

Residential and Public Place Bin Survey 2022

Mount Alexander Shire Council commissioned a bin survey of residential and public place bin generation and contents composition. The survey was conducted in July 2022 by an experienced contractor, EC Sustainable Pty Ltd, using state-wide guidelines from the Metropolitan Waste and Resource Recovery Group (MWRRG) and Sustainability Victoria (SV).

The survey provides Mount Alexander Shire Council with an assessment of the performance of their residential and public place bin systems.

- Residential: A two-bin system with matched waste bins and mixed recycling bins for households.
- Public places: A bin system with stand-alone waste bins and some matched recycling bins.

The data assists Council to plan for future services. Councils in Victoria are expected to transition to provide four waste streams, including additional services for the recycling of organic waste (kerbside bins) and glass bottles and jars (kerbside bins or a drop-off system).

What was involved:

Bin contents were collected on the regular service day, sorted, weighed and disposed or recycled as normal.

Residential bins:

A random sample of 161 households' waste and recycling bins across the Shire.

Overall results are compared with results from four other regional Victorian Councils that have the same two-bin configuration as Mount Alexander Shire Council.

Public place bins:

A random sample of 63 public place bins:

- 38 stand-alone waste bins.
- 13 waste bins matched with 12 recycling bins.

What we found:

Residential bins:

Compared to the Victorian average two-bin system, Council had:

- Positive findings:
 - Recoverable materials in the waste stream were lower.
 - Recycling recovery rate was higher.
- Negative findings:
 - Recycling bin contamination rate was slightly higher.
 - Diversion rate from landfill was slightly lower.

Public place bins:

Matched waste and recycling bins system achieved a high recycling recovery rate and a low recycling bin contamination rate.

Residential bin performance compared to Victoria

The results show the two-bin system was performing well, such that 78.2% of all recyclable materials were correctly disposed into recycling bins. These correctly disposed recyclable materials accounting for 25.7% of all material disposed to the two-bin system, which is the current diversion rate. The diversion rate could increase to 32.9%, if all of the recyclables in the waste bins were correctly placed in the recycling bins.

Garden organics, which can be recovered through a Garden Organics (GO) bin, was 9.3% of the waste bin contents. Food and compostable paper, which can be recovered through a Food Organics and Garden Organics (FOGO) bin, was 24.8% of the waste bin contents. This is a substantial opportunity for Council, which could contribute an additional 20.8% to the diversion rate if FOGO bins were provided.

The summary, in Table A, shows the residential two-bin system bin performance of this study compared to a Victorian average. The Victorian average was based on the results from four other regional Victorian councils (EC Sustainable, 2022) with similar two-bin systems in the same collection configuration; weekly waste bin and fortnightly recycling bin (no organics bin service).

