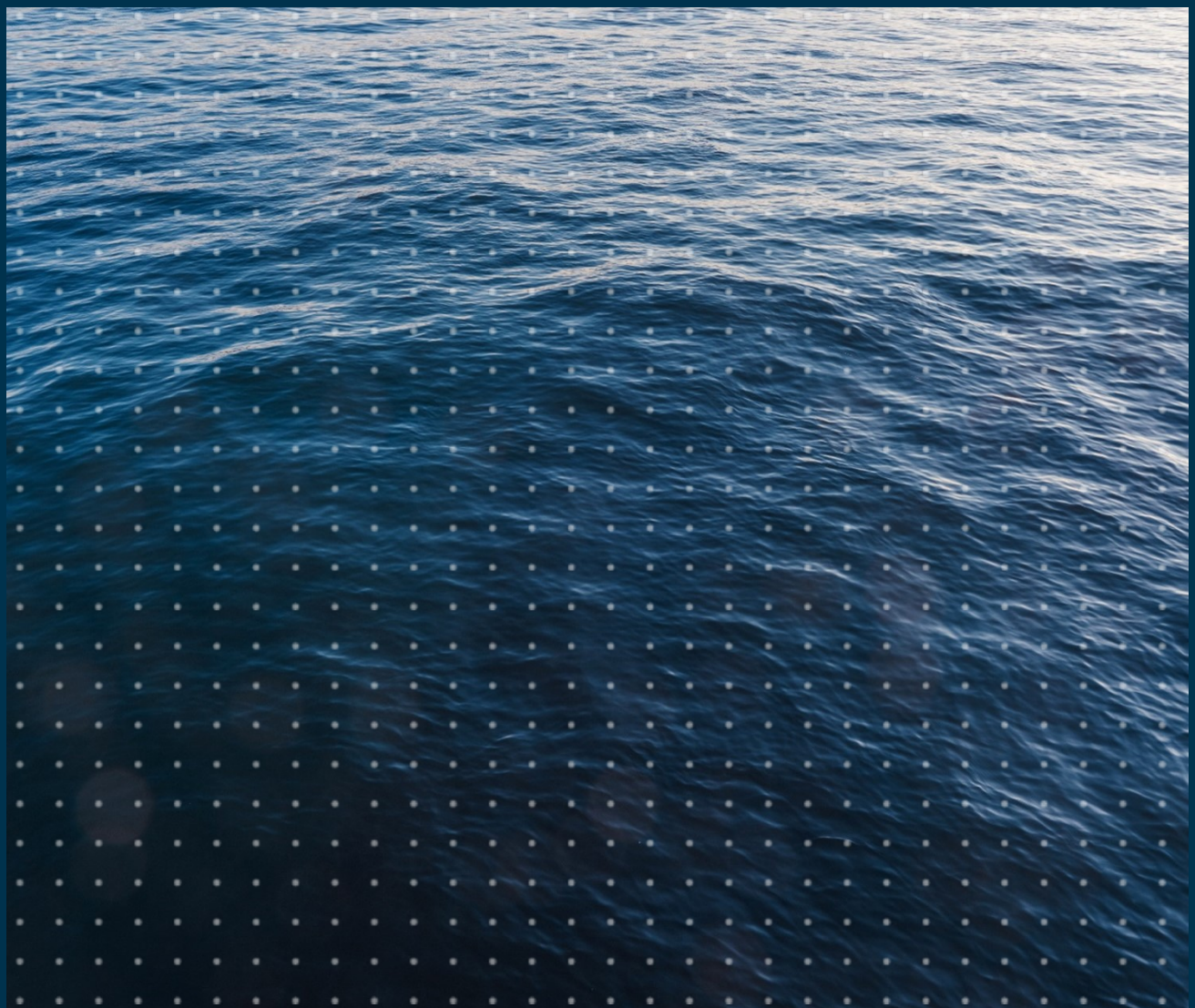
Environment Protection Authority

NSW Local Government Waste and Resource Recovery Data Report 2020–21

As reported by councils



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1. Overview

1.1. A snapshot of local and Statewide waste management

The NSW Local Government Waste and Resource Recovery Data Report 2020–21 is based on voluntary annual survey responses from 128 NSW local councils.

This report provides data about domestic waste and recycling in NSW. It is an important resource to help local councils and industry measure the success of programs and make evidence-based decisions about waste and recycling. It also helps the NSW Environment Protection Authority (EPA) monitor waste and recycling levels across the state.

1.2. Part of a larger environmental program

This data supports a larger environmental program. The NSW Waste Avoidance and Resource Recovery Strategy 2014–21 (WaRR Strategy) is a framework for waste management. It aims to enable the NSW population to improve the environment and community wellbeing by reducing waste and using resources more efficiently.

The WaRR Strategy has six long-term targets:

- avoiding and reducing the amount of waste generated per person in NSW
- increasing recycling rates to
  - 70% for municipal solid waste
  - 70% for commercial and industrial (C&I) waste
  - 80% for construction and demolition (C&D) waste
- increasing waste diverted from landfill to 75%
- better managing problem wastes by establishing 86 drop-off services across NSW
- reducing the number of litter items by 40% on the 2011–12 number (by 2017)
- reducing the incidence of illegal dumping by 30% on the 2010–11 level (by 2017).

A separate biennial report analyses the progress made against these targets in detail.

The NSW Government allocated $802 million over nine years under the Waste Less, Recycle More initiative. This is funded by the waste levy and is the largest program of its kind in Australia. Waste Less, Recycle More funds local council initiatives, new and enhanced infrastructure, organics collections, problem waste management, business recycling, illegal dumping and litter prevention.

1.3. Focus on recycling will help achieve targets

To meet NSW WaRR Strategy targets, local councils must focus on reducing waste and increasing recycling. This report includes recycling rates for each waste stream. Results for each council are in Appendix tab 3.

Waste generated in 2020–21

In 2020–21, NSW households generated 4.04 million tonnes of domestic waste, comprising:

- 2.35 million tonnes of residual waste
- 1.69 million tonnes of recycling and organics (including containers from Return and Earn).

Domestic waste generated is material collected through kerbside bins, clean up and resident drop-off services and includes material from the *Return and Earn* container deposit scheme (CDS).

Amounts collected from kerbside

NSW councils offer various combinations of waste, recycling, organics and FOGO kerbside collection services. Not all council areas offer all collection services. Every week, the average household with these types of kerbside bin service puts out for collection:

- 3.82 kg of recyclables
- 5.65 kg of garden organics
- 7.83 kg of food and garden organics
- 11.63 kg of residual waste

Although the above averages add to 28.93 kg, not all households have all these services. The NSW average generation of domestic waste per household per week is 22.33 kg. This is calculated from the total tonnage collected from kerbside, clean-up and drop-off services (excluding CDS) 3,908,300t, divided by the total number of households 3,366,330 (regardless of service) divided per week.

Figure 1 2020–21 average weekly collection from households with a kerbside bin service, by levy areas

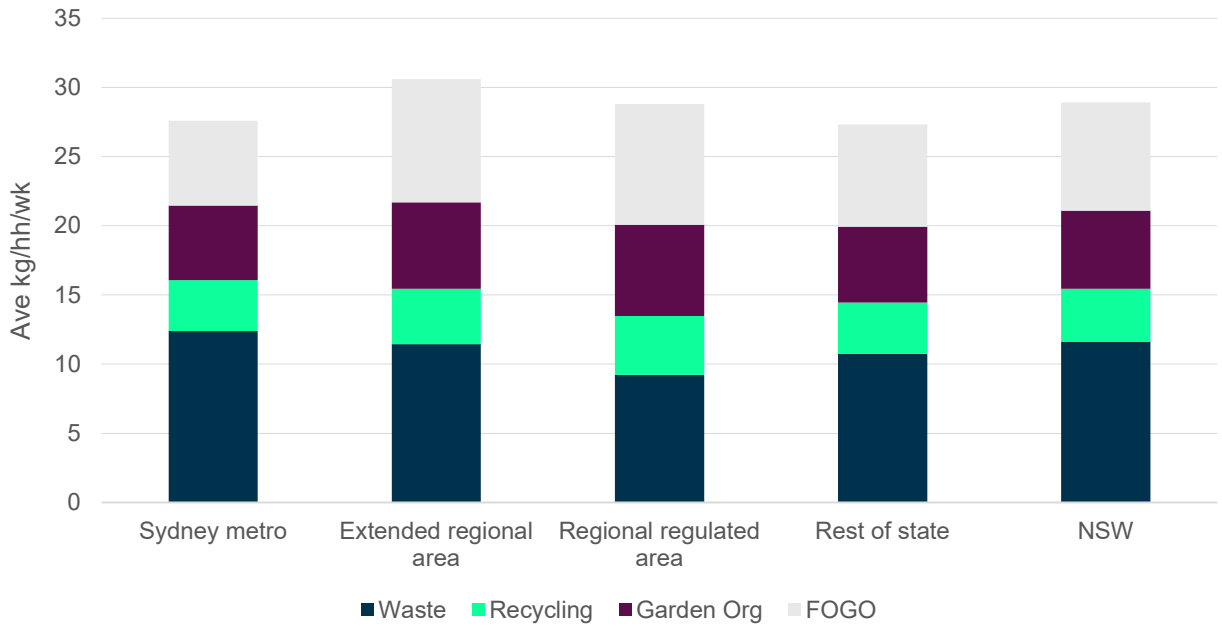


Table 1 NSW average kilogram per household per week collected from households with a kerbside bin service, by year.

Year	Residual waste (tonnes)	Dry recyclables (tonnes)	Garden organics (tonnes)	Food and garden organics (tonnes)
2016–17	11.86	4.89	5.70	7.42
2017–18	11.24	4.68	4.73	7.17
2018–19	10.88	3.97	5.25	7.46
2019–20	11.19	3.79	5.15	7.54
2020–21	11.63	3.82	5.65	7.83

Provision of household services

In 2020–21 there were 3,366,330 households in NSW. Of these:

- 2,941,253 – 87.4% – had a council kerbside bin waste service.
- 2,840,157 – 84.4% – had a kerbside bin recycling service.
- 1,500,315 – 44.6% – had a kerbside bin garden organics service.
- 683,571 – 20.3% – had a kerbside bin food and garden organics service.
- 2,995,336 – 89.0% – had access to a council kerbside clean-up service.

Some households, particularly those in multi-unit dwellings, are serviced by private contractors. Councils are unable to provide data on the amount of waste collected for those households. The number of households affected and reported on may vary from year to year.

1.4. Increase recycling

In 2020–21 around 1.86 million tonnes of waste from domestic kerbside, clean-up and drop-off services were recycled. The total comprised:

- 759,000 tonnes of dry recyclables
- 846,000 tonnes of organics
- 260,000 tonnes of residual waste material recovered via alternative waste treatment, drop-off or clean-up recovery.

Dry recyclables

Data on the kerbside dry recycling material collected changed when the NSW container deposit scheme (CDS) started in December 2017. The EPA has determined that 136,067 tonnes were collected and recycled through the CDS in 2020–21, up from 119,353 tonnes in 2019–20.

The EPA calculates these figures from data provided by the scheme operator and, for each type of material, a conversion factor for the number of containers per tonne.

Note: The methodology used to convert the number of containers redeemed is updated every six months: see https://www.exchangeforchange.com.au/who-we-are/publications-and-reports.html.

The kerbside yellow-lid recycling service collected 563,595 tonnes in 2020–21, slightly less than the 564,249 tonnes of 2019–20. The additional amount collected from the *Return and Earn* container deposit scheme gave a total of 699,692 tonnes, which was 16,060 tonnes more than the total amount collected in 2019–20.

Organics

Organics collected from the kerbside totalled 719,241 tonnes in 2020–21, up from the 621,616 tonnes collected in 2019–20. Of these:

- 441,004 tonnes of garden organics were collected at the kerbside
- 278,237 tonnes of food and garden organics were collected at the kerbside.

Organics were also collected from drop-off services (121,934 tonnes) and clean-up services (22,047 tonnes).

‘Other council organics’ accounted for 23,922 tonnes collected.

In 2020–21, total organics collected – the sum of the categories above – was 887,144 tonnes, up 9% from the 2019–20 total.

Residual waste sent to AWT facilities

In addition, 25 councils sent 574,666 tonnes of kerbside residual waste to an alternative waste treatment (AWT) facility where 171,900 tonnes, or an average of 30%, was recycled.

The amount of waste AWT facilities receive and recycle has fallen in recent years. On 26 October 2018 the EPA revoked the general and specific Resource Recovery Orders and Resource Recovery Exemptions for the application of mixed waste organic outputs (MWOO) to land. Since then, AWT facilities have been receiving about 11% less waste and recycling 25% less.

Totals reported

Table 2 shows the totals for domestic waste, recyclables and organics reported. The figures for waste generated per household and per capita per week are based on total households and population regardless of service. They are calculated by taking the total waste figures and dividing them by the total population and total number of households.

Table 2 Total domestic waste generated in NSW, 2020–21

Waste stream	Collected (tonnes)	Recovered (tonnes)	Disposed of (tonnes)	Recycling rate (% of collected)	Total generated kg/hh/wk	Total generated kg/ca/wk
Recyclables	827,960	759,223	68,736	91.7%	4.73	1.95
Organics	863,222	846,827	16,394	98.1%	4.93	2.03
Residual waste	2,353,185	260,055	2,093,131	11.1%	13.44	5.54
Total generation	**4,044,367**	**1,866,105**	**2,178,261**	46.1%	23.10	9.52

Figure 2 shows the recycling rate by area over the past seven years. The recycling rate for domestic waste for SMA, ERA and RRA shows a decline. This is mainly due to the AWT resource recovery rates having fallen. Councils that used to have residual waste processed into MWOO now send it to landfill. The amount of material reported recovered through AWT increased from 2019–20 to 2020–21 but it is still approximately 100,000 tonnes less than before.

