2016 reveals a 5% (0.7kgs) reduction by weight in the combined average weekly waste generation per household per week, comprising 0.6 kgs reduction in the recycling stream 0.1kgs in the rubbish stream as detailed in Figure 31.

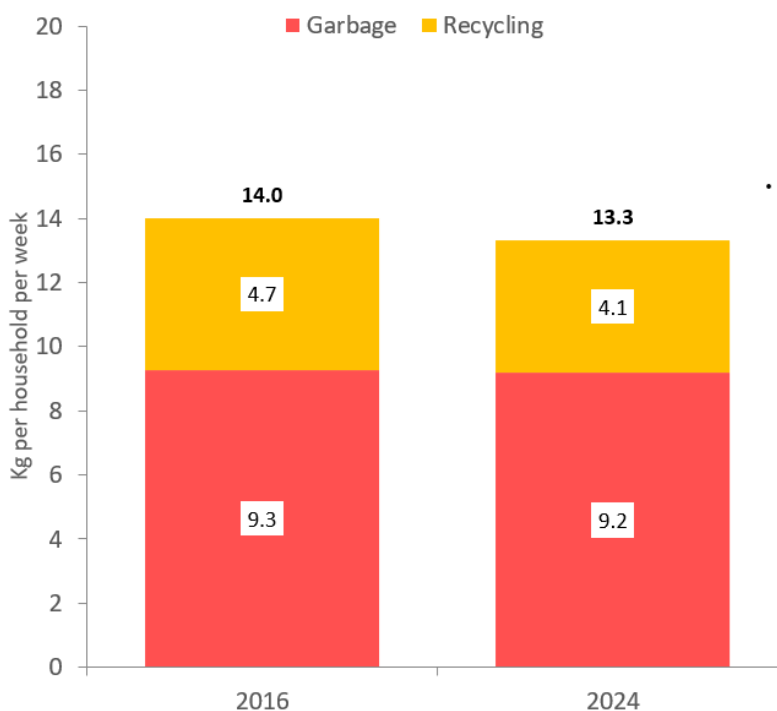


Figure 34: Historical comparison of combined average weekly waste generation

8.2 Comparison of consolidated composition of household rubbish stream with previous audit

Figure 35 compares the findings of the two audits by consolidated categories by weight

When compared to the results in 2016, the 2024 audit found that on average residual waste increased by 1.7kgs (67%) per household per week, E-waste by 0.04kgs (133%) and Polystyrene 0.001 kgs (33%). All other consolidated waste categories declined between 2016 and 2024 with Food Waste declining by 1.57kgs (43%), Commingled Recyclables 0.15kgs (13%) and Garden Organics 0.11 kgs (5.6%).

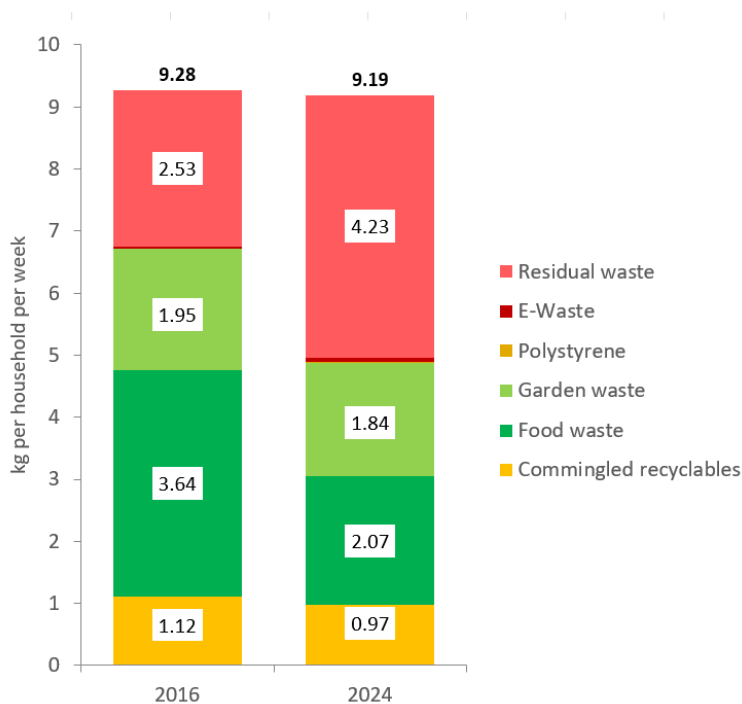


Figure 35: Historical comparison of consolidated composition of household rubbish stream by weight

8.3 Comparison of consolidated composition of commingled recycling stream with previous audit

Figure 36 compares the findings of the 2024 audit of the commingled recycling stream with the previous audit undertaken in 2016.