Table A - Residential bin indicators

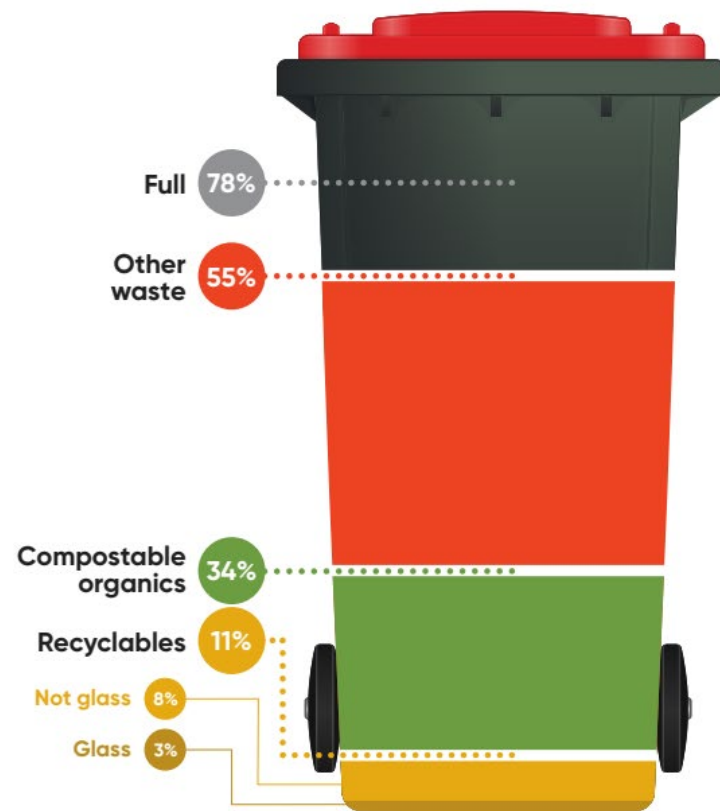
| Data indicator | Unit of measurement | | 2022 | Victorian average |
|-----------------------------|-----------------------------|--------------------------------------|--------------|-------------------|
| Generation rate | By weight (kg/hh/wk) | Waste bins | 9.44 | 9.01 |
| | | Recycling bins | 4.58 | 5.07 |
| | | All bins | 14.02 | 14.08 |
| | By volume (bin % full) | Waste bins | 78.4 | - |
| | | Recycling bins | 81.3 | - |
| Resources in the waste bins | Percentage (% by weight) | Recyclables | 10.7 | 13.1 |
| | | Garden organics | 9.3 | 15.8 |
| | | Food > | 21.6 | 25.5 |
| | | Compostable paper < | 3.2 | - |
| Contamination | Rate | Incorrect material in recycling bins | 15.8 | 14.4 |
| Recovery rate | (% by weight) | Recycling in correct bin | 78.2 | 78.1 |
| Diversion rate | Rate (% by weight) | Current | | |
| | | Kerbside diversion | 25.7 | 30.9 |
| | | Recyclables | 32.9 | - |
| | | Potential # Recyclables and GO | 39.2 | - |
| | | Recyclables and FOGO | 53.7 | - |

< Compostable paper material included shredded paper, paper towels, tissues, contaminated soiled paper and soiled pizza boxes. Compostable paper excluded materials that are compliant in the recycling bin.

> This is loose food. There was additional food in sealed containers.

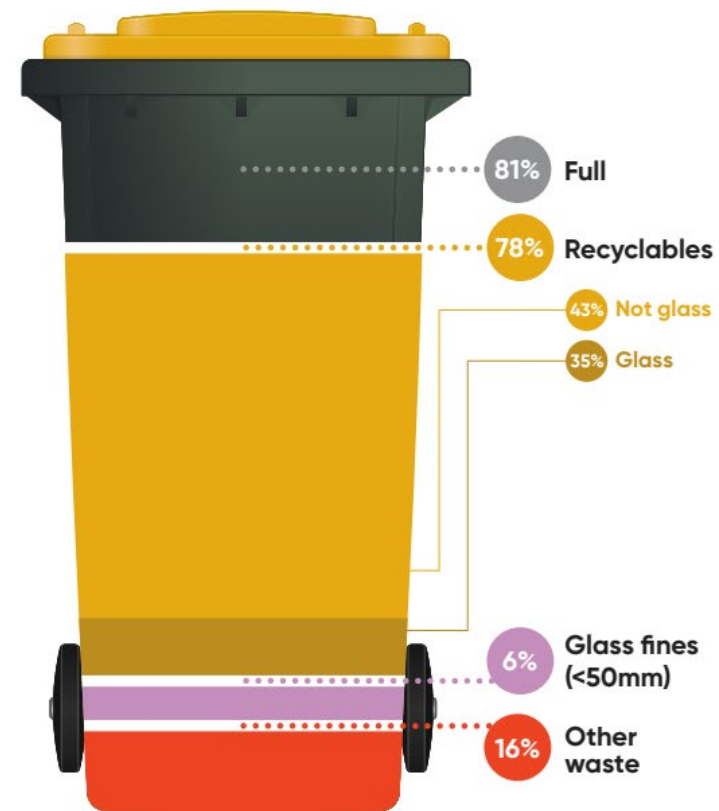
If material(s) in the waste stream were recovered.