Figure 2 Average domestic recycling rate by area, 2014–21

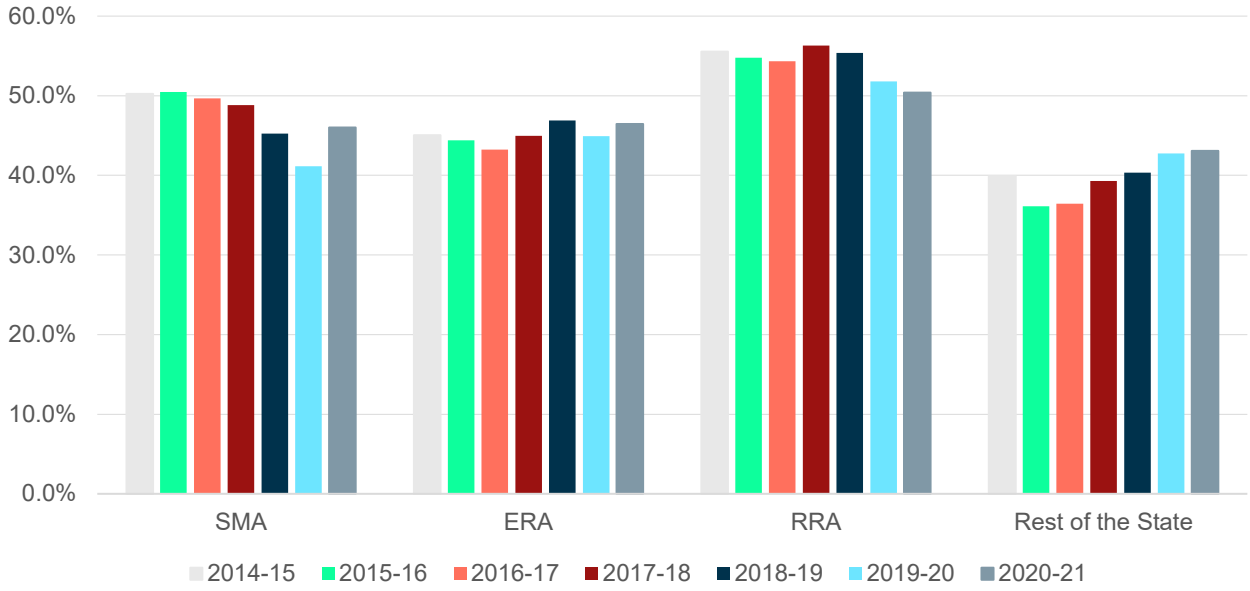


Table 3 Average recycling rate by area, 2014–21 (as shown in Figure 2)

Area	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
SMA	50.2%	50.5%	49.7%	48.8%	45.2%	41.1%	46.0%
ERA	45.0%	44.4%	43.3%	45.0%	46.9%	44.9%	46.5%
MLA	48.6%	48.6%	47.6%	47.6%	46.4%	42.3%	46.1%
RLA	55.5%	54.8%	54.3%	56.3%	55.4%	51.8%	50.4%
Rest of the state	39.9%	36.1%	36.4%	39.3%	40.3%	42.8%	43.1%
NSW	48.0%	47.5%	47.3%	47.4%	46.1%	43.6%	46.1%

Note: The category RLA (regional levy area) in Table 3 is equivalent to the category RRA (regional regulated area) in Figure 2. The category MLA (metro levy area) is a combination of SMA (Sydney metro area) and ERA (extended regional area).

The decrease for NSW two years ago was mainly due to reduced AWT recovery. The domestic recycling rate for NSW, shown in Figure 3, has now bounced back to 46.1% – the level it was in 2018–19. This has resulted from an increase in recycling and organics that outweighs the slight increase in residual waste disposed of in 2020–21.

Figure 3 NSW domestic recycling rate, 2005–21

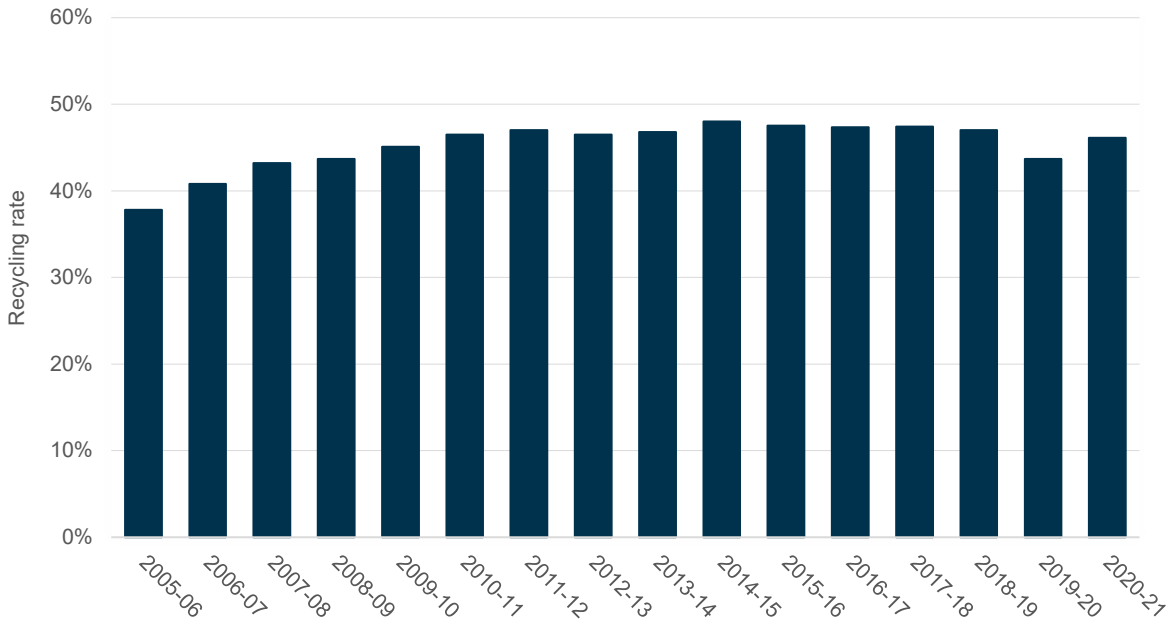


Table 4 NSW domestic recycling rate, 2005–21 (as shown in Figure 3)

Year	Recycling rate
2005–06	37.8%
2006–07	40.8%
2007–08	43.2%
2008–09	43.7%
2009–10	45.1%
2010–11	46.5%
2011–12	47.0%
2012–13	46.5%
2013–14	46.8%
2014–15	48.0%
2015–16	47.5%
2016–17	47.3%
2017–18	47.4%
2018–19	47.0%
2019–20	43.7%
2020–21	46.1%

2. Total domestic waste

2.1. Generated and recycled

In 2020–21 NSW created 4.04 million tonnes of domestic waste. This is an increase of 242,000 tonnes from the previous year; however, over the past five years the waste-generation rate has been relatively static. Total domestic waste includes all recyclables, organics and residual waste from household kerbside services and drop-off facilities.

From the 4.04 million tonnes of domestic waste generated, 2.18 million tonnes of residual waste was disposed of in landfill. This was an increase of about 40,000 tonnes (1.9%) from 2019–20.

A total of 1.86 million tonnes of the domestic waste generated was recycled, an increase of 204,300 tonnes from 2019–20. The total domestic tonnes generated, and recycling figures, includes 119,353 tonnes of containers collected by the container deposit scheme (CDS), *Return and Earn*.

The total domestic recycling rate increased to 46.1% in 2020–21 from 43.7% in 2019–20.

In 2020–21 NSW residents recycled 46.1% of domestic waste – 1.86 million tonnes of 4.04 million tonnes. This figure includes:

- kerbside recycling (500,000 tonnes)
- CDS recycling (136,000 tonnes)
- kerbside organics (438,000 tonnes)
- kerbside FOGO (273,000 tonnes)
- alternative waste treatment (172,000 tonnes)
- clean-up services (86,000 tonnes)
- drop-off facilities (260,000 tonnes).

The decline two years ago was caused mainly by the EPA revoking the general and specific Resource Recovery Orders and Resource Recovery Exemptions for the application of MWOO to land. Alternative waste treatment (AWT) facilities have been recycling 25% less material. This led the overall recycling rate to drop. However, 2020–21 has seen those losses negated and recovery rate back to previous levels despite the revocation. This has been due to increases in organics recycled and, to a lesser extent, to an increase in CDS and drop-off recycling.

Figure 4 Domestic recycling rate by area, 2013–21

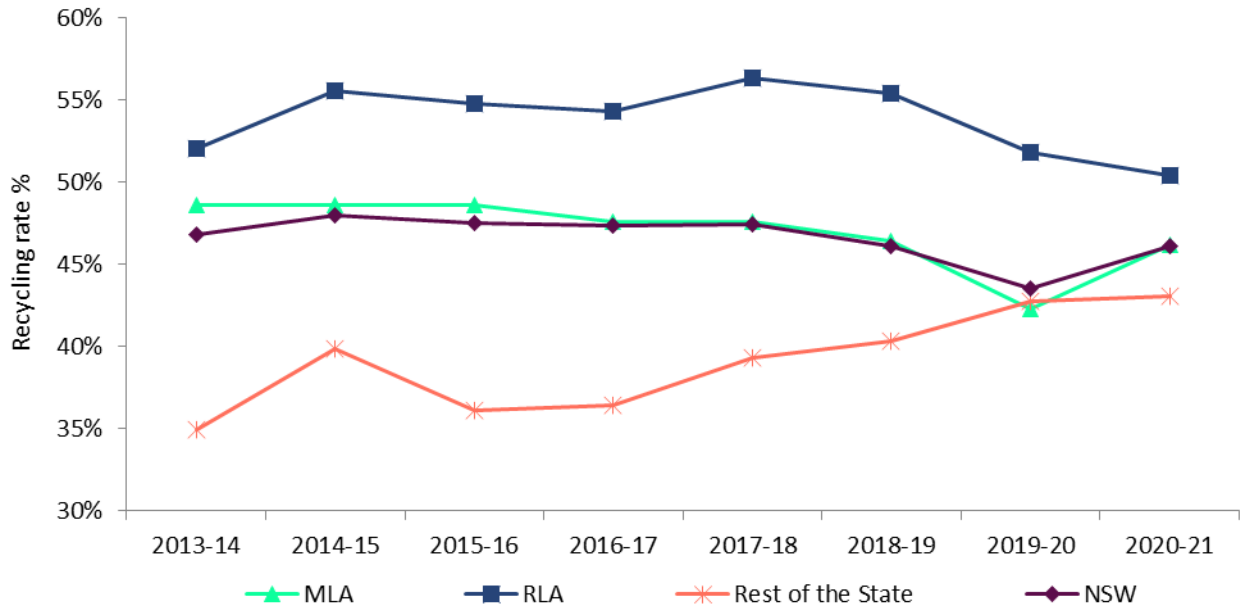


Figure 4 shows the recycling rates by NSW areas. In 2020–21 the regional levy area (RLA) reported the highest level (50.4%). The metro levy area (MLA) recorded 46.1%, equal to the State average (46.1%).The rest of the State recorded 43.1%: the figure for this region has increased every year since 2015–16.

Table 5 shows the weight in tonnes of material collected by waste stream, the amount recycled and the amount of remaining waste disposed of in landfill after processing.

For recyclables and organics, the material disposed of after processing is called ‘contaminants’ or ‘rejects’. For kerbside dry recyclables, the proportion of rejects was 8.3%. For kerbside organics it was 1.9%. For residual waste, 11.1% was recycled and the rest was disposed of in landfill.

Table 5 Total domestic generation and fate by waste stream, 2020–21

Waste stream	Collected (tonnes)	Recovered (tonnes)	Disposed of (tonnes)	Recycling rate (% of collected)	Total generated kg/hh/wk	Total generated kg/pp/wk
Dry recyclables	827,960	759,223	68,736	91.7%	4.73	1.95
Organics	863,222	846,827	16,394	98.1%	4.93	2.03
Residual waste	2,353,186	260,055	2,093,131	11.1%	13.44	5.54
Total generation	4,044,367	1,866,105	2,178,262	46.1%	23.10	9.52

Note: Due to rounding, the total is not the same as the sum of the component figures. Kg/hh/wk (kilograms per household per week) and kg/pp/wk (kilograms per person per week) are based on total households and total population, regardless of which services are available to them.

Figure 5 shows the weight in tonnes of material collected by waste stream, kerbside, drop-off, clean-up and containers from *Return and Earn*. Total amounts equal 4,044,367 tonnes.