When compared to the results in 2016, the 2024 audit found that on average commingled recyclables declined by 0.7kgs (17%) per household per week.

When compared to the results in 2016, the 2024 audit found on average per household per week the following contaminants declined including bagged recycling 0.00kgs (100%) followed by Food Waste 0.05kgs (93%), Garden waste 0.004 (83%).

Residual waste increased between 2024 and 2016 on average by 0.34kgs (106%) per household per week, followed by bagged garbage/food 0.01kgs (13%) and E waste 0.002 kgs (13%).

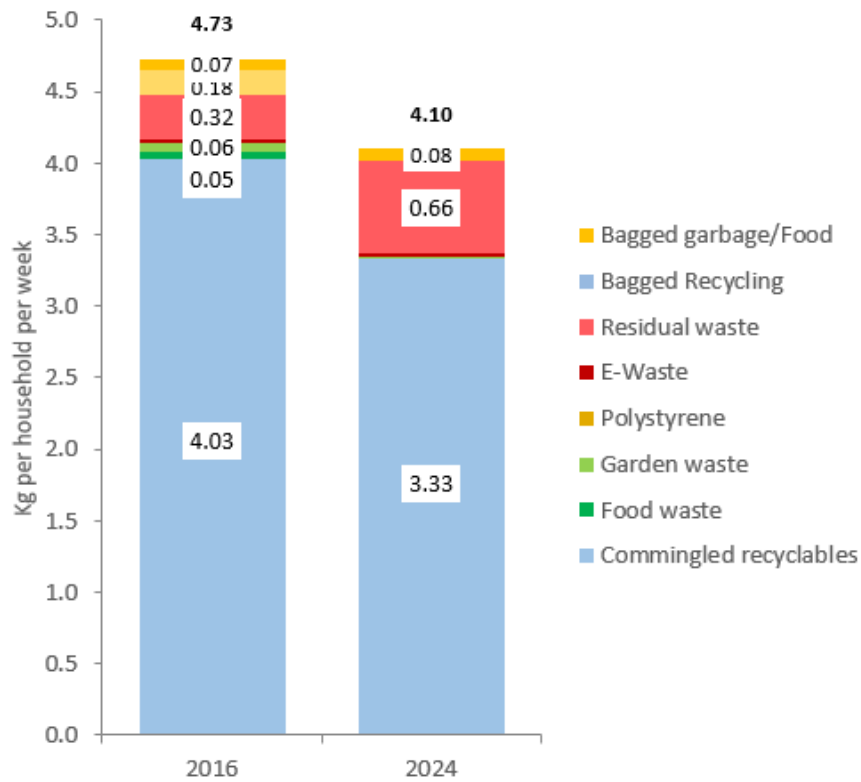


Figure 36: Historical comparison of consolidated composition of commingled recycling by weight

Figure 37 provides a proportional representation of the consolidated commingled recycling stream and comparison between the two audits.