2022 residential bin detailed results, generation



Waste Bins

9.4kg/hh/wk

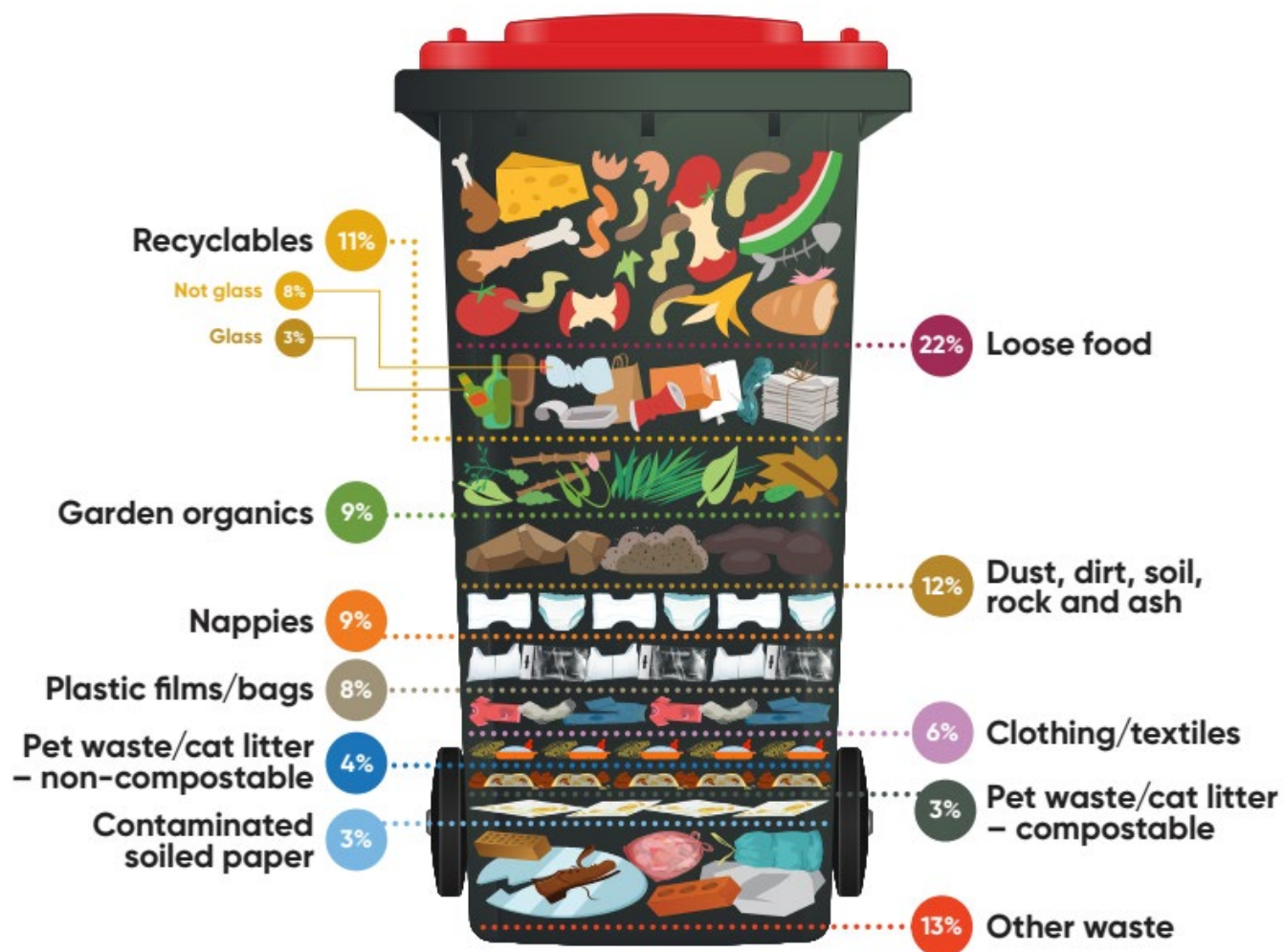


Recycling Bins

4.6kg/hh/wk

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2022 residential bin detailed results, bin composition – waste bin