Figure 5 Total domestic waste collected, by waste stream and collection method, 2020–21

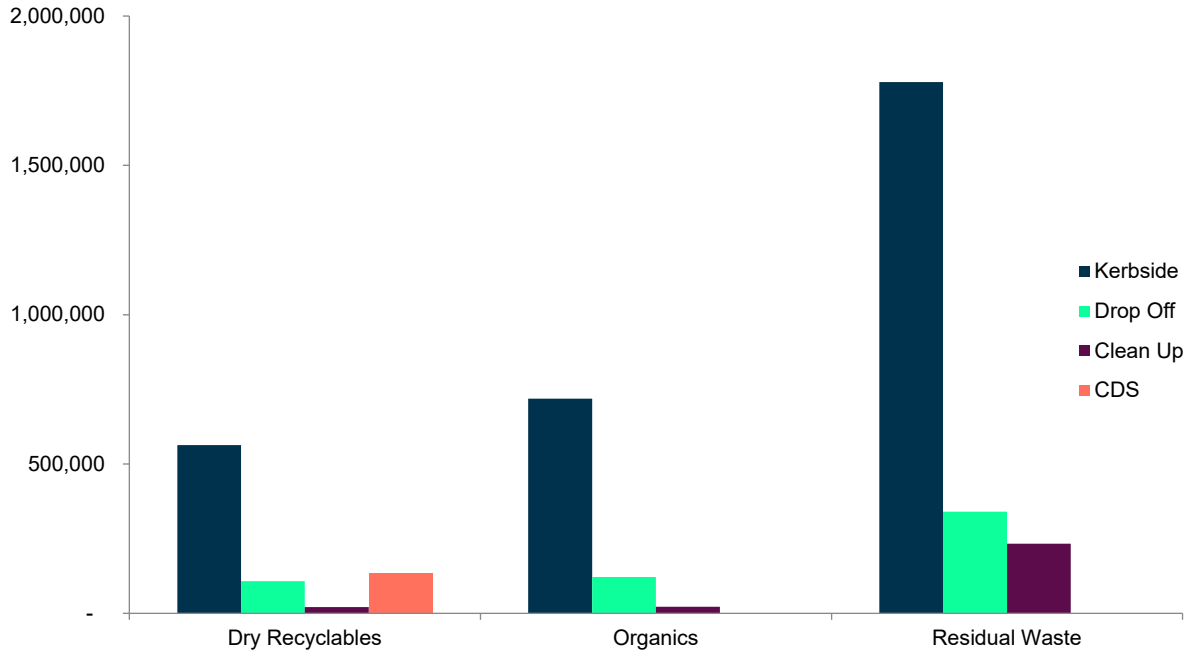


Table 6 Domestic waste collected, by waste stream and collection method, 2020–21 (as shown in Figure 5)

Waste stream	Kerbside collection (tonnes)	Drop off (tonnes)	Return and Earn Containers (tonnes)	Clean up (tonnes)
Dry recyclables	563,595	107,774	136,067	20,524
Organics	719,241	121,934		22,047
Residual waste	1,779,223	340,420		233,542
Totals	**3,062,059**	**570,128**	**136,067**	**276,113**

Figure 6 shows the amount of domestic waste collected at the kerbside between 2009 and 2021. The current average amount of domestic waste collected at the kerbside is 22.33 kg per household per week. The amount of domestic waste collected at the kerbside for each waste stream is relatively constant. Less waste is going to landfill, as average kilograms per week household has reduced meeting the strategy target from 2013–14. As more food and garden organics (FOGO) services are diverting more food into recycling, this reduces waste to landfill and increases recycling.

The average amounts in Figure 6 relates to those households with a kerbside service divided by the amount collected from the kerbside bins. ‘Organics’ include both garden organics and FOGO (food and garden organics) services.

Figure 6 Average weekly kerbside waste collection for households with a council service, 2009–20

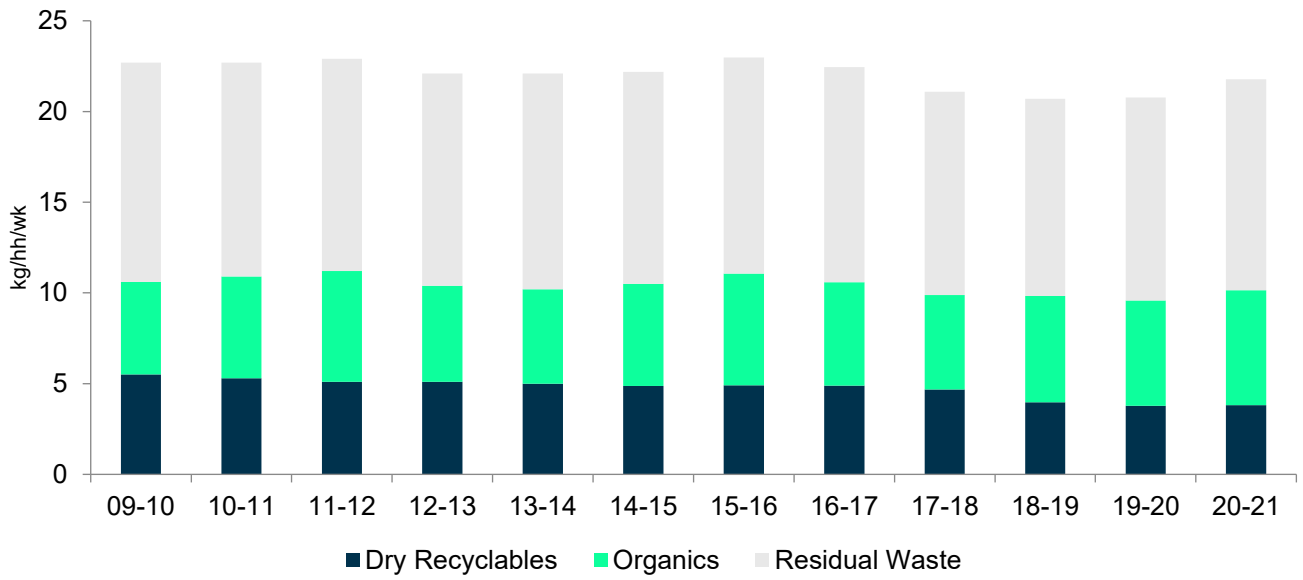


Table 7 **Average weekly kerbside waste collection for households with a council service, 2009–21 (as shown in Figure 6)**

Year	Dry recyclables (kg)	Organics (kg)	Residual waste (kg)
2009–10	5.5	5.1	12.1
2010–11	5.3	5.6	11.8
2011–12	5.1	6.1	11.7
2012–13	5.1	5.3	11.7
2013–14	5.0	5.2	11.9
2014–15	4.9	5.6	11.7
2015–16	4.9	6.2	11.9
2016–17	4.9	5.7	11.9
2017–18	4.7	5.2	11.2
2018–19	4.0	5.8	10.9
2019–20	3.8	5.8	11.2
2020–21	3.8	6.3	11.6

Figure 7 Total waste collected at the kerbside, by processing destination, 2010–21

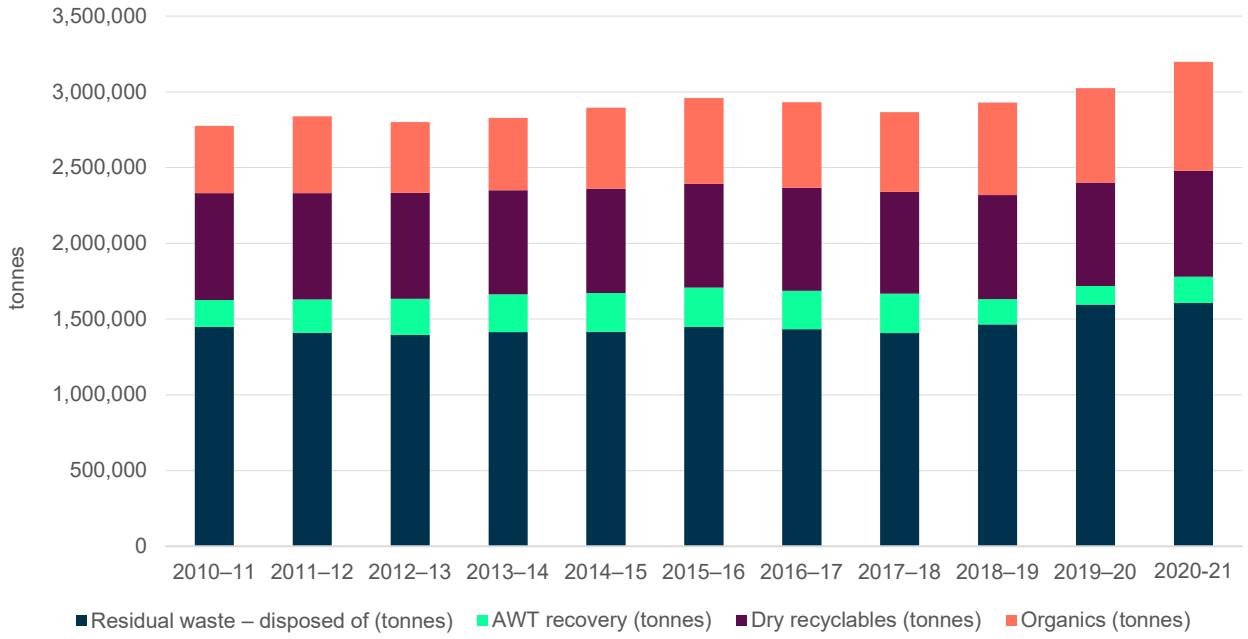


Table 8 Total waste collected at the kerbside, by processing destination, 2010–21 (as shown in Figure 7)

Tonnes	Residual waste – disposed of (tonnes)	AWT recovery (tonnes)	Dry recyclables (tonnes)	Organics (tonnes)
2010–11	1,447,676	178,457	704,716	444,448
2011–12	1,409,107	221,397	700,468	508,025
2012–13	1,395,445	238,728	698,742	466,984
2013–14	1,414,960	249,215	686,939	476,440
2014–15	1,416,871	256,069	687,514	535,022
2015–16	1,447,594	259,520	685,540	565,635
2016–17	1,433,013	254,149	679,059	564,627
2017–18	1,406,881	260,589	671,712	527,287
2018–19	1,464,623	167,880	686,842	609,662
2019–20	1,595,619	122,855	683,602	621,616
2020–21	1,607,324	171,900	699,662	719,241

3. Recycling

3.1. Dry recyclables collected and recycled

Dry recyclables formed 20.5% of total domestic waste in 2020–21. A total of 827,960 tonnes was collected, comprising 563,595 tonnes of kerbside waste, 20,524 tonnes from clean-ups, 107,774 tonnes from drop-offs and 136,067 tonnes of containers under the container deposit scheme.

Dry recyclables are collected from four sources:

- Kerbside collections accept mixed household recyclables including paper, newspaper, magazines, cardboard, plastic film and bottles, steel and aluminium cans, and glass bottles.
- Eligible containers are collected separately by the container deposit scheme, *Return and Earn*.
- Drop-off facilities allow residents to bring in recyclables including paper, glass, plastic, mattresses, metals, electronic waste (e-waste), batteries, globes, cartridges and some hazardous materials.
- Clean-up services collect large metals, recyclables, organics and bulky goods.

Table 9 shows the regional area and collection method for dry recyclables. In 2020–21, 827,960 tonnes of dry recyclables were collected in NSW. Of these:

- 68.07% or 563,595 tonnes was collected from the kerbside recycling bins.
- *Return and Earn* collected 16.43%.
- Residents took 107,774 tonnes or 13.02% to drop-off points.
- Clean-up services collected the remaining 2.48% or 20,524 tonnes.

Around 76% of drop-off material was collected from the regional area and other non-metro areas in the rest of the state. The metro levy area collected 67% of dry recyclables through kerbside clean-up services. This reflects the different services provided in different areas.

Table 9 Dry recyclables, by collection method and regional area, 2020–21

Amount	Sydney metro	Extended area	Regional area	Rest of the state	NSW
No. of councils	30	12	19	51	112
Kerbside (tonnes)	307,936	117,830	70,102	67,727	563,595
Drop-off (tonnes)	3,251	22,544	24,038	57,941	107,774
Clean-up (tonnes)	13,747	3,595	1,662	1,520	20,524
CDS (tonnes)	56,160	31,802	20,354	27,750	136,067
Other hazardous material recycled (tonnes)	0	101	21	4,450	4,572
Total domestic (tonnes)	**381,095**	**175,872**	**116,178**	**159,387**	**832,532**

One hundred and twelve (112) of 128 NSW councils reported a recycling collection service: between them they covered 84.4% of all households. The Sydney metro region collected 54.6 % of

the total kerbside recyclables, from 1.61 million households with a service. The 'regional' and 'rest of the state' areas increased their tonnage by embracing the container deposit scheme (CDS).

Table 10 shows the average weight of dry recyclables collected from 2,840,157 households, per household and per person for each region. In 2020–21, an average of 198.44 kg of kerbside dry recyclables was collected from households with a recycling service. This is a weekly average of 3.82 kg per household or 1.54 kg per person.

Table 10 Kerbside dry recyclables collected per household and per person by region, 2020–21

Region	Number of households with service	Annual average kilos per household	Weekly average kilos per household	Annual average kilos per person	Annual average kilos per person per week
Sydney metro	1,606,743	191.65	3.69	71.83	1.38
Extended area	566,369	208.04	4.00	87.77	1.69
Regional area	316,252	221.67	4.26	101.88	1.96
Rest of state	350,793	193.07	3.71	92.83	1.79
NSW	**2,840,157**	**198.44**	**3.82**	**79.97**	**1.54**

Notes

Because data is rounded and presented to one decimal place, weekly averages multiplied by 52 may not match the annual figures.

The household average is based on the number of serviced households. The per-person average is based on the total population in council areas with kerbside recycling.

