



Environment Protection Authority

NSW Local Government Waste and Resource Recovery Data Report 2019–20

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 2019–20 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 2019–20

In 2019–20, NSW households generated 3.8 million tonnes of domestic waste, comprising:

- 2.24 million tonnes of residual waste
- 1.56 million tonnes of recycling and organics (including containers from *Return and Earn*).

The breakdown by area was:

- Sydney metro area – 1.88 million tonnes (51% of NSW total)
- extended regional area – 769,000 tonnes (20.9% of NSW total)
- regional regulated area – 469,000 tonnes (12.7% of NSW total)
- the rest of NSW – 568,000 tonnes (15.4% of NSW total).

Changes since 2018–19

Total tonnes generated rose by 2.86% on the 2018–19 level. By waste type:

- domestic waste increased by 7.7%
- recyclables increased by 0.35%
- organics increased by 1.96%.

From 2018–19 to 2019–20:

- average total household waste generated rose from 20.87 kg/hh/week (kilograms per household per week) to 21.19 kg/hh/week
- domestic waste collected rose from 12.38 kg/hh/week to 12.89 kg/hh/week
- domestic recycling collected fell from 4.03 kg/hh/week to 3.90 kg/hh/week
- domestic organics collected fell from 4.46 kg/hh/week to 4.40 kg/hh/week.

Domestic waste is collected through kerbside bin, clean up and resident drop-off services but not the container deposit scheme (CDS).

Amounts collected from kerbside

Not all council areas offer all collection services. Every week, the average household with a kerbside bin service puts out for collection:

- 3.79 kg of recyclables
- 5.15 kg of garden organics
- 7.54 kg of food and garden organics
- 11.19 kg of residual waste.

Average overall domestic kerbside waste collected per household per week is 21.19 kg. This calculated from the total tonnage collected from kerbside, clean-up and drop-off services (excluding CDS), divided by the total number of households (regardless of service).

Provision of household services

In 2019–20 there were 3,342,024 households in NSW. Of these:

- 2,952,576 – 88.3% – had a council kerbside waste service
- 2,864,349 – 85.7% – had a kerbside recycling service.

Some households, particularly those in multi-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 may vary from year to year.

Figure 1 Average weekly collection from households with a kerbside bin service, by area

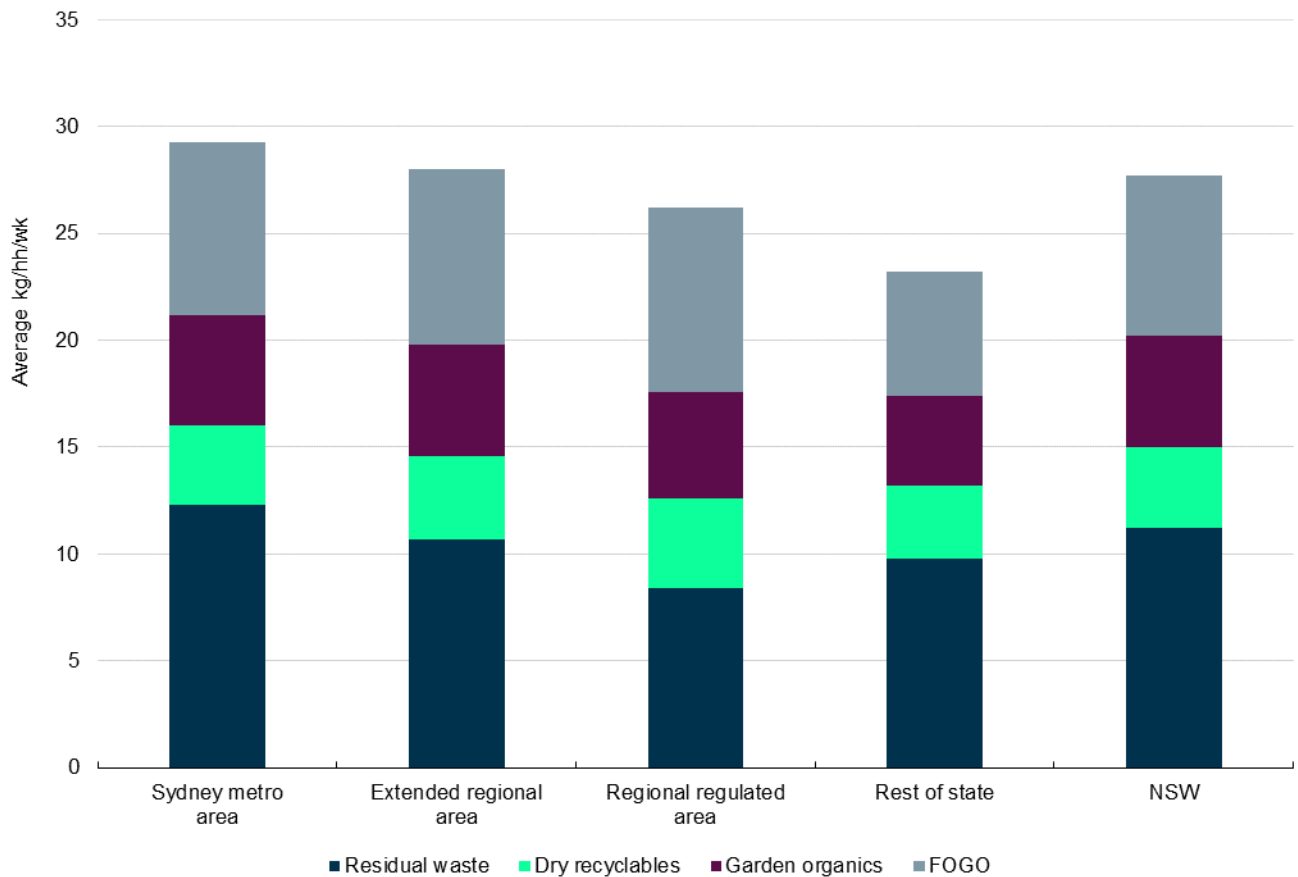


Table 1 Average kilogram per household per week collected from households with a kerbside bin service, by area (as shown in Figure 1)

Year	Residual waste (tonnes)	Garden organics (tonnes)	Dry recyclables (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

1.4. Increase recycling

In 2019–20 around 1.66 million tonnes of waste from domestic kerbside, clean-up and drop-off services were recycled. The total comprised:

- 736,000 tonnes of dry recyclables
- 743,000 tonnes of organics
- 177,000 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 119,353 tonnes were collected and recycled through the CDS in 2019–20. This is an increase from the 105,610 tonnes collected and recycled in 2018–19.

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. Last year's published figure was 115,676 tonnes, but this has been amended after changes in the conversion factors.