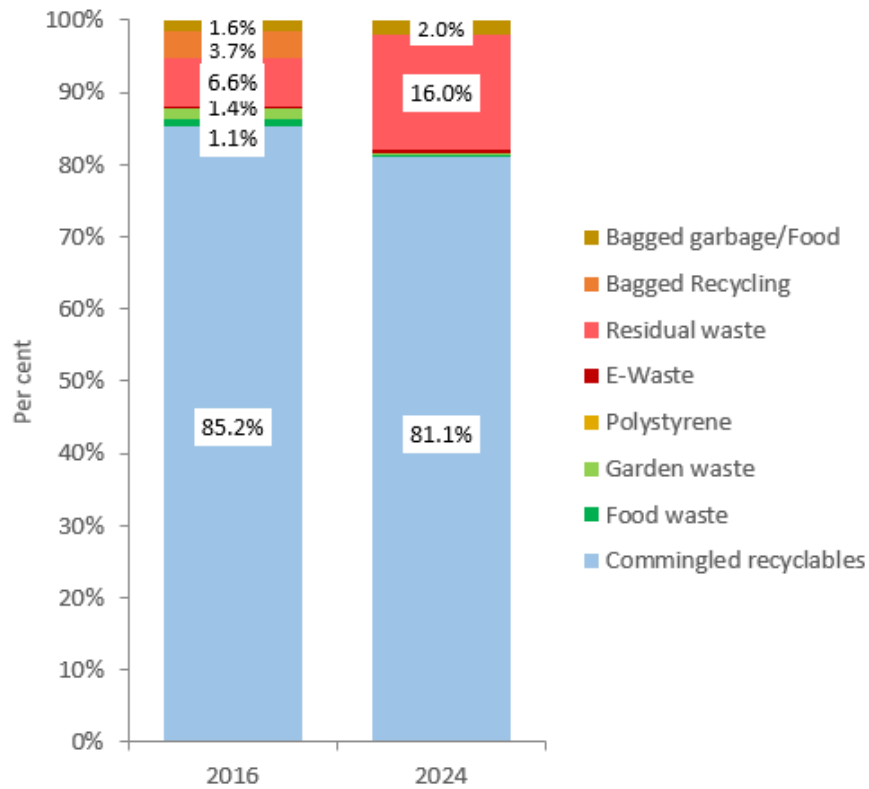


Figure 37: Historical comparison of consolidated composition of commingled recycling by proportion

8.4 Historical Comparison Household Recovery Rates

Figure 38 facilitates a comparison of the findings of the 2016 and 2024 audits, in particular the improved resource recovery and diversion from landfill at the time of the audits.

The recovery rate indicates how much material is being diverted from landfill. It is typical to measure resource recovery at the point of collection; however, it does not reflect the true resource recovery rate. Best practice is to factor in contamination identified through the audit to determine the true recovery rate.

Comparing the two audits, the household recovery rate at the point of collection (A) when adjusted for contamination was 28.8% (C) a decline of 5% (B) in 2016 and 26.3% (C) a decline of 4.59% (B). The audit also detailed the potential for improved resource recovery 47.9% (D) in 2016 and 49.61% (D) in 2024.

In 2016, the audit found that 40% of the potential opportunity for recovery from the rubbish stream was garden and food organics, compared to 42.3% in 2024. A further 8.0% could have been recovered if recycling was placed in the correct bin in 2016 compared to 7.4% in 2024.

Theoretically, the 2016 audit found that there was potential to increase recovery by up to a maximum of 76.7% (E) and in 2024 by up to 75.9% by weight, through the recovery of garden organics, recovery and minimising food waste and by optimising commingled recycling services and alternate pathways for E-waste

Theoretically the potential for recovery (E) has remained fairly consistent when comparing the 2016 and 2024 audit results.