Figure 8 Kerbside dry recyclables collected, by area, 2012–20

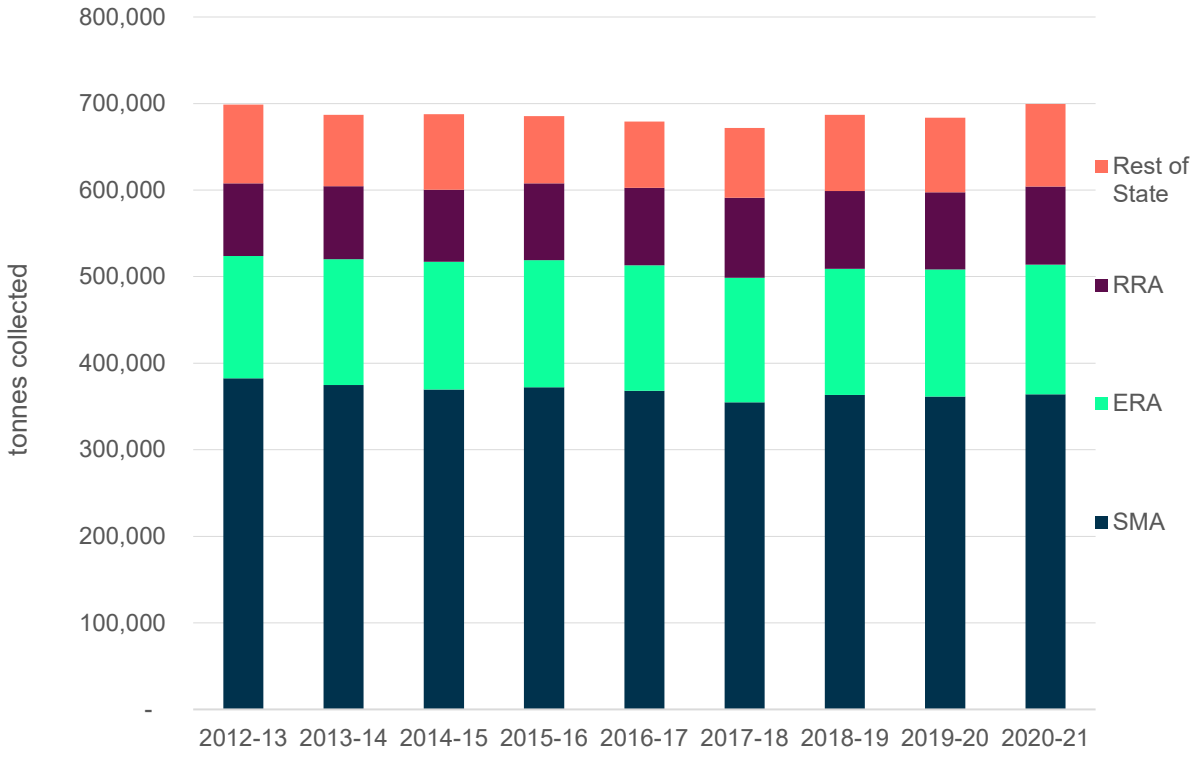


Table 11 Kerbside dry recyclables collected, by area, 2012–21 (as shown in Figure 8)

Year	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regional regulated area (tonnes)	Rest of State (tonnes)
2012–13	382,616	141,218	83,899	91,009
2013–14	374,876	145,432	84,300	82,330
2014–15	369,704	147,521	83,224	87,066
2015–16	372,300	146,660	88,764	77,815
2016–17	368,294	144,971	89,214	76,581
2017–18	354,832	144,019	92,270	80,591
2018–19	363,478	145,425	89,964	87,976
2019–20	361,444	146,697	89,331	86,130
2020–21	364,096	149,632	90,457	95,477

The amount of dry recyclables collected at the kerbside has fallen slightly over the last five years. Drop-off material has also decreased a little. But as Figure 9 shows, the container deposit scheme *Return and Earn* has kept the overall collection rate more or less constant, with a slight increase in recent years. The household average (the blue line) is based on total collection and total households in NSW.

Figure 9 Dry recyclables and hazardous materials, total and average household yield per week, 2013–20

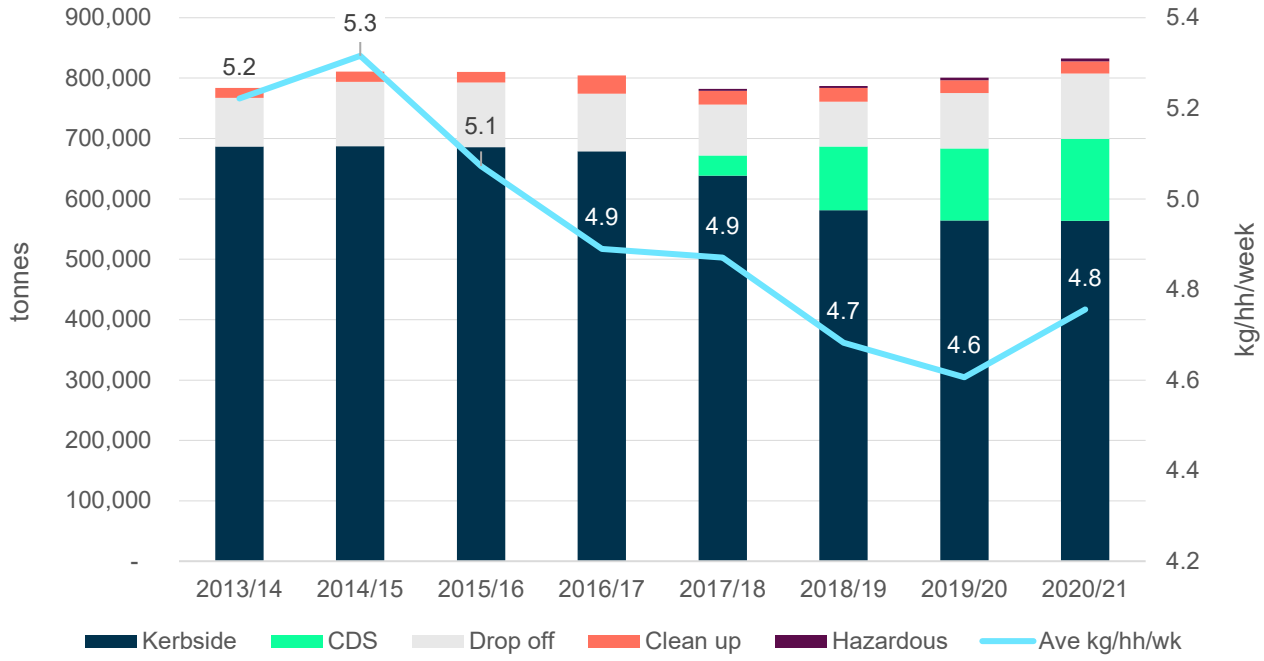
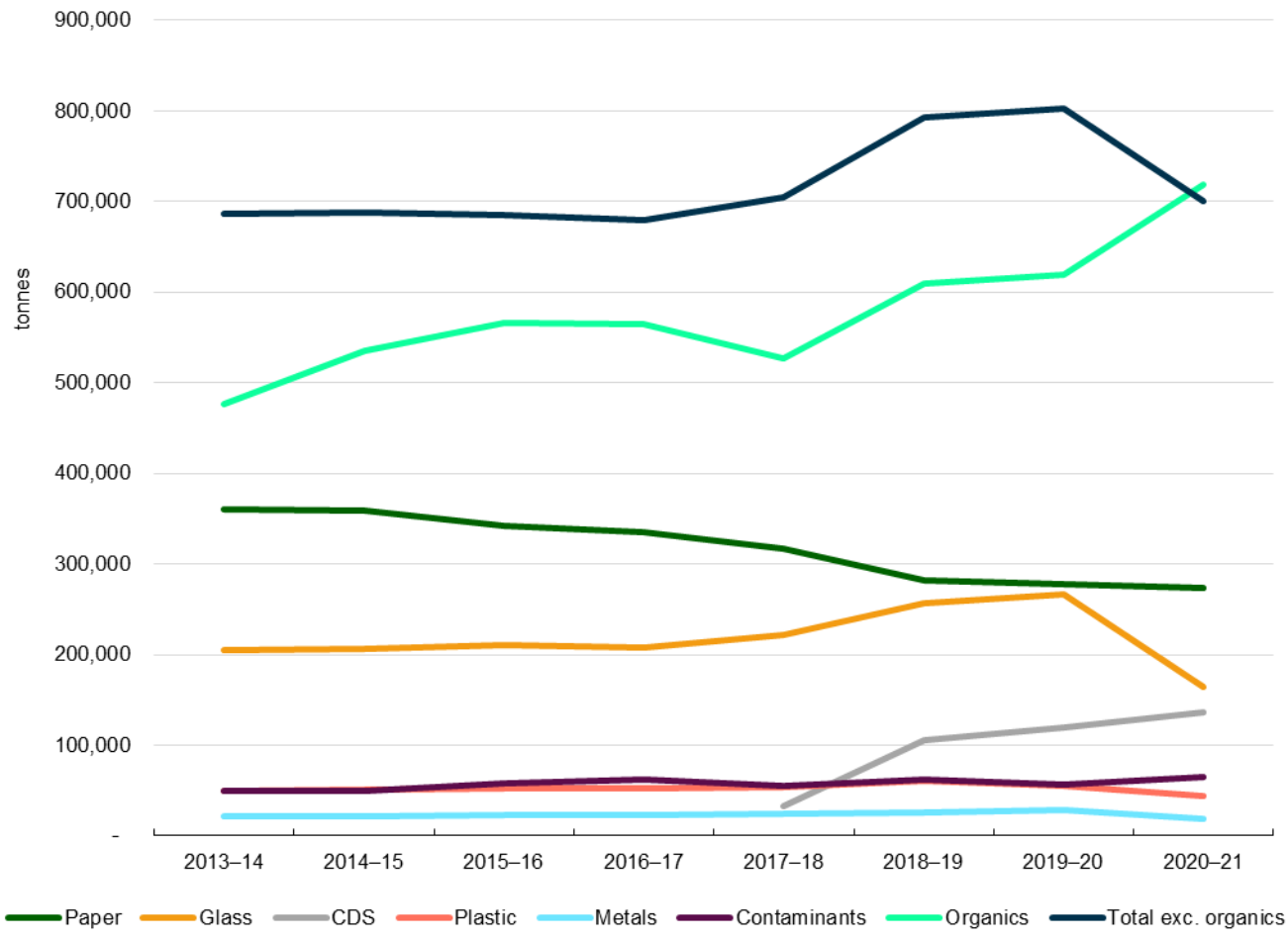


Table 12 **Dry recyclables and hazardous materials, kilograms per household per week, 2013–21 (as shown in Figure 9)**

Year	Recycling rate (kg/hh/week)
2013–14	5.2
2014–15	5.3
2015–16	5.1
2016–17	4.9
2017–18	4.9
2018–19	4.7
2019–20	4.6
2020–21	4.8

Figure 10 shows the average tonnage collected over the past seven years for several materials. The last three years include materials collected through the CDS. This explains the increase in glass, plastics and, to a lesser degree, metals.

Figure 10 Recycling collected kerbside and through CDS, by material, 2013–21



3.2. Organics collected and recycled

Like dry recyclables, organics are collected through kerbside, drop-off and clean-up services. In 2020–21:

- 48 councils collected garden organics only
- 41 councils collected food and garden organics (FOGO)
- 4 councils used both systems
- 43 councils did not collect organics at the kerbside.

Household garden organics are mainly bark, leaves, twigs and lawn clippings, while the FOGO co-collection service also includes household food scraps.

Table 13 shows that 719,241 tonnes of organics were collected at the kerbside in 2020–21. This is an increase of 15% from 2019–20. Of the kerbside total 441,004 tonnes were from garden organics, and from the 41 councils with collection systems accepting FOGO collected 278,237 tonnes in 2020–21. The regional regulated area accounted for 45.8% of this.

Table 14 and Table 15 show the collected garden organics compared to the food and garden organics per household and per person, per week. The Sydney metro area collected 5.40 kg of organics per household weekly, and 6.12 kg of FOGO. The regional regulated area collected 6.59 kg of organics and 8.73 kg of FOGO.

In the past few years more councils have started using FOGO systems. FOGO gives a greater yield than regular garden organics, both taking food out of the waste bin (and so reducing landfill) and increasing recycling rates.

Table 13 Organics collected at the kerbside, by region: garden organics, 2020–21

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	25	7	5	11	**48**
Tonnes collected	289,189	98,362	32,587	20,867	**441,004**
Average kg/hh/wk	5.40	6.27	6.59	5.50	**5.65**
Average kg/pp/wk	2.02	2.55	3.15	2.69	**2.21**

Table 14 Organics collected at the kerbside, by region: food and garden organics (FOGO), 2020–21

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	3	4	11	23	**41**
Tonnes collected	48,584	80,426	78,845	70,382	**278,237**
Average kg/hh/wk	6.12	8.90	8.73	7.38	**7.83**
Average kg/pp/wk	2.37	3.72	3.93	3.49	**3.38**

Table 15 Organics collected at the kerbside, by region: total garden organics and FOGO, 2020–21

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	28	11	16	34	**89**
Tonnes collected	337,772	178,788	111,431	91,249	**719,241**
Average kg/hh/wk	5.49	7.23	7.97	6.84	**6.33**
Average kg/pp/wk	2.07	2.97	3.66	3.27	**2.55**

Across all areas, FOGO produced greater yield than regular garden organics. Taking food out of the waste bin reduces landfill and increases recycling rates.

Figure 11 shows the steady increase in collected organics over the past five years. Kerbside-collected garden organics rose by 8.7% (around 35,000 tonnes) from 2019–20 to 2020–21. FOGO collections increased by 62,338 tonnes in this period, with one more council offering the service, and some trial councils converting to complete FOGO.