Note: The methodology used to convert the number of containers redeemed into a weight has been improved since the FY19 Annual Report was published to more accurately reflect trends in container packaging. Conversion factors are updated six monthly rather than using fixed factors. (Source: *Return and Earn: Annual Statutory Report 2019–20*, p. 21)

The kerbside yellow-lid recycling service collected 564,249 tonnes in 2019–20, slightly less than the 581,233 tonnes of 2018–19. The additional amount collected from the *Return and Earn* container deposit scheme gave a total of 683,602 tonnes, which was 3,241 tonnes less than the total amount collected in 2018–19.

Organics

Organics collected from the kerbside totalled 621,616 tonnes in 2019–20, up from the 609,662 tonnes collected in 2018–19. Of these:

- 405,717 tonnes of garden organics were collected at the kerbside
- 215,899 tonnes of food and garden organics were collected at the kerbside.

Organics were also collected from drop-off services (125,873 tonnes) and clean-up services (17,695 tonnes).

'Other council organics' accounted for 48,205 tonnes collected.

In 2019–20, total organics collected – the sum of the categories above – was 813,389 tonnes, up 4.4% from the 2018–19 total.

Residual waste sent to AWT facilities

In addition, 23 councils sent 487,219 tonnes of kerbside residual waste to an alternative waste treatment (AWT) facility where 122,855 tonnes, or an average of 25%, 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

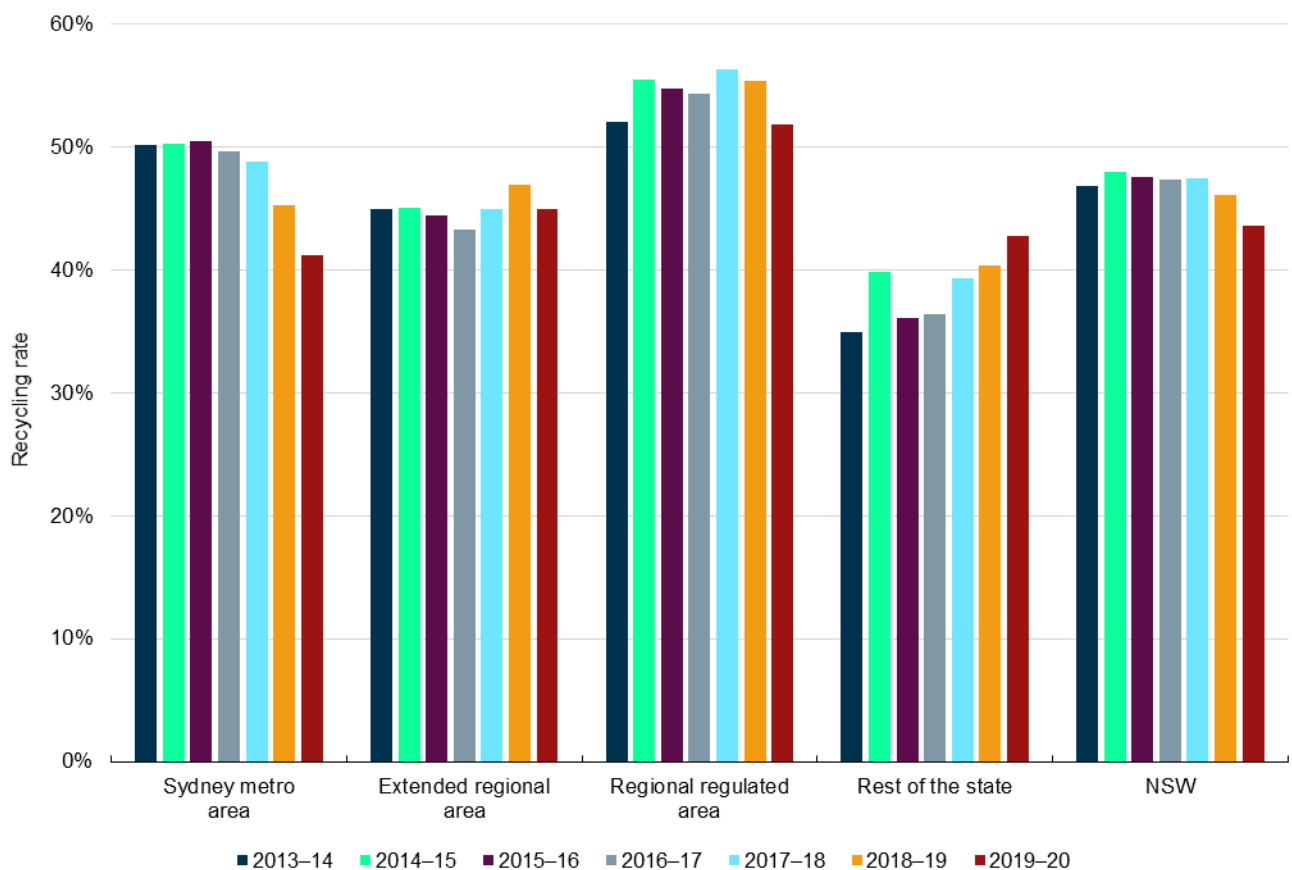
Table 2 shows the totals for municipal waste, recyclables and organics reported. The figures for waste generated per household and per capita per week are based on total households and population regardless of service. They are calculated by taking the total waste figures and dividing them by the total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

Table 2 Total municipal waste generated in NSW, 2019–20

Waste stream	Collected (tonnes)	Recovered (tonnes)	Disposed of (tonnes)	Recycling rate (% of collected)	Total generated kg/hh/wk	Total generated kg/ca/wk
Recyclables	800,487	742,689	57,798	92.8%	4.61	1.90
Organics	813,389	786,945	25,137	96.7%	4.68	1.93
Residual waste	2,325,384	183,695	2,140,250	7.9%	13.38	5.53
Total generation	3,939,260	1,713,330	2,223,185	43.5%	22.67	9.37

Figure 2 shows the recycling rate by area over the past seven years. The total recycling rate for domestic waste 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.

Figure 2 Recycling rate by area, 2013–20



The decrease for NSW in the last two years is due mainly to reduced AWT recovery. The numbers for NSW are given in Table 3.

Table 3 Average recycling rate for NSW, 2013–2020
(as shown in Figure 2)

Year	Recycling rate
2013–14	46.8%
2014–15	48.0%
2015–16	47.5%
2016–17	47.3%
2017–18	47.4%
2018–19	46.1%
2019–20	43.7%

2. Total domestic waste

2.1. Generated and recycled

In 2019–20 NSW created 3.8 million tonnes of domestic waste. This is an increase of 146,000 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.

The average total domestic waste generated was 21.2 kg per household per week or 8.8 kg per person per week, based on the total number of households and people in NSW. Waste generated per household is the waste collected by regular kerbside collections and by clean-up and resident drop-off services.