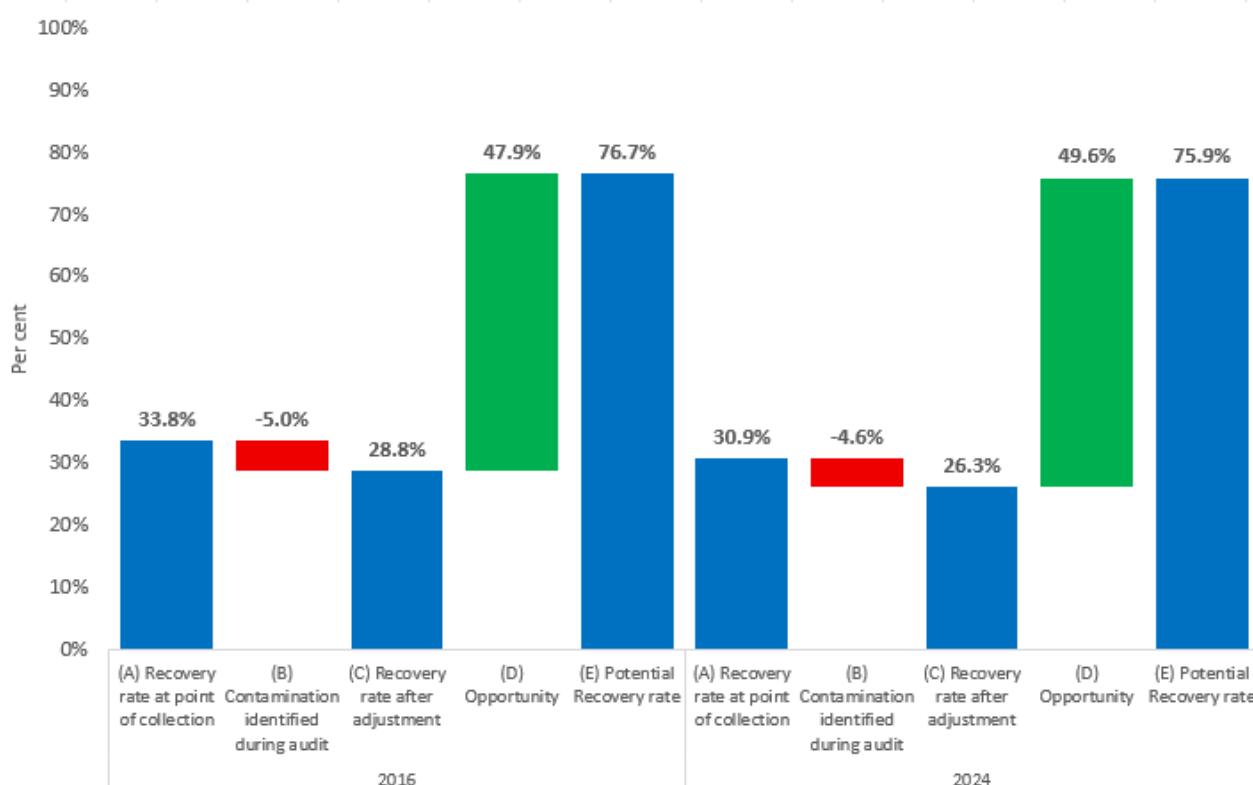


Figure 38: Historical comparison of consolidated composition of commingled recycling by proportion

8. COMPARING WELLINGTON SHIRE COUNCIL'S RESULTS WITH THE STATE AVERAGE

Section 8 compares the findings of the 2024 waste audit with the state average as documented by Recycling Victoria Department of Energy, Environment and Climate Action and published annually on the Victorian Government website¹.

Figure 39 compares the average combined weight of the rubbish and commingled recycling streams per household per week for Wellington Shire Council and other Victorian councils.

It is noted that Council's commingled recycling per household per week exceeds the state average by 56%. The average weekly weight per household of the rubbish stream is consistent with the state average where councils provide a two bins service and is 37% more by weight than councils that providing organic collection services.

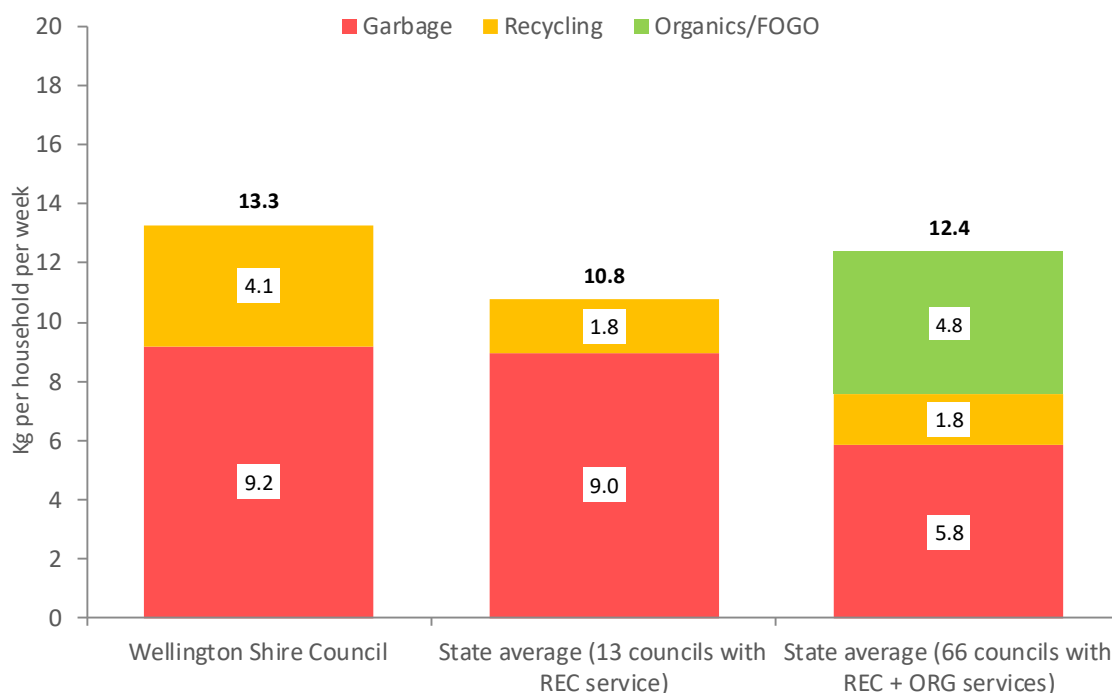


Figure 39: Comparison of Wellington Shire Council with State averages by weight by services

Figure 40 provides a comparison of the findings of the 2024 waste audit specifically comparing the results of Council's commingled recycling with the state average. Proportions are similar for each of the consolidated categories, with the exception of contamination with is 14% less than the state average.