Figure 11 Organics collected at the kerbside, by region, 2010–21

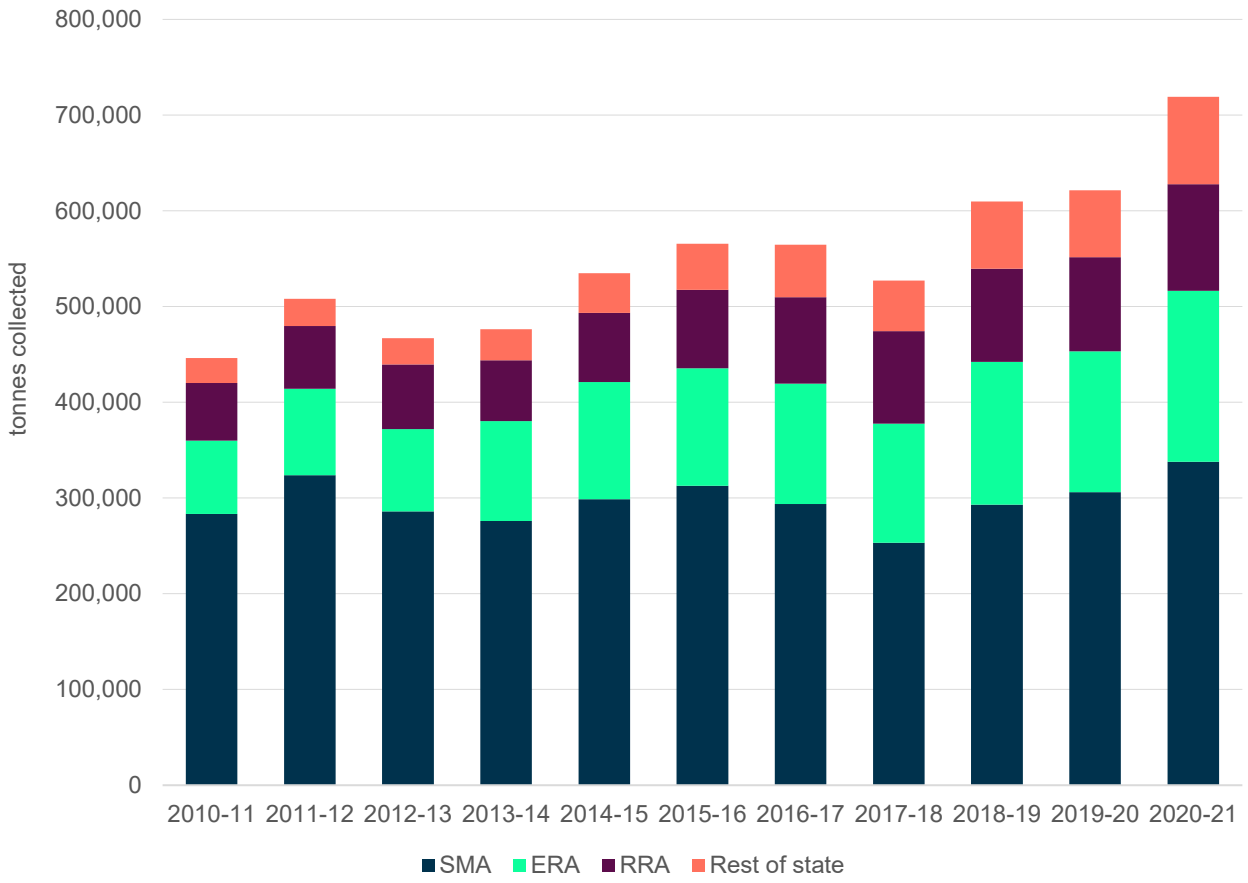


Table 16 Organics collected at the kerbside, by region, 2010–21 (as shown in Figure 11)

Year	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regional regulated area (tonnes)	Rest of State (tonnes)
2010–11	283,466	76,578	59,989	26,089
2011–12	323,775	90,236	65,844	28,170
2012–13	286,035	86,059	67,556	27,334
2013–14	276,210	104,010	63,538	32,682
2014–15	298,638	122,551	72,195	41,638
2015–16	312,669	123,041	81,889	48,037
2016–17	293,924	125,463	90,360	54,880
2017–18	253,313	124,282	96,844	52,848
2018–19	293,119	149,018	97,394	70,131
2019–20	306,080	147,293	98,171	70,071
2020–21	337,772	178,788	111,431	91,249

Note: Due to rounding, the total is not the same as the sum of the component figures.

Table 16 shows that in 2020–21, 71.8% of kerbside organics were collected from the Sydney metro and extended regulated areas. A small percentage of all organic material collected in NSW (1.1%) was sent to landfill as reject or contamination.

3.3. Organics collection systems

Total organics collection increased by 98,000 tonnes or 13% from 2019–20 to 2020–21. This was mainly due to increases in kerbside bin collections, as clean up and drop off sources remained the same. Across NSW, 64.9% of households had a kerbside collection service for organics and/or FOGO. This was an increase of 3.1% of households with a service.

Table 17 shows how organics were collected across NSW. Most were picked up at the kerbside. In the ‘rest of the state’ area the greatest tonnage was collected via drop off, because there are fewer kerbside collections in this area. The total collected (including ‘other council’ organics) was 887,144 tonnes.

Table 17 Organics collected in NSW, by method and region, 2020–21

Collection method	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regional regulated area (tonnes)	Rest of the State (tonnes)	NSW (tonnes)
Kerbside	337,772	178,788	111,431	91,249	**719,241**
Drop-off	1,436	22,926	23,315	74,258	**121,934**
Clean-up	7,785	13,803	250	209	**22,047**
Other council	12,282	2,161	1,511	7,968	**23,922**
Total	**359,276**	**217,678**	**136,506**	**173,684**	**887,144**

Figure 12 shows the growth in collected organics over the past eight years.

Figure 12 Kerbside organics collected, by method, 2013–21

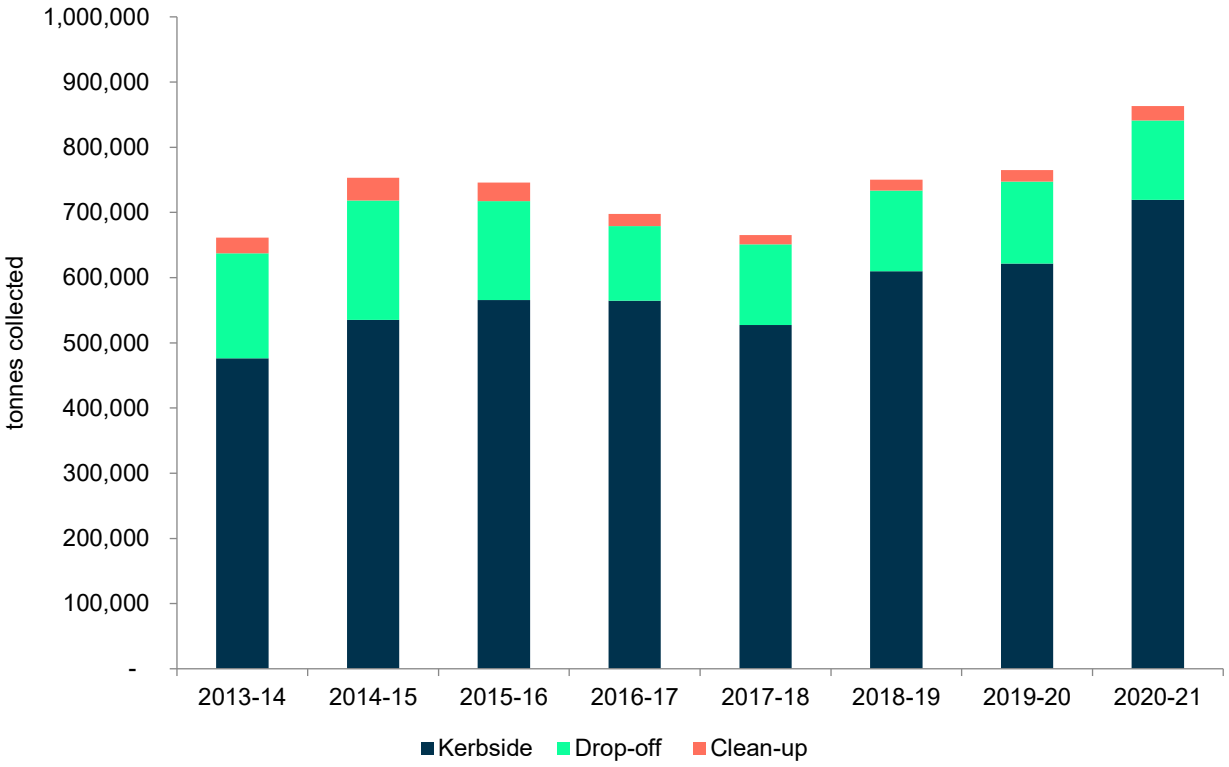


Table 18 Kerbside organics collected, by method, 2013–21 (as shown in Figure 12)

Year	Kerbside	Drop off	Clean up
2013–14	476,440	161,047	23,744
2014–15	535,022	183,191	35,198
2015–16	565,635	151,646	28,361
2016–17	564,627	114,610	18,465
2017–18	527,287	123,572	14,228
2018–19	609,662	123,789	16,996
2019–20	621,616	125,873	17,695
2020–21	719,241	121,934	22,047

Figure 13 shows how the collection of dry recyclables has compared with the collection of organics over the last decade. Organics collection has increased due to the uptake of FOGO. Recycling has remained steady, despite the use of more lightweight products and less newsprint in circulation.

Figure 13 Dry recyclables and organics collected, 2009–21

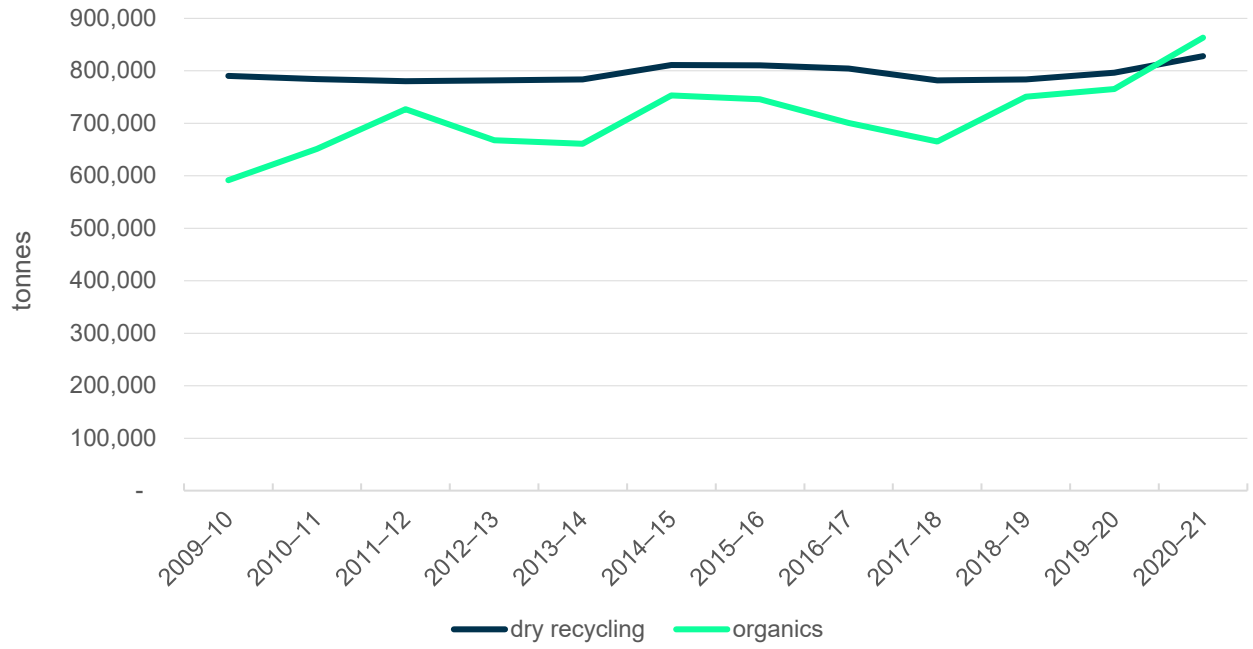


Table 19 Recycling and organics collected, 2013–21

Year	Recycling (tonnes)	Organics (tonnes)
2013–14	783,766	661,230
2014–15	810,826	753,411
2015–16	810,399	745,642
2016–17	804,189	700,455
2017–18	782,032	665,087
2018–19	783,593	750,448
2019–20	796,461	765,184
2020–21	827,960	863,222

4. Residual waste

Residual waste is what's left over after households have separated out the dry recyclables and organics. It's collected at the kerbside, at drop-off facilities and through clean-up services, and either treated in an alternative waste treatment facility before disposal or sent directly to landfill.

In 2020–21 NSW residents disposed of 2,178,262 tonnes of residual waste to landfill, comprising:

- residual waste collected at the kerbside and sent direct to landfill (1,204,557 tonnes)
- residual waste from drop-off centres (298,154 tonnes)
- residual waste from clean-up collections (187,653 tonnes)
- rejects from alternative waste treatment facilities sent to landfill (402,766 tonnes)
- rejects from dry recyclables sent to landfill from kerbside, clean-up and drop-off methods (68,736 tonnes)
- rejects from organics sent to landfill from kerbside, clean-up and drop-off methods (16,396 tonnes).

4.1. Kerbside residual waste collected and recycled

In 2020–21 the total amount of residual waste collected from the red-lid bin kerbside was 1,779,223 tonnes. This was an increase of 3.5% from the previous year, and the increase was seen across all regions. The values in Figure 14 are only for waste collected by council-contracted services and day labour: they do not include waste collected from some residential properties by private contractors. However, the average per-person collection reported by councils has remained similar since 2013.