From the 3.8 million tonnes of domestic waste generated, 2.14 million tonnes of residual waste was disposed of in landfill. This was an increase of about 135,700 tonnes (6.8%) from 2018–19.

A total of 1.66 million tonnes of the domestic waste generated was recycled, a decrease of 63,300 tonnes from 2018–19. The total domestic tonnes generated, and recycling figures, includes 119,353 tonnes of containers collected by the container deposit scheme, *Return and Earn*.

Note: Last year's published figure for the container deposit scheme was 115,676 tonnes. This has been amended to 105,610 tonnes, following changes in the conversion factors used to calculate this figure. Similarly, the figure published last year for total drop-off waste was 244,566 tonnes, but it should have been 316,404 tonnes. All totals in this 2019–20 report reflect these amendments.

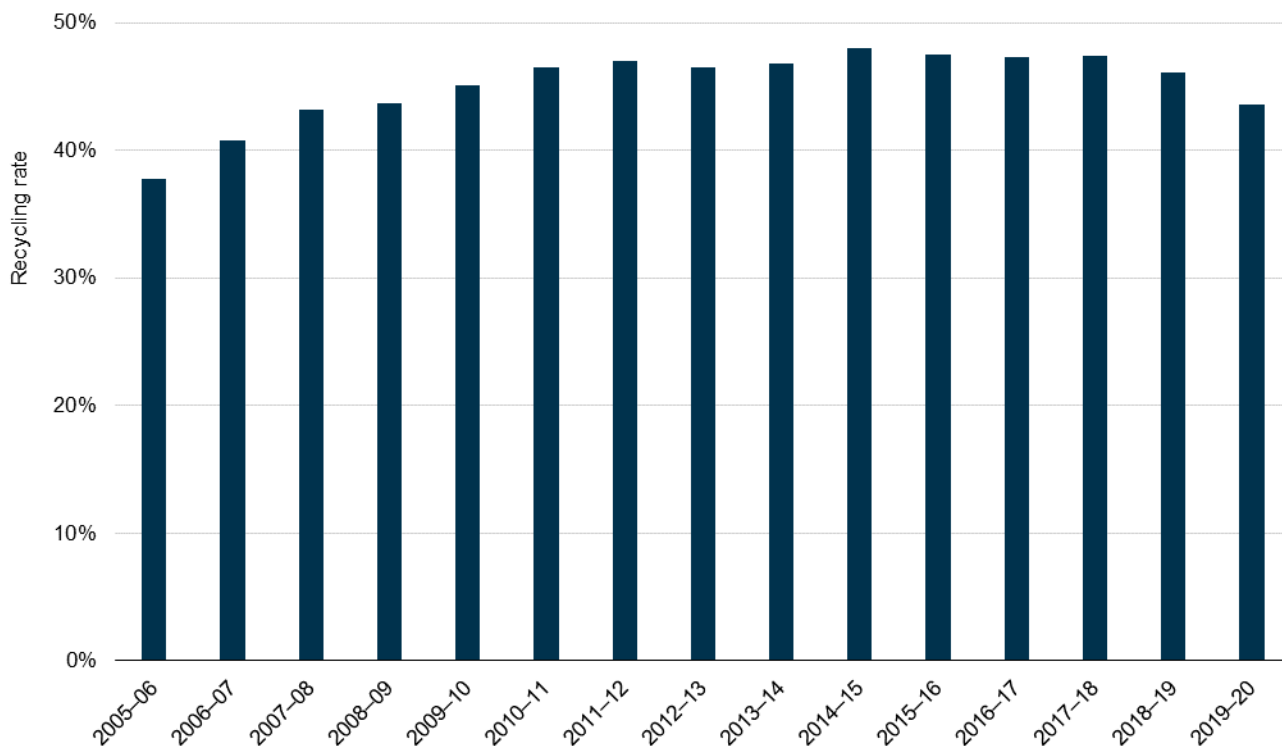
The total domestic recycling rate decreased from 46.1% in 2018–19 to 43.6% in 2019–20.

In 2019–20 NSW residents recycled 43.6% of domestic waste – 1.66 million tonnes of 3.80 million tonnes. This figure includes:

- kerbside recycling (508,000 tonnes)
- CDS recycling (119,500 tonnes)
- kerbside organics (605,500 tonnes)
- alternative waste treatment (123,000 tonnes)
- clean-up services (53,000 tonnes)
- drop-off facilities (247,000 tonnes).

Figure 3 shows the recycling rates in NSW over time. Although the increases have been consistent overall, over the past four years they have been marginal. The decline in the past two years 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 has led the overall recycling rate to drop by 4%.

Figure 3 NSW domestic recycling rate, 2005–20



The kerbside recycling rate decreased last year because:

- about 120,000 tonnes less material has been recycled by alternative waste treatment plants
- more kerbside and drop-off waste is being sent to landfill (102,000 tonnes in 2019–20).

Table 4 NSW domestic recycling rate, 2005–20 (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%
2012–13	46.5%
2013–14	46.8%
2014–15	48%
2015–16	47.5%
2016–17	47.3%
2017–18	47.4%
2018–19	46.1%
2019–20	43.7%