⊗ RECYCLING: 11%

- Recyclables not glass (8%)
- Recyclable glass (3%)

☑ Compositable organics: 34%

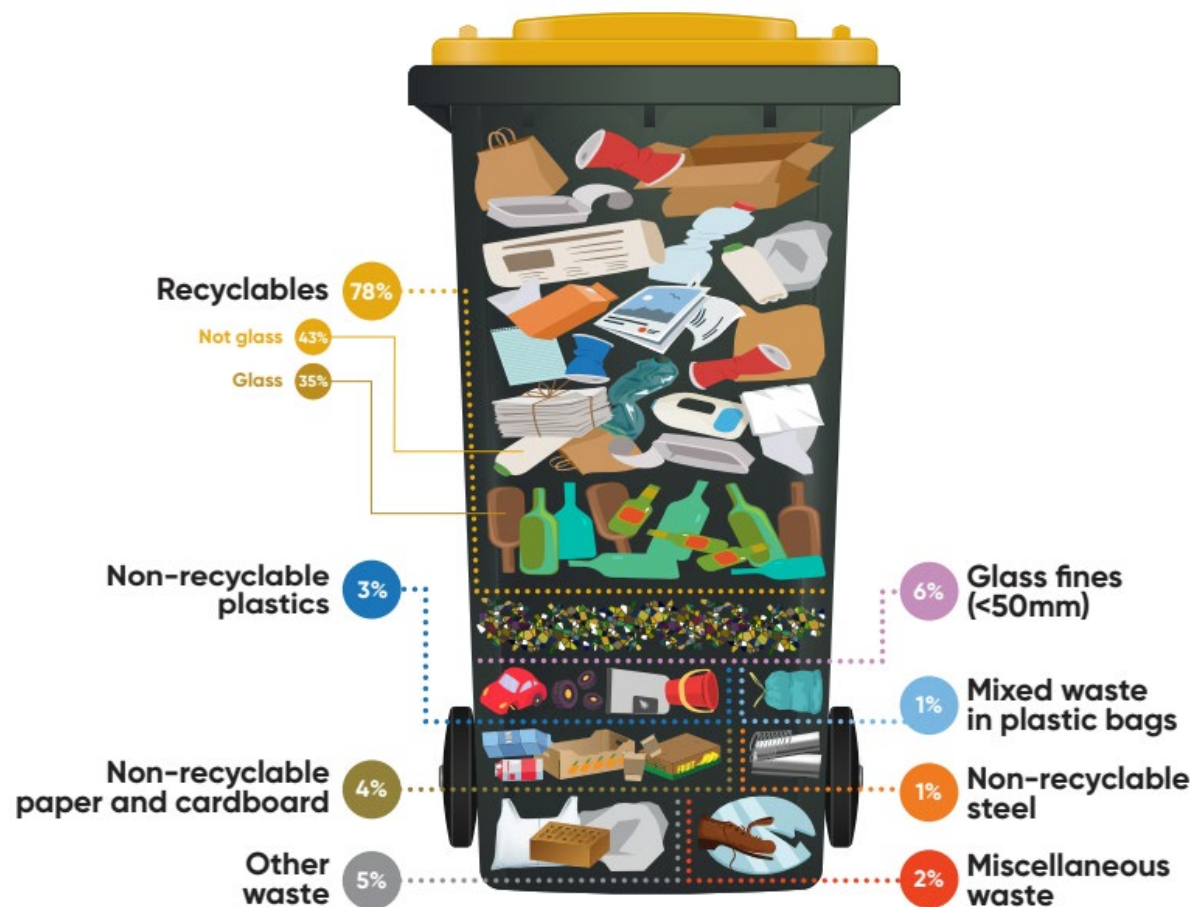
- Loose food (22%)
- Garden organics (9%)
- Compostable paper (3%)

☑ WASTE: 55%

- This was mainly: soil, rock, nappies and sanitary waste, plastic film and textiles.