Figure 14 Kerbside residual waste collected, by region, 2013–21

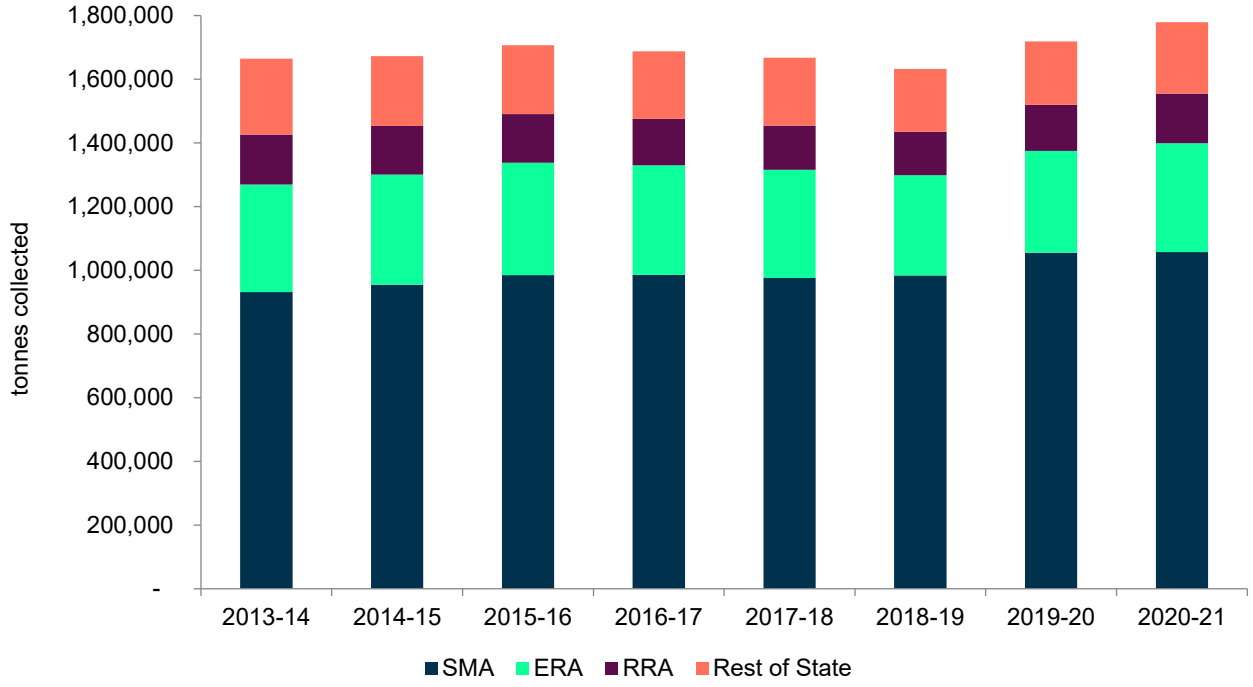


Table 20 Kerbside residual waste collected, by region, 2013–21 (as shown in Figure 14)

Year	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regulated regional area (tonnes)	Rest of State (tonnes)
2013–14	931,416	338,443	156,710	237,606
2014–15	954,985	345,397	152,742	219,816
2015–16	984,680	353,071	153,121	216,242
2016–17	985,829	344,173	145,847	211,313
2017–18	975,764	339,703	139,349	212,655
2018–19	983,634	314,948	136,625	197,296
2019–20	1,055,090	319,979	144,351	199,054
2020–21	1,057,327	341,848	156,098	223,951

Figure 15 Average household weekly residual waste (kg), by region, 2012–21

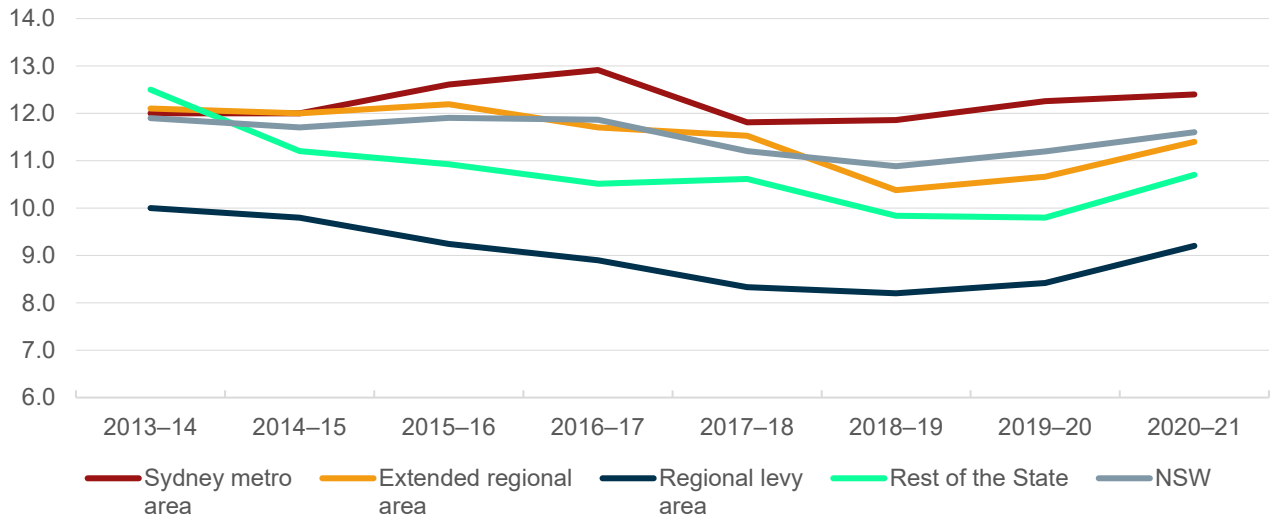
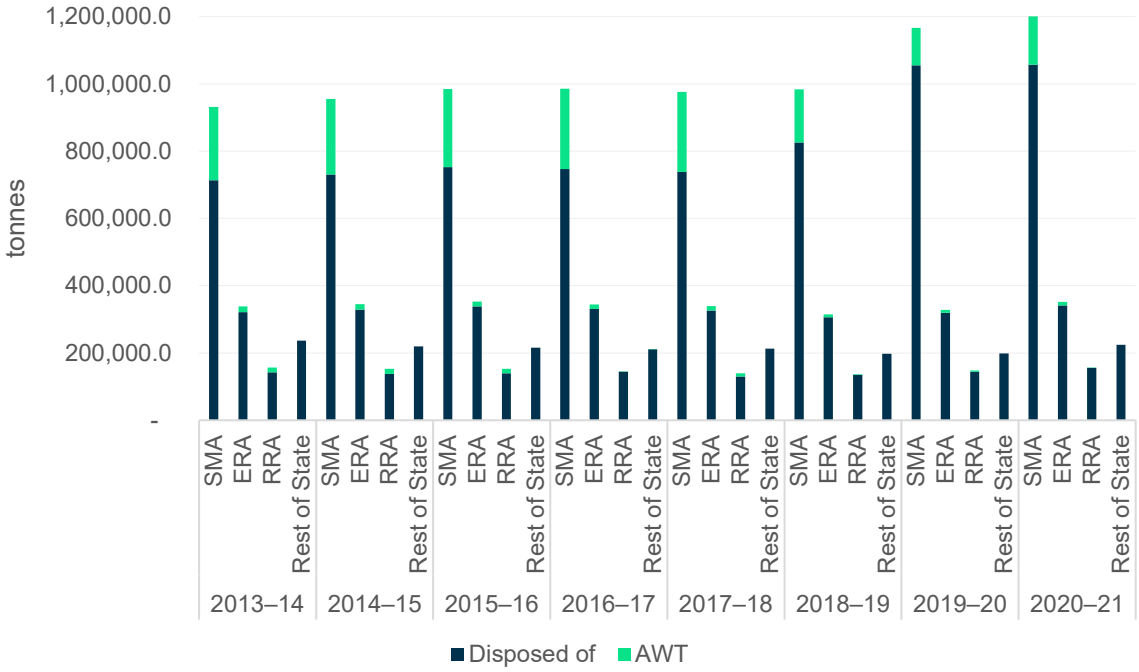


Table 21 Average household weekly residual waste, by region, 2012–21 (as shown in Figure 15)

Year	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regional regulated area (tonnes)	Rest of the State (tonnes)	NSW (tonnes)
2013–14	12.0	12.1	10.0	12.5	11.9
2014–15	12.0	12.0	9.8	11.2	11.7
2015–16	12.6	12.2	9.2	10.9	11.9
2016–17	12.9	11.7	8.9	10.5	11.9
2017–18	11.8	11.5	8.3	10.6	11.2
2018–19	11.9	10.4	8.2	9.8	10.9
2019–20	12.3	10.7	8.4	9.8	11.2
2020–21	12.4	11.4	9.2	10.7	11.6

Figure 16 shows the residual waste collected by region and the amount sent to an alternative waste treatment facility. The Sydney metro area accounted for 48.5% of the total disposal.

Figure 16 Kerbside residual waste by end destination and region, 2013–21



In 2020–21, each NSW household created an average of 11.63 kg of residual waste per week. Of the 128 councils with residual-waste collection services, 25 sent some or all of their kerbside residual waste to an alternative waste treatment facility. From this collected waste, alternative waste treatment facilities recovered 171,900 tonnes of material.

In October 2018, the EPA revoked the general and specific Resource Recovery Orders and Resource Recovery Exemptions for the application of MWOO to land,[1] due to risks associated with chemical and physical contaminants. It also introduced phase one of a transition package for the alternative waste treatment industry to ensure kerbside collection services were not disrupted and that any extra transport and landfill costs were not passed on to councils or ratepayers.

Alternative waste treatment facilities produce MWOO (mixed waste organic outputs) by separating organic waste from other materials in the household waste found in red lid bins. This diverts material from landfill. Prior to October 2018, MWOO could be applied to land – under strict controls – as a soil amendment.

Figure 17 shows the amount of material sent to alternative waste treatment facilities, the amounts recovered and disposed of, and the average amount recovered over the past 11 years.

[1] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/recycling/18p1230-mixed-waste-organic-material-regulatory-change-factsheet.pdf?la=en&hash=39D8D6E773E4E42F2D6C2250020D82C6304C9575

Figure 17 AWT tonnes collected and recovery rate, 2008–21

Table 22 AWT recovery rate, 2008–21 (as shown in Figure 17)

Year	Recovered
2008–09	52%
2009–10	49%
2010–11	48%
2011–12	53%
2012–13	54%
2013–14	52%
2014–15	52%
2015–16	51%
2016–17	56%
2017–18	51%
2018–19	39%
2019–20	25%
2020–21	30%

4.2. Collection systems

NSW councils offer various combinations of waste, recycling, organics and FOGO kerbside collection services. They can be categorised into five types, as in Table 23. This table shows the average amount of waste collected kerbside each week for households with a service. The averages in Table 23 are based on the sum of all the collection services a council offers. Note that some councils have varied offerings within a service type (e.g. for a red lid bin service they may have different bin sizes or service frequency). The combinations in Table 23 show the average yield for the council's service offering.

Table 23 Kerbside collection system and average yield, 2019–21

Number of LGAs (total = 128)	Average amount collected (kg/wk)	Bin services offered	Average recycled
15	19.91	Red	21%
28	17.07	Red/Yellow	28%
48	21.78	Red/Yellow/Green	47%
37	20.54	Red/Yellow/FOGO	52%
4	21.33	Red/Yellow/Green/FOGO	53%

All 128 NSW councils had a residual waste collection service. Council kerbside waste services covered 87.4% of households: 90% in the Sydney metro area, 91% in the extended regulated area, 86% in the regional regulated area and 77% in the rest of the state.

One hundred and eleven (111) of the 128 councils provided a weekly residual waste collection service, collecting 12.81 kg per household per week on average. The remaining 17 councils collected fortnightly, yielding 7.84 kg per household per week.

Figure 18 shows the average collection per week by bin system. Bigger bins and more frequent (weekly) services gave the greatest yield. A 140-litre fortnightly service gave the lowest yield. Six councils offered this as their predominant service.

Figure 18 Kerbside residual waste, average by bin system

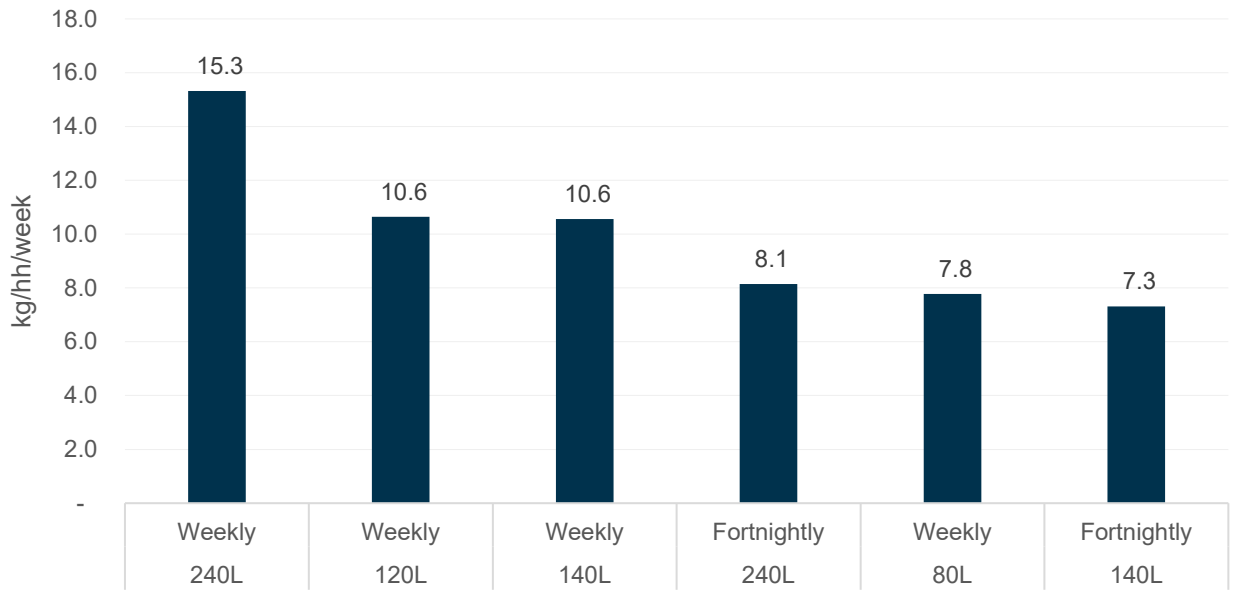


Table 24 Kerbside residual waste, bin average by system (as shown in Figure 18)

Bin system size	Frequency	Residual waste (kg/hh/week)	No. councils with service
240L	Weekly	15.3	56
120L	Weekly	10.6	19
140L	Weekly	10.6	29
240L	Fortnightly	8.1	10
80L	Weekly	7.8	5
140L	Fortnightly	7.3	6

One hundred and twelve (112) councils provided a service for dry recyclables. Eleven (11) had weekly services, yielding 5.23 kg per household per collection. Most of the remaining 101 services were fortnightly, yielding 3.88 kg per household per collection.