Figure 4 Domestic recycling rate by area, 2013–20

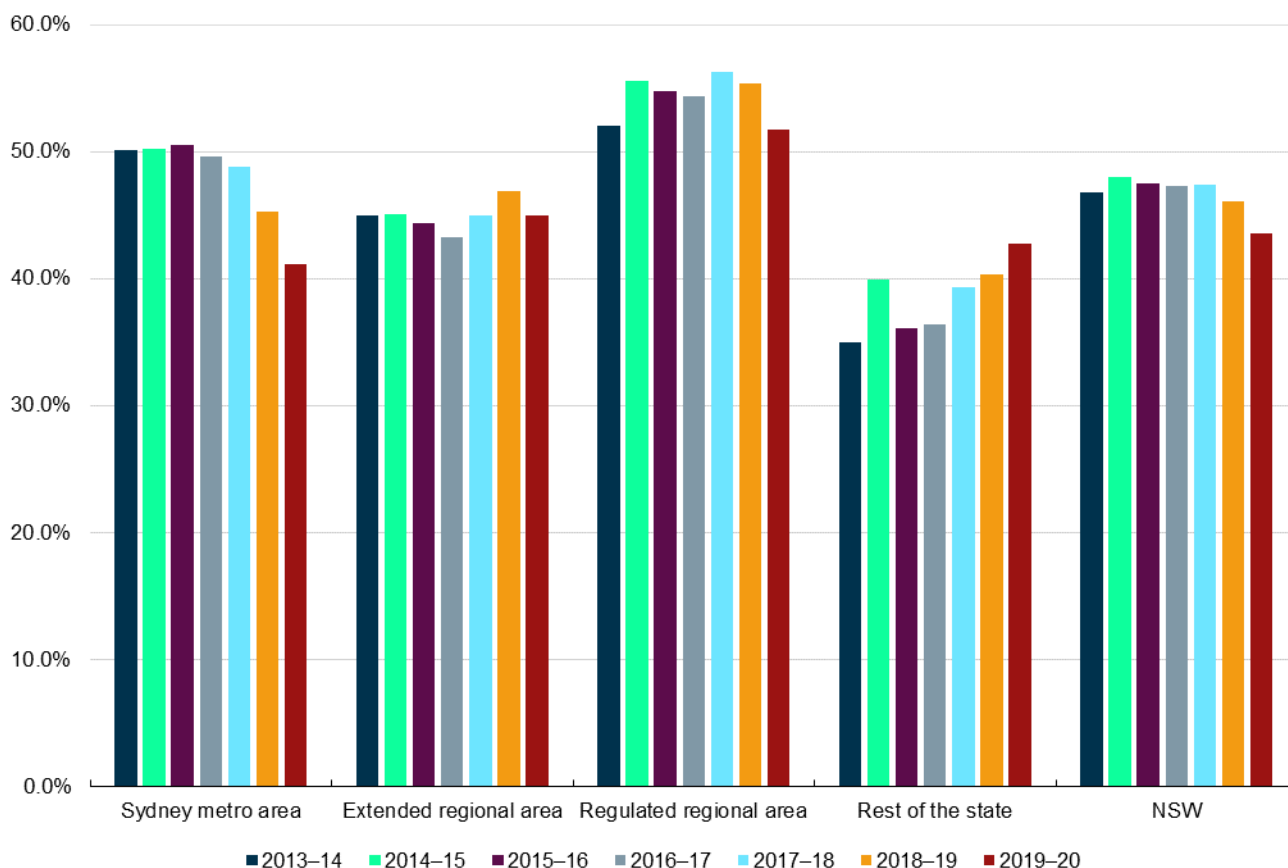


Figure 4 shows the recycling rates by NSW areas. This year the regional regulated area (RRA) reported the highest level (51.8%). The extended regional area (ERA) reported 44.9%. Only these two areas were recycling at levels above the state average (43.6%).

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 7.6%. For kerbside organics it was 2.8%. For residual waste, 7.9% was recycled and the rest was disposed of in landfill.

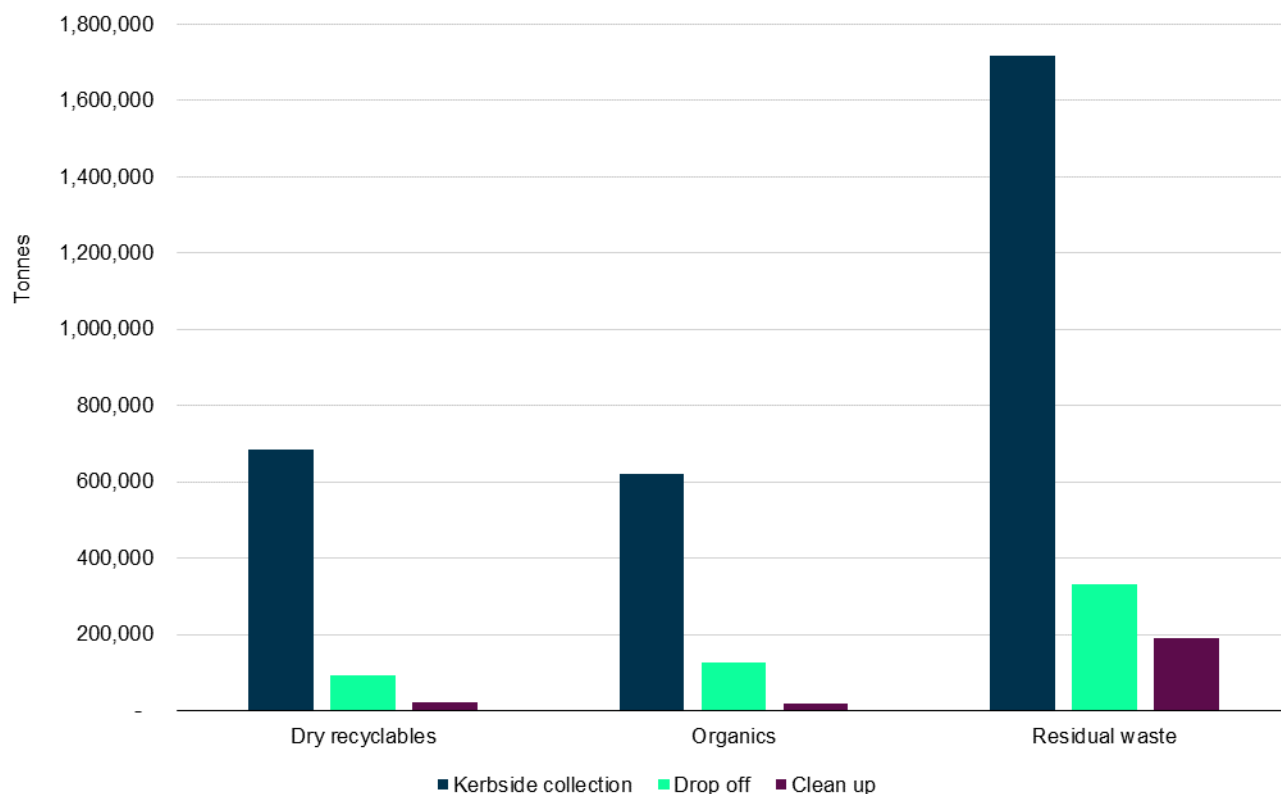
Table 5 Total domestic generation and fate by waste stream, 2019–20

Waste stream	Collected (tonnes)	Recovered (tonnes)	Disposed of (tonnes)	Recycling rate (% of collected)	Total generated kg/hh/wk	Total generated kg/ca/wk
Dry recyclables	796,461	738,669	57,792	92.7%	4.58	1.89
Organics	765,184	746,490	17,387	97.6%	4.40	1.82
Residual waste	2,240,830	176,651	2,062,741	7.9%	12.89	5.33
Total generation	3,802,475	1,661,811	2,137,920	43.7%	21.88	9.04

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/ca/wk (kilograms per person per week) are based on total households and total population, regardless of which services are available to them.

Most domestic waste is collected at the kerbside, which is why waste-education programs focus on this collection point.

Figure 5 Total domestic waste collected, by waste stream and collection method, 2019–20



Note: 'Dry recyclables' here includes material collected through the container deposit scheme.