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2022 residential bin detailed results, bin composition – recycling bin



✓ RECYCLING: 43%

- Containers not glass (16%)
- Paper (13%)
- Cardboard (14%)

✓ GLASS: 41%

- Containers: 35% (including fines $\geq 50\text{mm}$)
- Fines (<50mm): 6%

⊗ CONTAMINATION: 16%

- This was mainly: bagged material and not accepted plastics, metal and waxed cardboard.

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2022 residential bin detailed results, potential CDS beverage container counts



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Public Place bin performance

The results show the matched waste and recycling bins system was performing well, such that 70.4% of all recyclable materials were correctly disposed into recycling bins where a recycling bin was available. In addition, the recycling bins had a low contamination rate for public bins; there was 14.6% material that should not be placed into the recycling bins.

As well as enhancing recovery where recycling bins are present, Council has an opportunity to add recycling bins to stand-alone waste bins to improve the overall system performance. Stand-alone waste bins contained more waste (2.14kg/bin/day) and a similar weight of unrecovered recycling (0.60kg/bin/day) compared to waste bins matched to a recycling bin which contained 1.61kg/bin/day including unrecovered recycling of 0.62kg/bin/day.

Council could also consider other public place bin services, such as communal hubs:

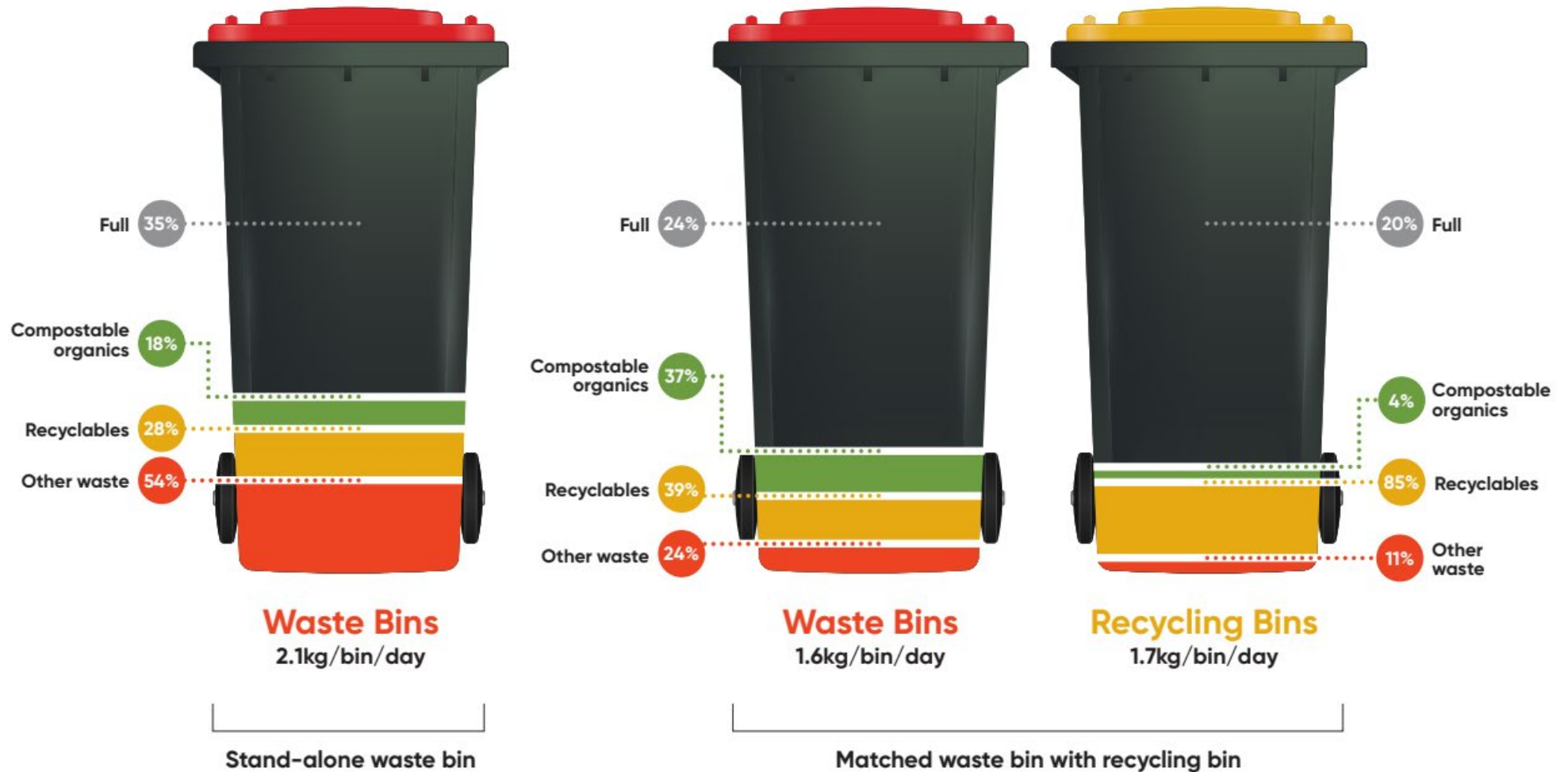
- Glass: waste bins contained 13% recyclable glass and recycling bins 69%.
- Organics: Waste bins contained compostable organics, such as food, compostable paper (tissues, paper towels, soiled paper, soiled pizza boxes and shredded paper) and other putrescible waste (mainly dog poo in bags). For example, this was 18.3% of stand-alone waste bin contents and 37.1% of waste bin contents with a matched recycling bin.