¹ Local Government Waste Data Dashboard2024 <https://www.vic.gov.au/victorian-local-government-waste-data-dashboard>.

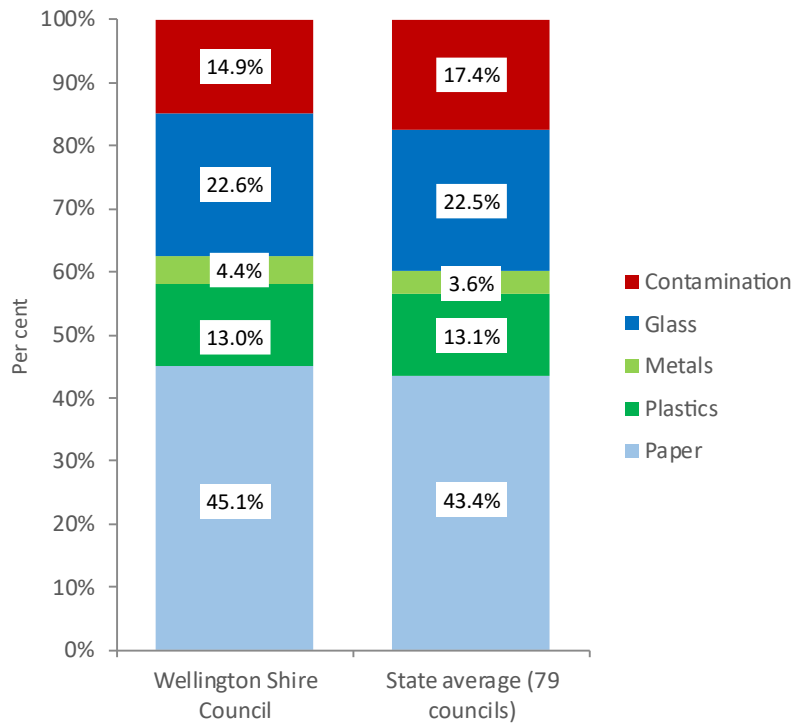


Figure 40: Comparison of consolidated commingled recycling with the state average

Figure 41 compares the diversion of waste from landfill achieved by council with the state averages for councils providing two bin and three bin services.