Table 6 Domestic waste collected, by waste stream and collection method, 2019–20 (as shown in Figure 5)

Waste stream	Kerbside collection (tonnes)	Drop off (tonnes)	Clean up (tonnes)
Dry recyclables	683,602	91,876	20,983
Organics	621,616	125,873	17,695
Residual waste	1,718,474	332,618	189,738

Figure 6 shows the amount of domestic waste collected at the kerbside between 2009 and 2020. The current average amount of domestic waste collected at the kerbside is 21.88 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.

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

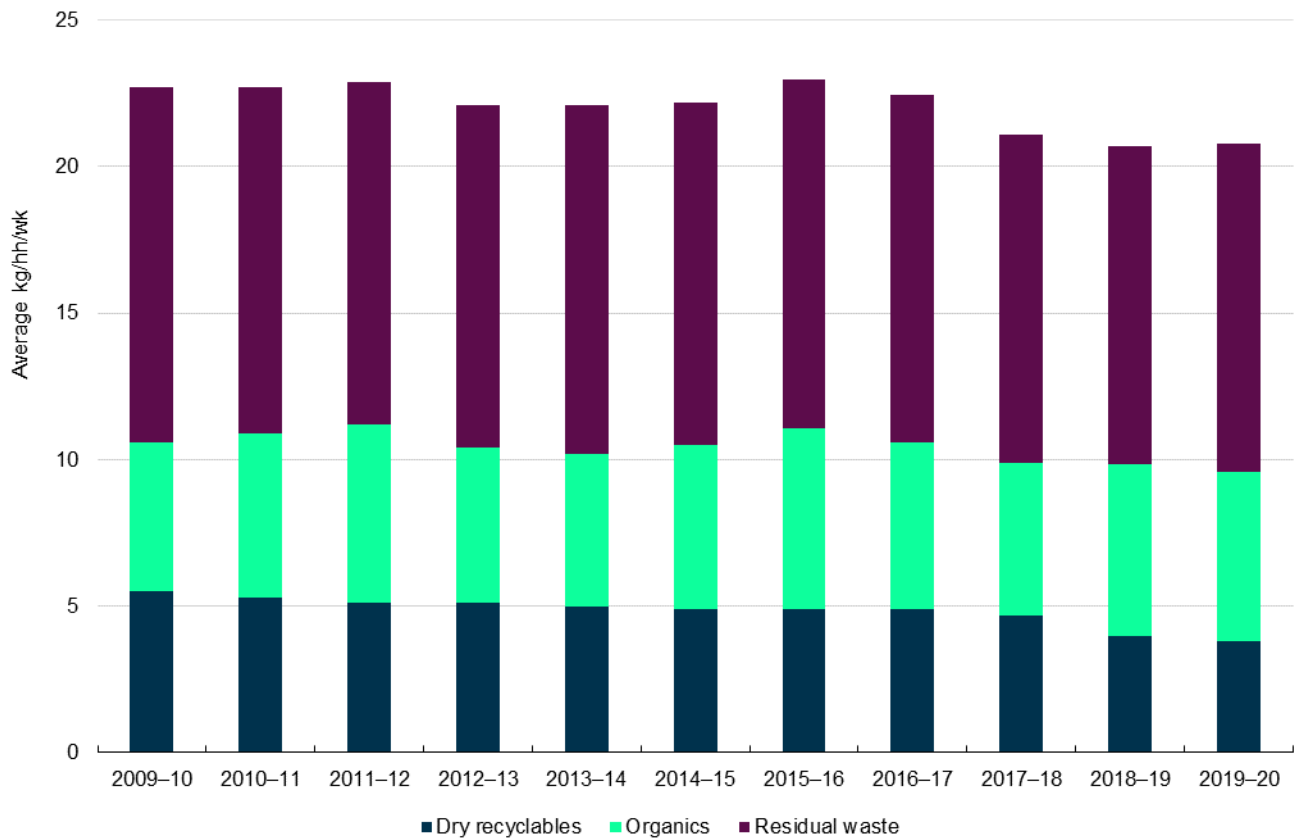


Table 7 Average weekly kerbside waste collection for households with a council service, 2009–20 (as shown in Figure 6)

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

Figure 7 Total waste collected at the kerbside, by processing destination, 2010–20

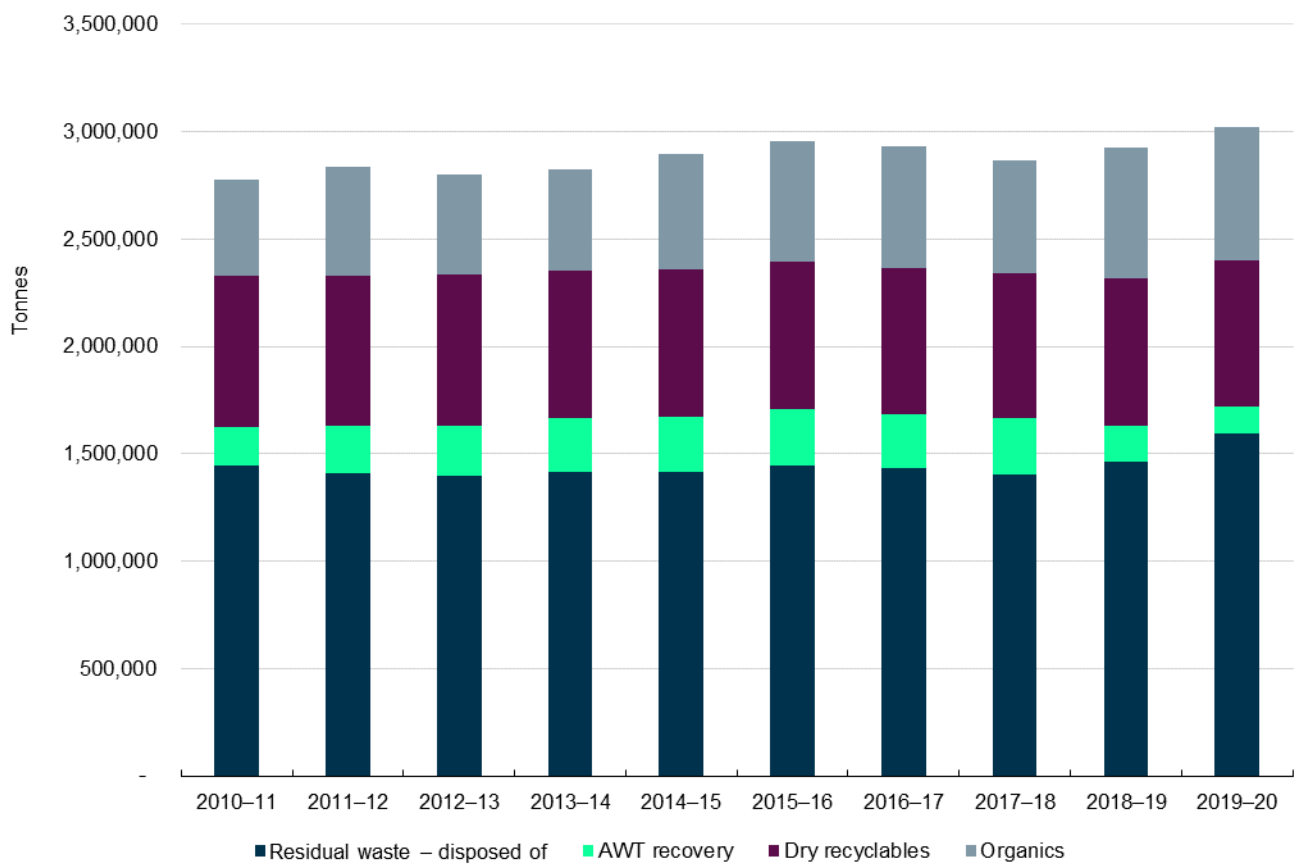


Table 8 Total waste collected at the kerbside, by processing destination, 2010–20 (as shown in Figure 7)