The following summary shows the bin performance of public place bin system, stand-alone waste bins and matched waste and recycling bins.

Table B - Public Place bin indicators

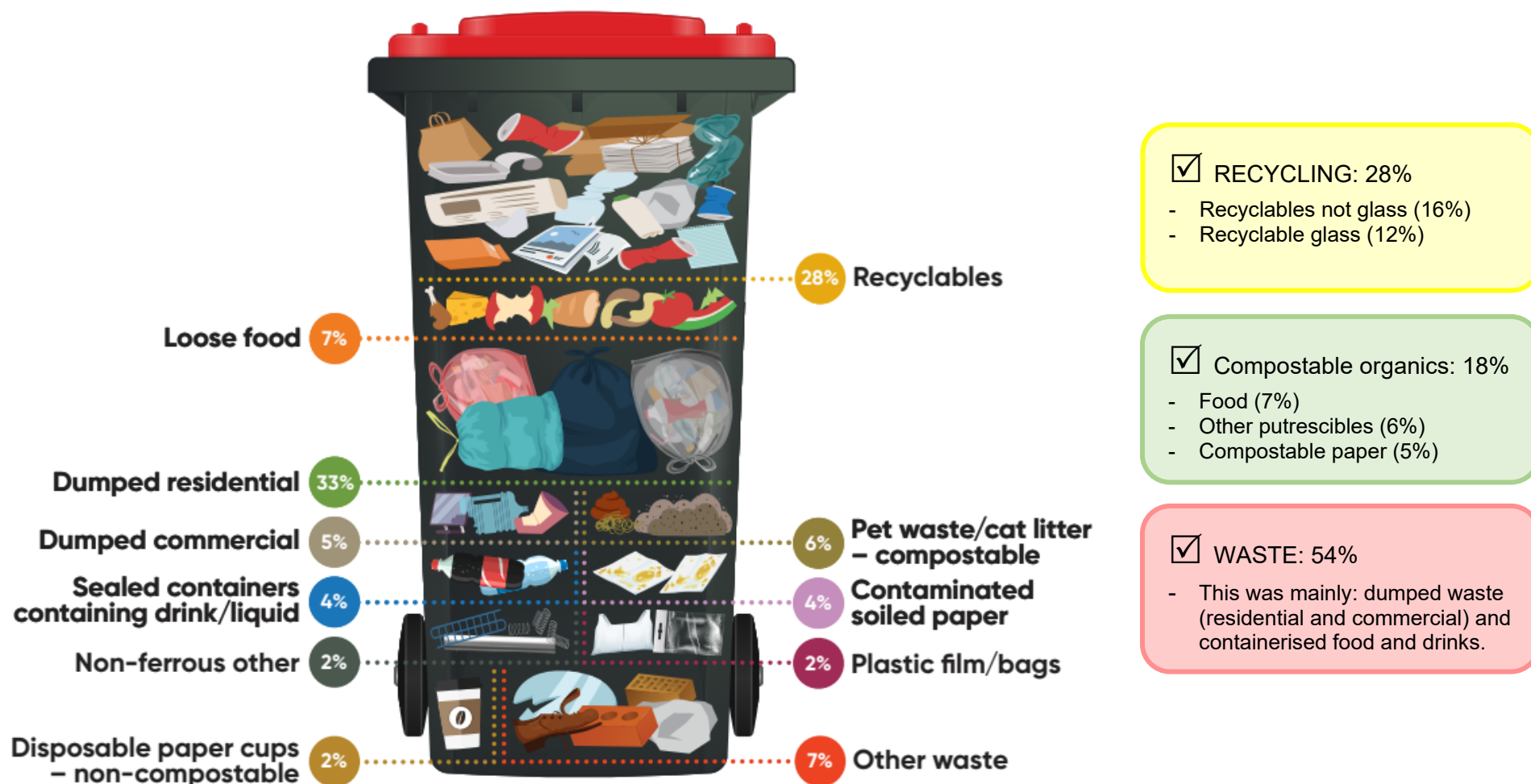
| Data indicator | Unit of measurement | | Waste: stand-alone | Waste: matched with recycling |
|-----------------------------|-----------------------------|--------------------------------------|-----------------------|----------------------------------|
| Generation rate | By weight (kg/bin/day) | Waste bins | 2.14 | 1.61 |
| | | Recycling bins | NA | 1.72 |
| | By volume (bin % full) | Waste bins | 35.4 | 24.2 |
| | | Recycling bins | NA | 20.1 |
| Resources in the waste bins | By weight (kg/bin/day) | Recyclables | 0.60 | 0.62 |
| | | Compostable organics | 0.39 | 0.60 |
| | Percentage (% by weight) | Recyclables | 28.2 | 38.5 |
| | | Compostable organics | 18.3 | 37.1 |
| | | Compostable: food | 7.2 | 17.0 |
| | | Compostable: paper | 4.5 | 2.7 |
| | | Compostable: other putrescible | 6.1 | 13.8 |
| | | | | |
| Contamination | Rate | Incorrect material in recycling bins | NA | 14.6 |
| Recovery rate | (% by weight) | Recycling in correct bin | NA | 70.4 |