Figure 19 shows the 240-litre fortnightly service collecting 3.90 kg per household per week. The majority of NSW councils ninety-five (95) had this service.

Figure 19 Kerbside dry recyclables, average by bin system

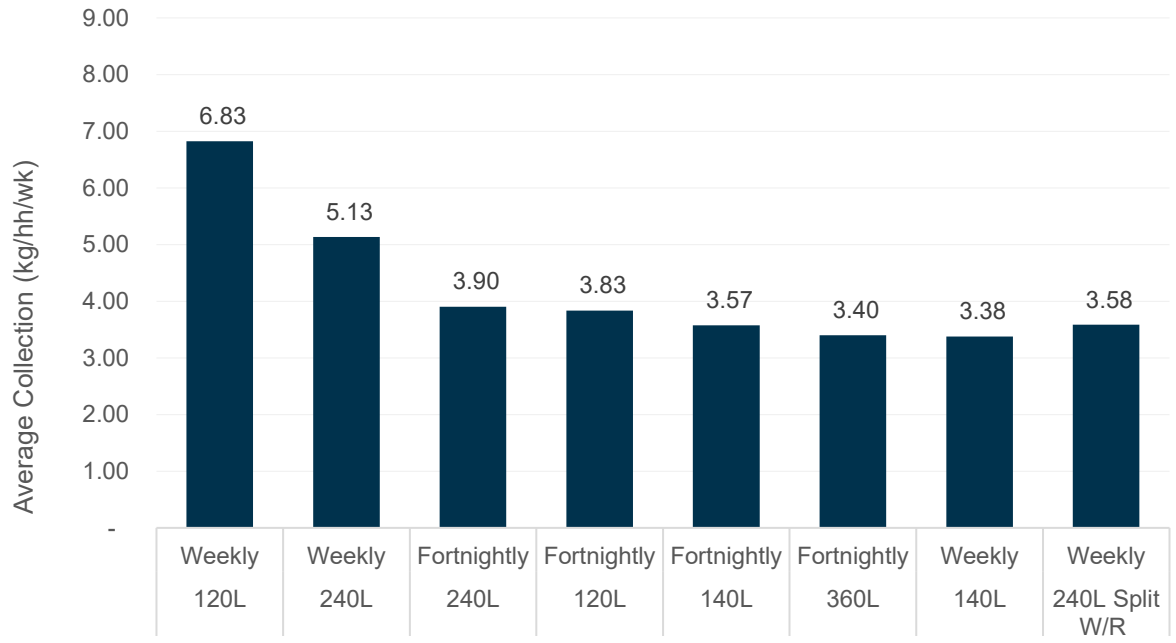


Table 25 Kerbside dry recyclables, bin average by system (as shown in Figure 19)

Bin system size	Frequency	Recycling (kg/hh/week)	No. councils with service
120L	Weekly	6.83	3
240L	Weekly	5.13	4
240L	Fortnightly	3.90	95
120L	Fortnightly	3.83	2
140L	Fortnightly	3.57	1
360L	Fortnightly	3.40	3
140L	Weekly	3.38	2
240L Split W/R	Weekly	3.58	1

Figure 20 Kerbside organics, average collection by bin system

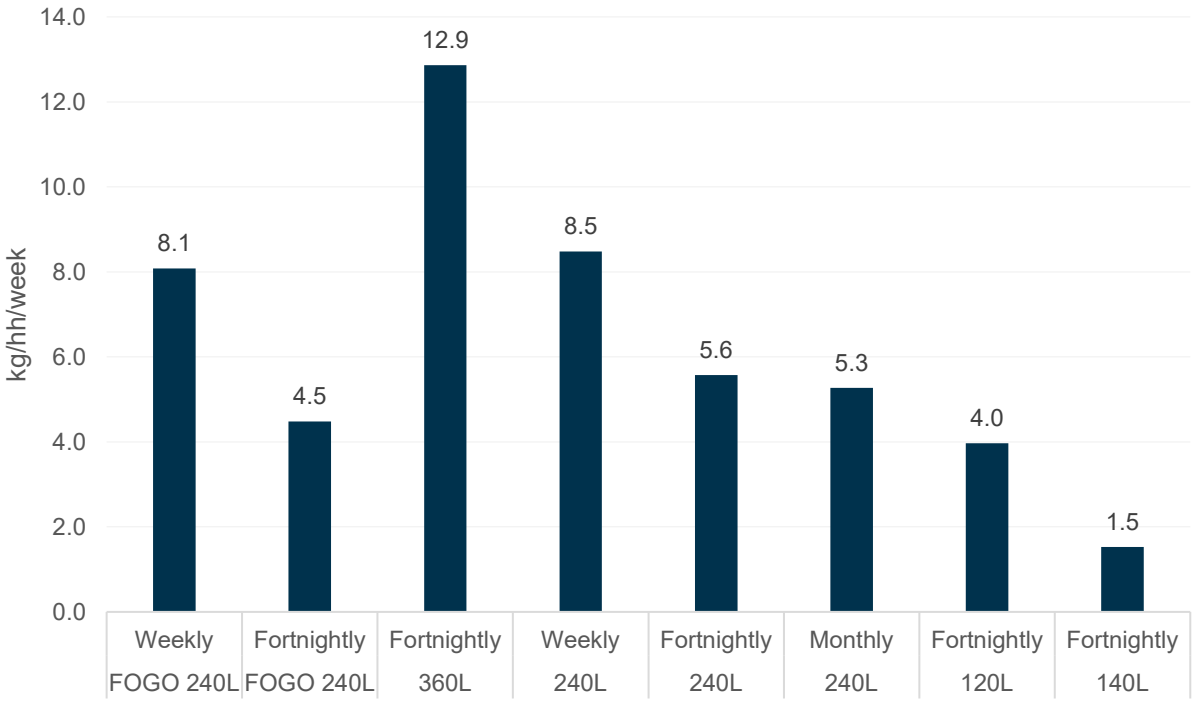


Table 26 Kerbside organics, average collection by bin system (as shown in Figure 20)

Bin system size	Frequency	Kerbside organics (kg/hh/collection)	No. councils with service
FOGO 240L	Weekly	8.08	30
FOGO 240L	Fortnightly	4.48	11
360L	Fortnightly	12.87	1
240L	Weekly	8.48	5
240L	Fortnightly	5.57	38
240L	Monthly	5.27	2
120L	Fortnightly	3.97	1

Forty-eight (48) councils offered a garden organics service. Forty-one (41) of them ran it fortnightly, yielding 5.61 kg per household per week.

Forty-one (41) councils collected FOGO. Thirty (30) of them provided this service weekly, collecting 8.08 kg per household per week, and eleven (11) provided it fortnightly, collecting 4.48 kg per household per fortnight.

5. Clean-up services

5.1. Waste collected by council clean-up services

In 2020–21, kerbside clean-up services by NSW councils collected 274,195 tonnes of waste. This comprised:

- bulky goods and other waste not listed below – 85% (233,452 tonnes)
- garden organics – 7.3% (20,129 tonnes)
- metals – 4.2% (11,414).
- mattresses – 2.7% (7,268 tonnes)
- e-waste – 0.7% (1,842 tonnes).

Figure 21 Kerbside clean-up waste (tonnes), by material type

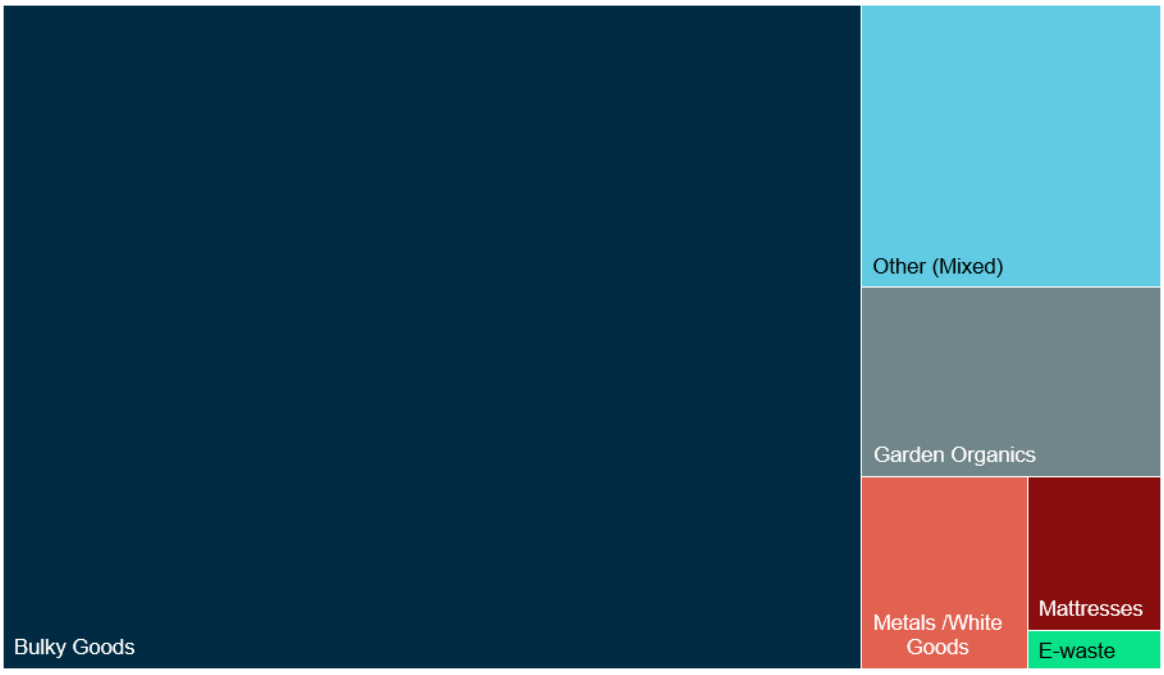


Table 27 Tonnes of source-separated clean-up materials by type, 2020–21 (as shown in Figure 21)

Material type	Collected (tonnes)	Recycled (tonnes)	Disposed of (tonnes)	% Recycled
Garden organics	20,129	20,108	21	100%
E-waste	1,842	1,833	9	100%
Metals/white goods	11,414	11,304	110	99%
Mattresses	7,268	6,972	296	96%
Bulky goods	203,452	31,540	171,912	16%
Other (mixed)	30,090	14,349	15,741	48%
Total	**274,195**	**86,106**	**188,089**	**31%**

Notes

Bulky goods disposed of may include recyclable material, such as garden organics and mattresses, that was collected as bulky goods.

Due to rounding, the figures for the totals may differ from the sums of the component numbers.

Most of the bulky goods and other mixed materials were sent to landfill.

Table 28 shows that regions vary greatly in how much material was collected by clean-ups and how much of that was recycled. The greatest amount of material was collected from the Sydney metro region but only 32% of it was recycled.

Table 28 Tonnes of bulk waste clean-up materials by area, 2020–21

Region	Councils (number)	Collected (tonnes)	Recycled (tonnes)	Landfilled (tonnes)	% Recycled
Sydney metro area	28	181,418	58,388	123,030	32%
Extended regulated area	10	72,407	20,558	51,849	28%
Regional regulated area	12	14,124	5,192	8,932	37%
Rest of the State	20	6,247	1,968	4,279	31%
NSW	**70**	**274,195**	**86,105**	**188,089**	**31%**

Note: Total figures do not represent the sum of the component numbers due to rounding.

Figure 22 shows kerbside clean-up waste collected over time. Bulky waste makes up 82% while recyclables and organics account for 9% each.

Figure 22 Kerbside clean-up waste, by stream, 2012–21

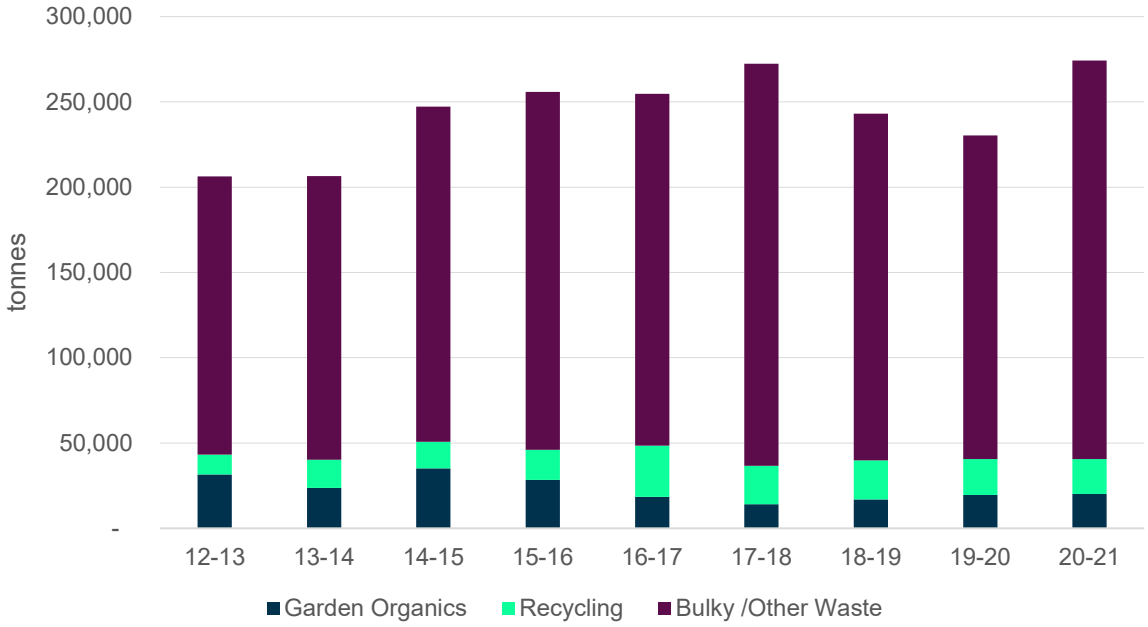


Table 29 Kerbside clean-up waste by stream, 2012–20 (as shown in Figure 22)