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

3. Recycling

3.1. Dry recyclables collected and recycled

Dry recyclables formed 21% of total domestic waste in 2019–20. A total of 796,461 tonnes was collected, including 119,353 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 2019–20, 796,461 tonnes of dry recyclables were collected in NSW. Of these:

- 70.8% or 564,249 tonnes was collected from the kerbside recycling bins.
- *Return and Earn* collected 15%.
- Residents took 91,876 tonnes or 11.5% to drop-off points.
- Clean-up services collected the remaining 2.6%.

Around 73% 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 87% 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, 2019–20

Amount	Sydney metro	Extended area	Regional area	Rest of the state	NSW
No. of councils	30	12	19	51	112
Kerbside (tonnes)	312,930	118,290	71,210	61,818	564,249
Drop-off (tonnes)	3,039	21,516	25,011	42,310	91,876
Clean-up (tonnes)	14,349	3,942	1,695	997	20,983
CDS (tonnes)	48,514	28,406	18,121	24,312	119,353
Other hazardous material recycled (tonnes)	161	112	24	3,729	4,026
Total domestic (tonnes)	378,993	172,267	116,061	133,165	800,487

One hundred and twelve (112) of 128 NSW councils reported a recycling collection service: between them they covered 85.7% of all households. The Sydney metro region collected 55% 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 2,816,063 households, per household and per person for each region. In 2019–20, an average of 197 kg of kerbside dry recyclables was collected from households with a recycling service. This is a weekly average of 3.79 kg per household or 1.54 kg per person.

Table 10 Kerbside dry recyclables collected per household and per person by region, 2019–20

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
Sydney metro	1,617,503	193	3.72	73.04	1.40
Extended area	576,411	205	3.95	86.86	1.67
Regional area	322,652	221	4.24	103.08	1.98
Rest of state	347,783	178	3.42	85.64	1.65
NSW	2,864,349	197	3.79	79.94	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

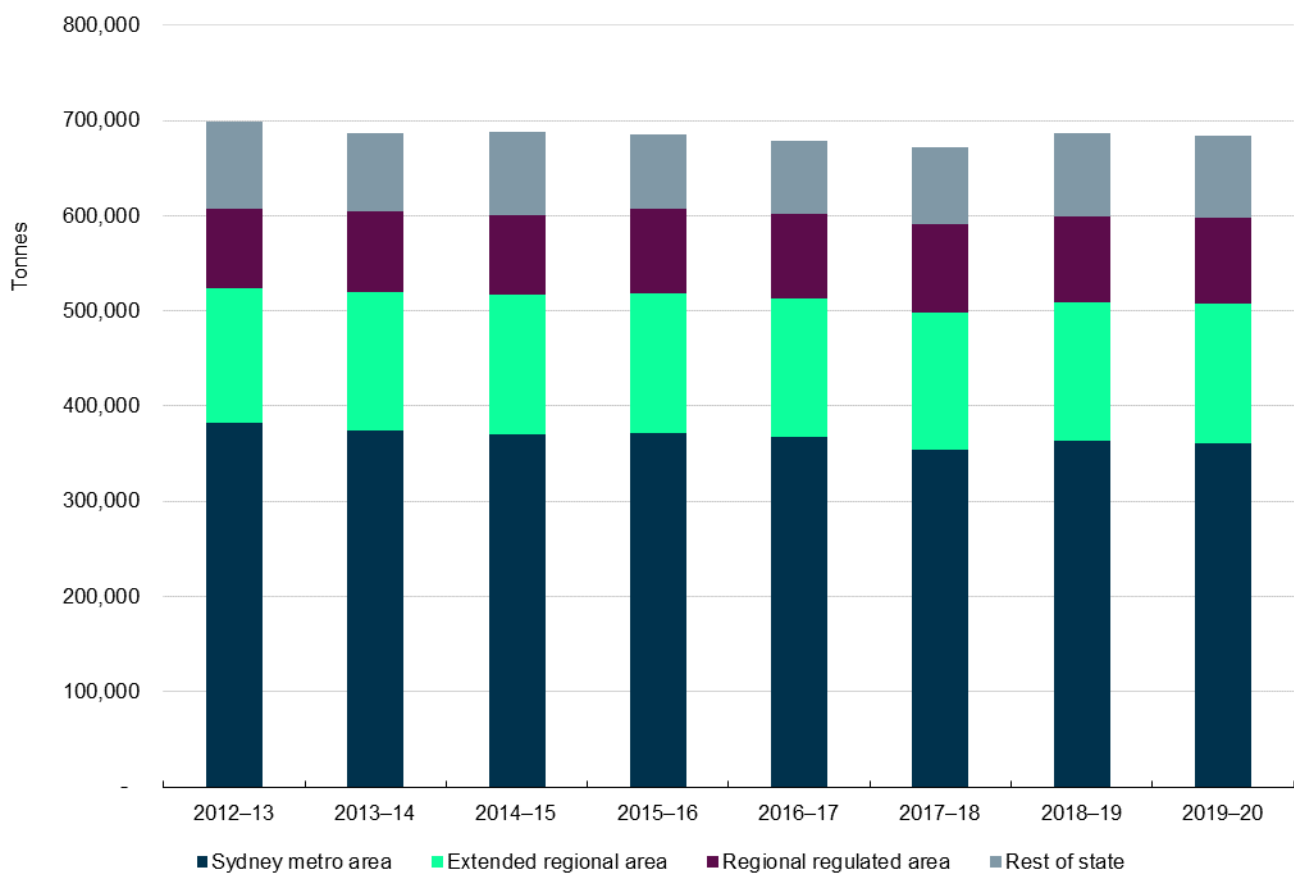


Table 11 Kerbside dry recyclables collected, by area, 2012–20 (as shown in Figure 8)