2022 public place bin detailed results, generation



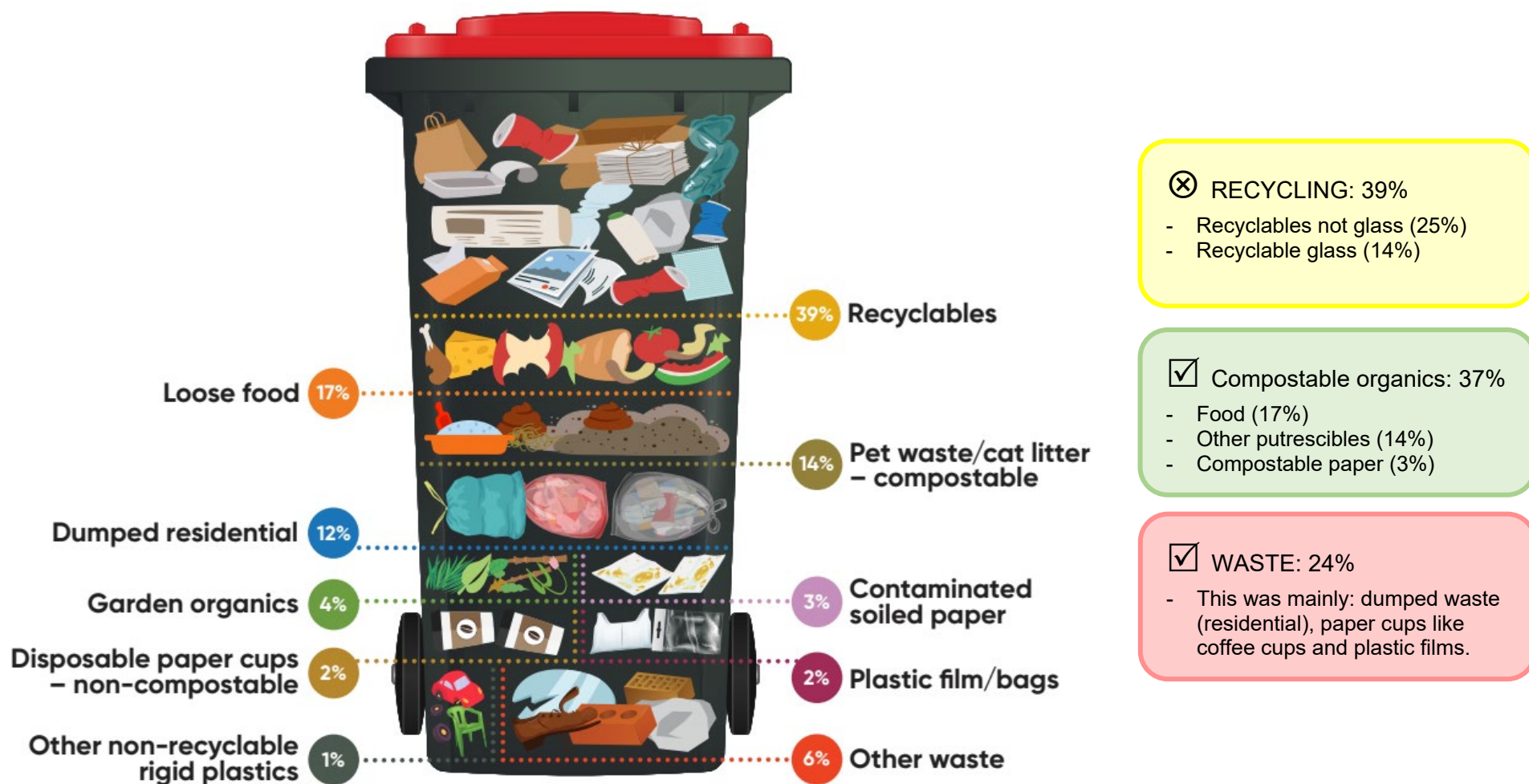
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2022 public place bin detailed results, bin composition – waste bin, stand-alone



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2022 public place bin detailed results, bin composition – waste bin, matched with recycling bin



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2022 public place bin detailed results, bin composition – recycling bin



☑ RECYCLING: 85%

- Recyclables not glass (16%)
- Recyclable glass (69%)

⊗ CONTAMINATION: 15%

- This was mainly: paper cups like coffee cups, contaminated soiled paper and rubber.

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2022 public place bin detailed results, potential CDS beverage container counts



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