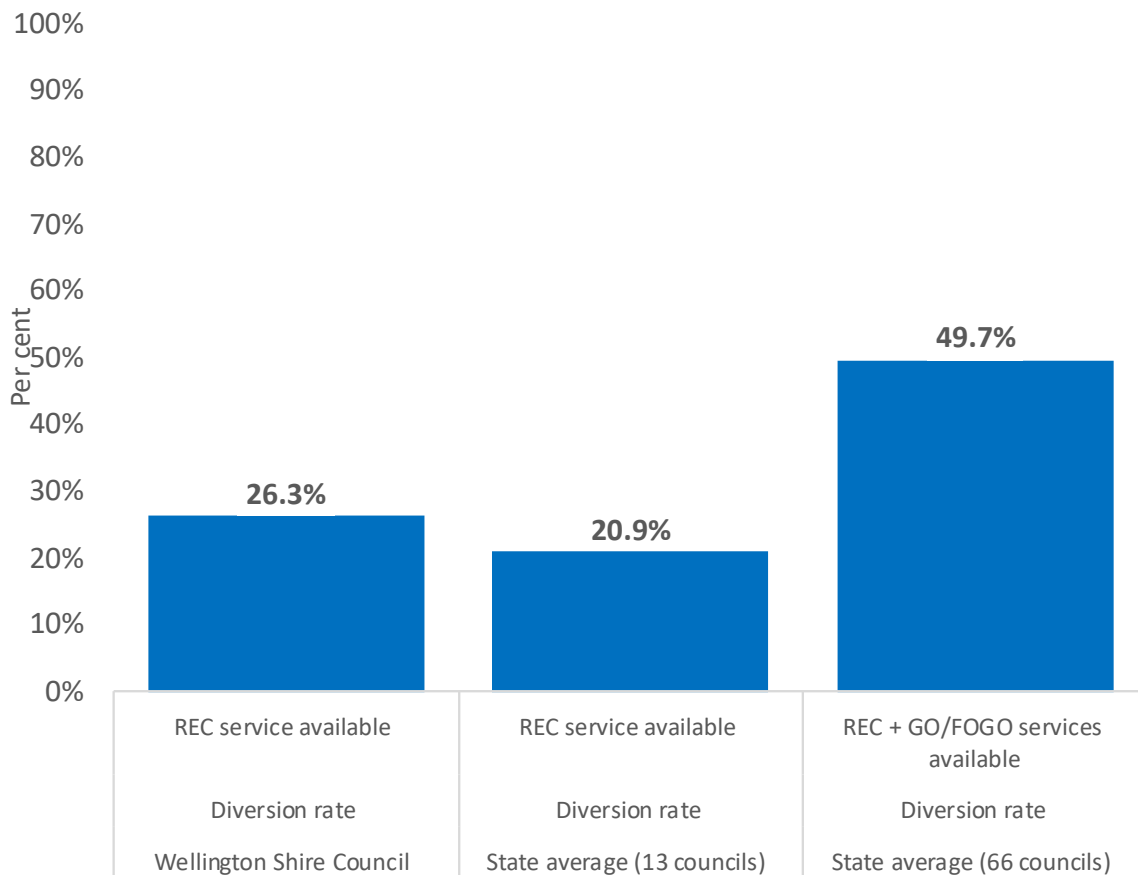


Figure 41: Comparison of diversion rate with state averages for two bin and three bin services

9. RECOMMENDATIONS

Wellington Council commissioned the waste audit to inform future service initiatives. The following suggested recommendations are proposed in view of the above and the audit findings:

- Continue to monitor the service following the introduction of FOGO and segregated glass collections.
- Consider the options for segregated glass recovery (glass represented 13.5% by weight of the household recycling stream, 10.3% of the combined household waste streams by weight and in the commercial sector 6.3% by weight of the combined waste streams).
- Continue to develop education strategies to encourage responsible behaviour amongst residents, including campaigns targeting and incentivising desired behaviours, for example providing branded reusable bags to convey recyclables to the bin.
- Continue to encourage the use of alternative recovery pathways for the disposal of textiles, e-waste, batteries etc
- Investigate partnerships to offer free drop-off points for worn out and damaged textiles (i.e. clothing, shoes and accessories), as well as a broader education campaign stimulating residents to use the available drop-off points.
- Continue to remind residents about the impacts of hazardous waste, especially e-waste and batteries, and how to manage and recycle responsibly at specific drop off sites.
- Advocate for inclusion of wine and spirits glass bottles in Victoria's Container Deposit Scheme.
- Investigate ways to support and encourage responsible waste management behaviour through incentives such as recognition, awards, rebates, and vouchers designed to assist residents to better manage their waste.
- Keep informed of the status of emerging opportunities, particularly soft plastics processing (ie. soft plastics recycling trial in 12 Melbourne metro suburbs launched February 2024 and developed through the Soft Plastics Taskforce). Possible partnership with third party contractors providing resident pick up and drop off service for soft plastics
- Investigate partnerships to trial dry expanded polystyrene (EPS) recycling usually used for packaging of appliances and electronics.

APPENDIX A PROPOSED SORTING CATEGORIES

WELLINGTON COUNCIL_ Sorting Date: _____

Circle Stream: GAR / REC

Dwelling type: SUD / COMMERCIAL

Bagged garbage _____

Bagged recycling _____

Weight of unbagged garbage	(minus from net truck wt)	
Material Type	Grams	
Recyclables (commingled)		
Paper		
Cardboard		
Plastics 1 (PET)		
Plastics 2 (HDPE)		
Plastics 5 (PP)		
Glass (as applicable to RV draft Service standards)		
Glass Other		
Metal		
Aluminium		
CDS Eligible container count	COUNT	
Organics		
Green waste (as applicable to RV draft services standards) e.g. same as NSW		
Food organics (as applicable to RV draft services standards) same as NSW		
Containerised food and liquid		
Other putrescible		
Residual waste		
Polystyrene		
Broken glass		
Ceramics		
Plastics 3 (PVC)		
Plastic 4 (LDPE)		
Plastic 6 (PS)		
Clothing/textiles		
Other residual waste		
Potentially hazardous	Weight	Count
E-waste		
Paint		
Household chemicals		
Pharmaceuticals		
Other potentially hazardous		
Other		
Non-household -Specify		
Contamination		
Items in plastic bags in recycling bin		
Other gardening items (hoses, outdoor furniture, plant pots)		
Recyclable items not in recycling bin		
Heavily soiled recyclable items in recycling bin		