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

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

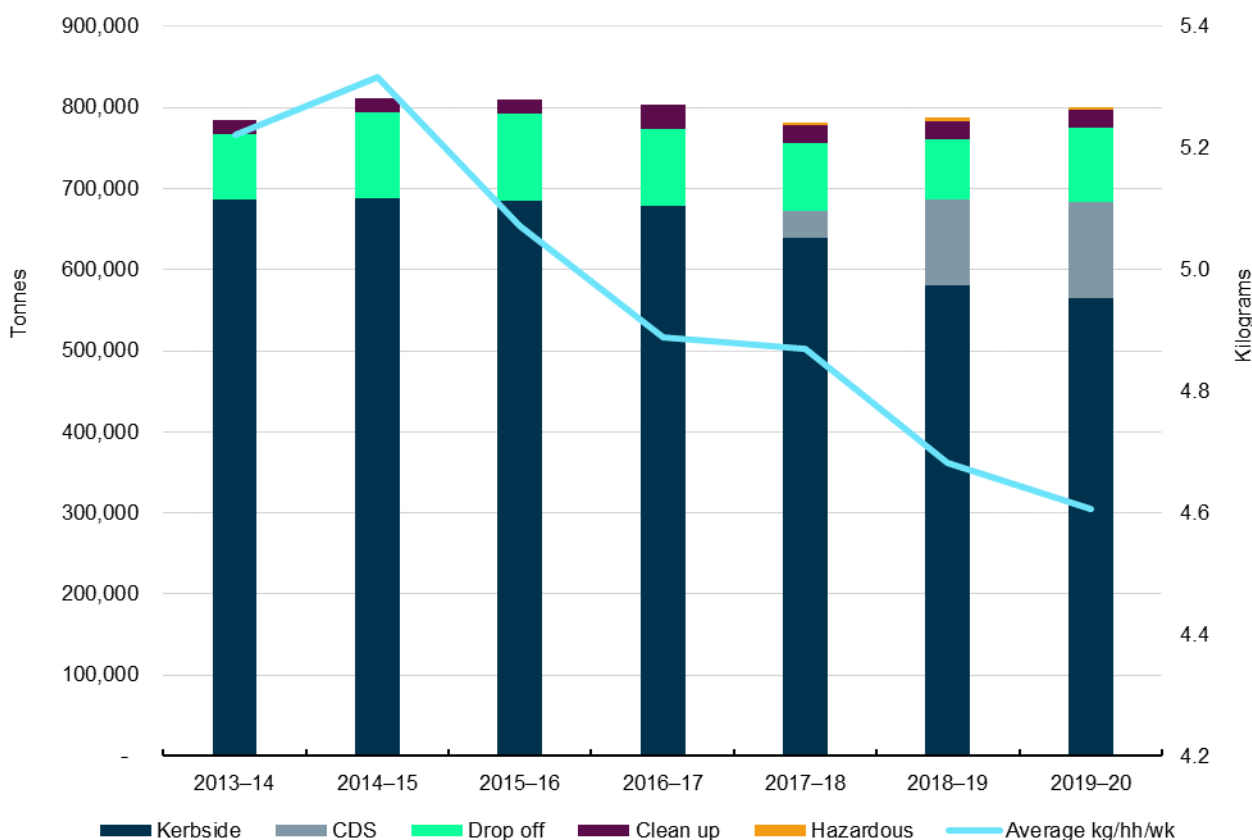
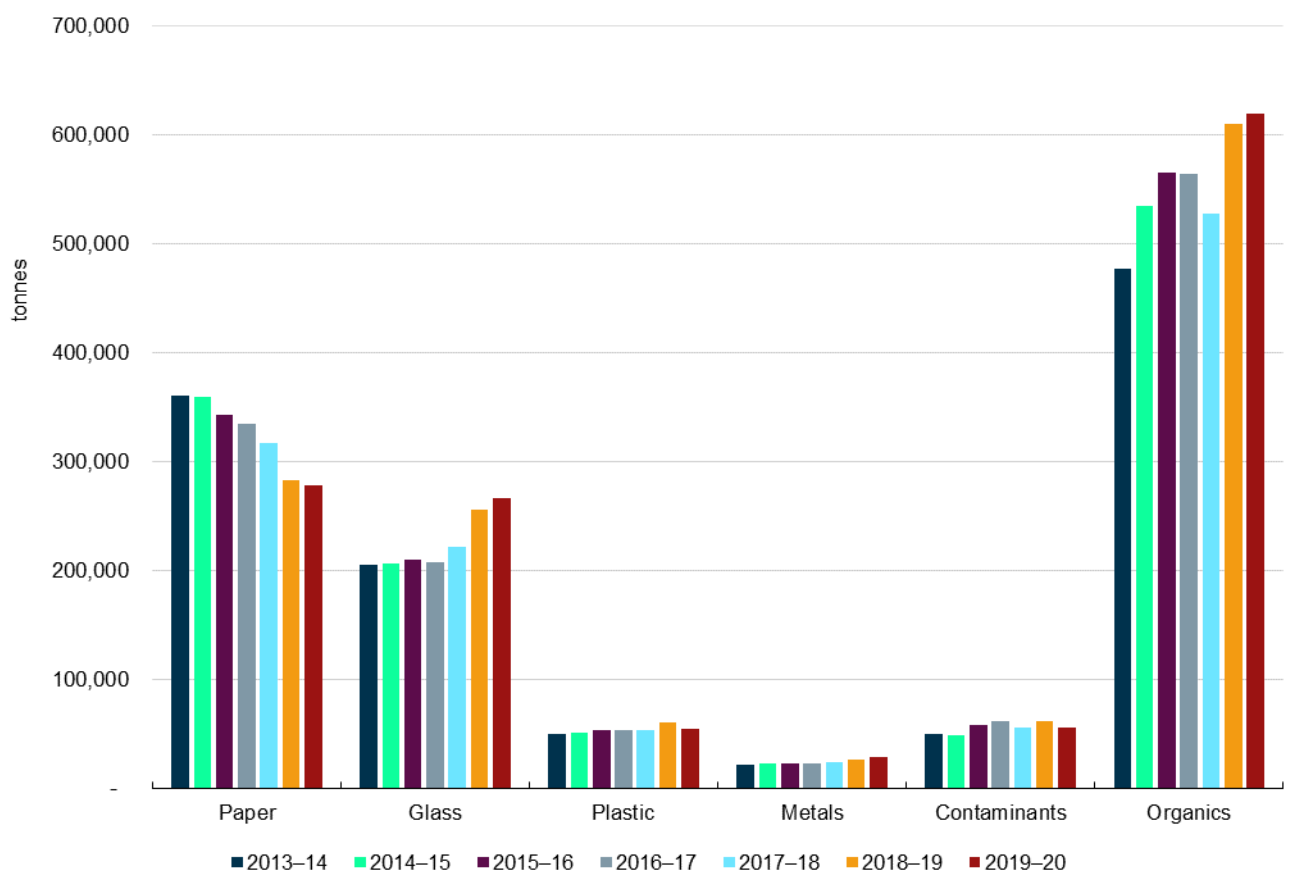