Year	Garden organics (tonnes)	Recycling (tonnes)	Bulky/other waste (tonnes)
2012–13	31,557	11,708	163,095
2013–14	23,744	16,390	166,360
2014–15	35,198	15,517	196,426
2015–16	28,361	17,771	209,718
2016–17	18,465	30,054	206,251
2017–18	14,228	22,391	235,710
2018–19	16,996	22,808	203,321
2019–20	19,646	20,983	189,738
2020–21	20,129	20,524	233,542

Figure 23 Kerbside clean-up waste, by material type, 2012–21

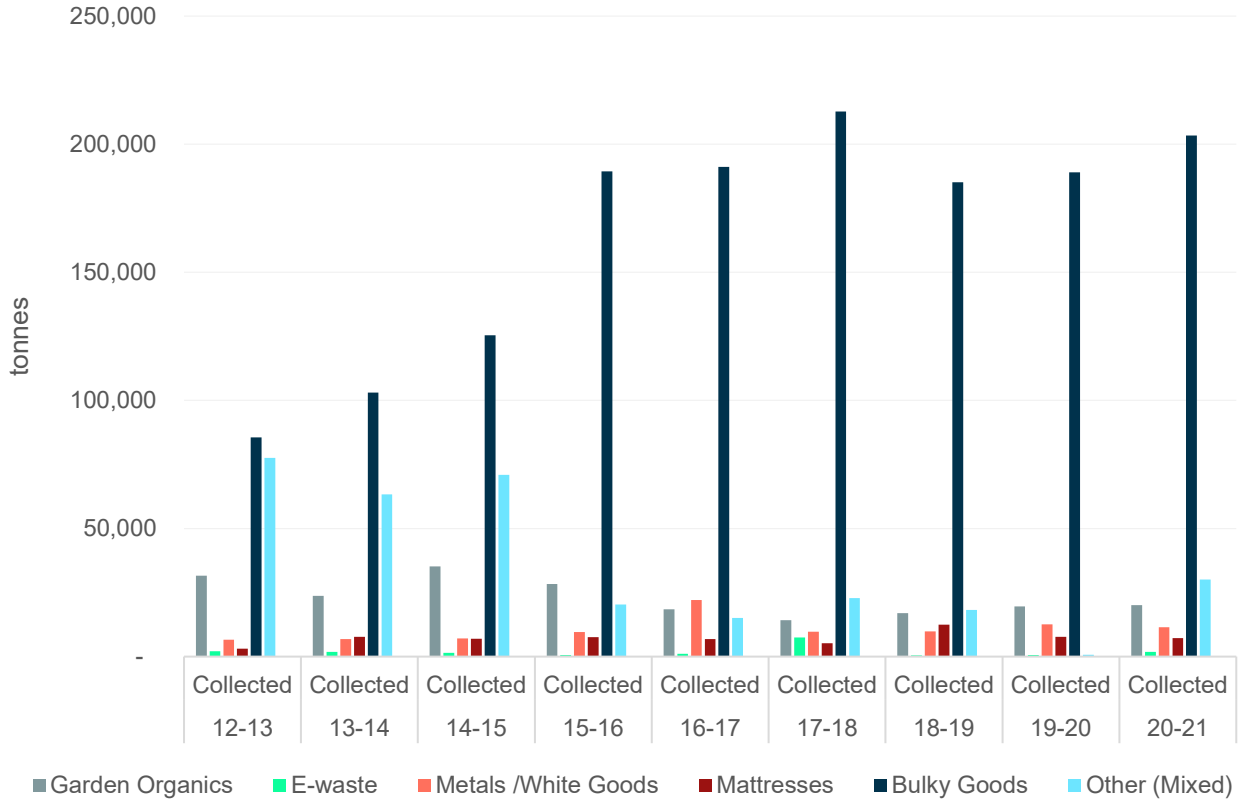


Table 30 Kerbside clean-up waste by material type, 2012–20 (as shown in Figure 23)

Year	Garden Organics	E-Waste	Metals/White Goods	Mattresses	Bulky Goods	Other (Mixed)
2012–13	31,557	2,034	6,618	3,057	85,576	77,519
2013–14	23,744	1,841	6,863	7,686	103,059	63,301
2014–15	35,198	1,442	7,126	6,949	125,434	70,993
2015–16	28,361	544	9,575	7,652	189,396	20,322
2016–17	18,465	1,154	22,049	6,851	191,117	15,133
2017–18	14,228	7,438	9,733	5,219	212,817	22,892
2018–19	16,996	462	9,838	12,508	185,204	18,167
2019–20	19,646	581	12,638	7,764	189,017	22,541
2020–21	20,129	1,842	11,414	7,268	203,452	30,090

6. Drop-off facilities

6.1. Waste dropped off at a facility by residents

Across NSW, 116 of the total 128 council areas offered some sort of drop-off facility for residents. Figure 24 shows that in 2020–21 these facilities received 570,128 tonnes of material, comprising:

- 340,420 tonnes of residual waste
- 121,934 tonnes of organics
- 107,774 of dry recyclables.

Figure 24 Drop-off material received, by waste stream, 2013–21

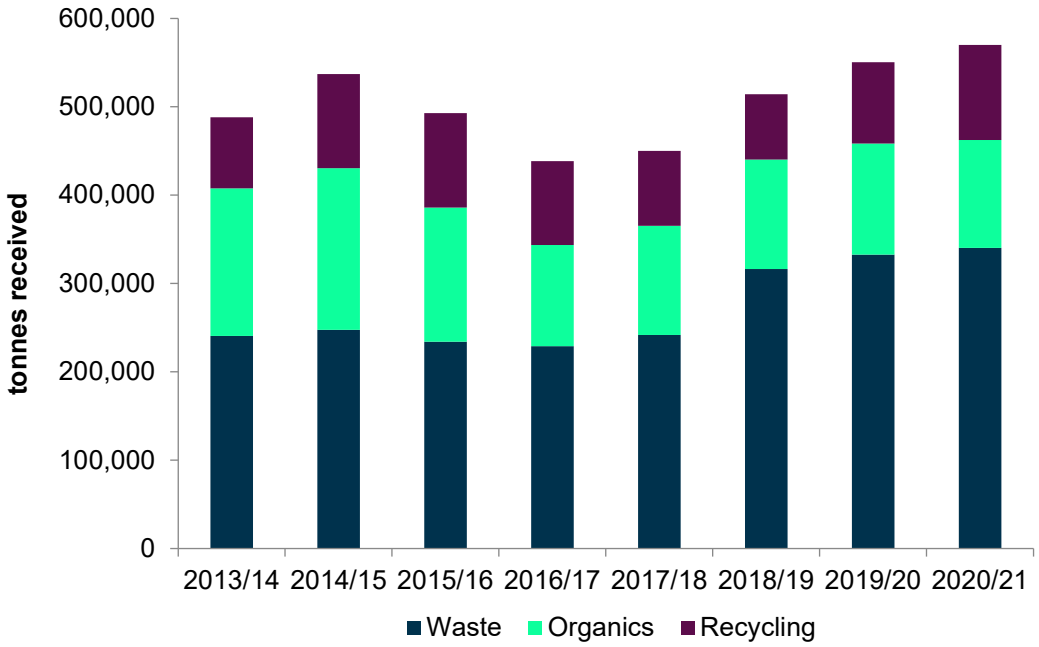


Table 31 Drop-off material received, by waste stream, 2013–20 (as shown in Figure 24)

Year	Residual waste (tonnes)	Organics (tonnes)	Recycling (tonnes)
2013–14	240,778	167,074	80,437
2014–15	247,499	183,191	106,331
2015–16	234,246	151,646	107,087
2016–17	228,899	114,610	95,076
2017–18	241,751	123,572	84,709
2018–19	316,404	123,789	73,943
2019–20	332,618	125,873	91,876
2020–21	340,420	121,934	107,774

NSW drop-off facilities received 15% more material in 2020–21 than in 2019–20. The split between residual waste, recycling and organics has remained consistent over the past four years.

In 2020–21 a total of 40% of material from drop-off facilities was recycled.

Table 32 Drop-off service provisions by region, 2020–21

Region	Councils (number)	Collected (tonnes)	Recycled (tonnes)	Landfilled (tonnes)	Recycled (%)
Sydney metro area	25	16,182	15,710	472	97%
Extended regulated area	12	121,208	58,039	63,170	48%
Regional regulated area	18	138,726	58,784	79,943	42%
Rest of the state	56	294,011	127,505	166,506	43%
NSW	111	570,128	260,037	310,091	46%

Figure 25 shows the material by waste stream over time. This is the total tonnes accepted at a facility from residents.

Figure 25 Drop-off waste received, by stream, 2007–21

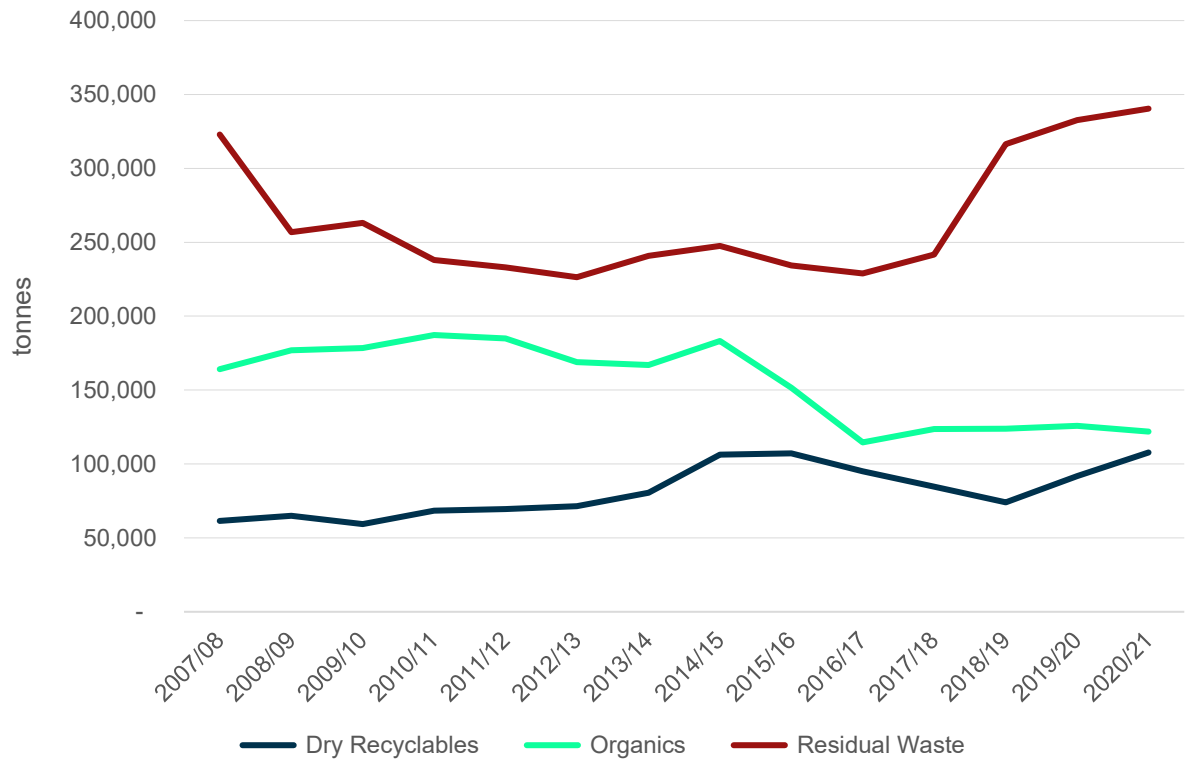


Figure 26 shows the fate of all three streams in amounts collected, recycled and disposed of. The trendline shows the percentage recycled.

Figure 26 Drop-off amounts and percentage recovered, 2007–21

Table 33 Drop-off waste, percentage recovered, 2007–20 (as shown in Figure 26)

Year	Recovered
2007–08	41%
2008–09	46%
2009–10	46%
2010–11	49%
2011–12	50%
2012–13	50%
2013–14	52%
2014–15	54%
2015–16	51%
2016–17	52%
2017–18	50%
2018–19	44%
2019–20	45%
2020–21	46%

Glossary

Clean-up

A council service to collect material from the kerbside rather than from a bin. Collects mainly bulky waste items, large organics and hard waste. The service can be on-call or performed on a regular basis (e.g. yearly or six-monthly).

Contaminants

Material rejected by recycling operators that is disposed of in landfill. Organics that are not processed are sent to landfill.

Drop-off

A council facility where residents can drop off material for recycling or disposal.

Dry recyclables

Materials of the kind collected in the yellow-lid recycling bin. Councils vary in what they will accept. Household recyclables are collected through:

- kerbside collection, which picks up
  - mixed paper
  - newspaper, magazines, cardboard
  - plastic films and bottles
  - steel and aluminium cans
  - glass bottles
- drop-off facilities, which accept the materials above plus others (e.g. batteries and gas bottles)
- clean-up services, which collect large metals and bulky goods.

Organic recyclables

Mainly bark, leaves, twigs and lawn clippings. Food and garden organics (FOGO) also include food scraps. Organics are collected from the kerbside and through clean-up and drop-off facilities.

Recyclables

Dry recyclable and organic waste material that is not residual waste.

Recycling rates

The percentage of all domestic waste that is recycled, calculated as
(total recycled ÷ total collected) x 100.

Residual waste

Household waste, less recyclables and organics.

Total domestic waste

All waste created by households: the residual waste, recyclables and organics that councils collect from households from the kerbside and through clean ups and drop-off facilities.

Waste stream

The category of the collected waste. The streams are:

- residual waste – predominantly red lid bin material, intended for disposal
- dry recyclables – collected in the yellow-lid bin, intended for recycling
- organics – intended for recycling.