Table 12 Dry recyclables and hazardous materials, kilograms per household per week, 2013–20 (as shown in Figure 10)

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

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 Kerbside recycling collected, by material, 2013–20



3.2. Organics collected and recycled

Like dry recyclables, organics are collected through kerbside, drop-off and clean-up services. In 2019–20:

- 50 councils collected garden organics only
- 40 councils collected food and garden organics (FOGO)
- 3 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 621,616 tonnes of organics were collected at the kerbside in 2019–20. This is an increase of 2% from 2018–19. Of the 405,717 tonnes of garden organics, the 40 councils with collection systems accepting FOGO collected 215,899 tonnes in 2019–20. The regional regulated area accounted for 33.6% 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 5.22 kg of organics per household weekly, and 8.11 kg of FOGO. The regional regulated area collected 4.98 kg of organics and 8.63 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, 2019–20

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	26	7	5	12	50
Tonnes collected	267,585	95,742	25,563	16,827	405,717
Average kg/hh/wk	5.22	5.21	4.98	4.16	5.15
Average kg/ca/wk	1.97	2.14	2.39	2.12	2.03

Table 14 Organics collected at the kerbside, by region: food and garden organics (FOGO), 2019–20

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	5	3	11	21	40
Tonnes collected	38,496	51,551	72,608	53,244	215,899
Average kg/hh/wk	8.11	8.17	8.63	5.82	7.54
Average kg/ca/wk	3.19	3.41	3.96	2.69	3.31

Table 15 Organics collected at the kerbside, by region: total garden organics and FOGO, 2019–20

-	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Councils with service	31	10	16	33	90
Tonnes collected	306,080	147,293	98,171	70,071	621,616
Average kg/hh/wk	5.47	5.97	7.25	5.31	5.79
Average kg/ca/wk	2.07	2.46	3.38	2.53	2.35

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 2% (around 12,000 tonnes) from 2018–19 to 2019–20. FOGO collections increased by 2,773 tonnes in this period, with one more council offering the service.

Figure 11 Organics collected at the kerbside, by region, 2010–20

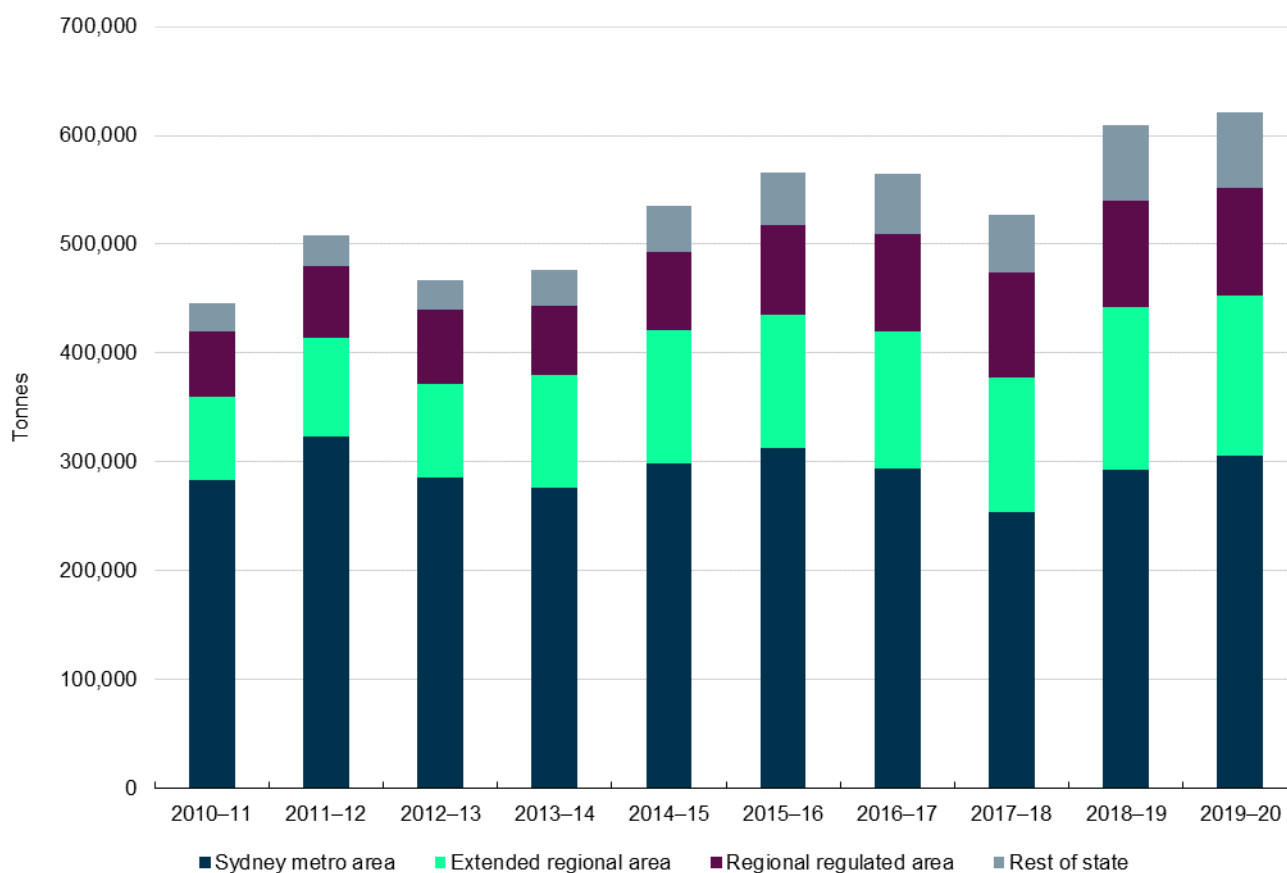


Table 16 Organics collected at the kerbside, by region, 2010–20 (as shown in Figure 11)

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

Table 16 shows that in 2019–20, 72.5% of kerbside organics were collected from the Sydney metro and extended regulated areas. A small percentage of all organic material collected in NSW (2.3%) was sent to landfill as reject or contamination.

3.3. Organics collection systems

Total organics collection increased by 34,500 tonnes or 4.4% from 2018–19 to 2019–20. This was mainly due to ‘other council organics’ increasing by 20,000 tonnes. Drop-off and clean-up organics remained about the same. Across NSW, 61.8% of households had a kerbside collection service for organics and/or FOGO.

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, probably because there are fewer kerbside collections in this area. The total collected (including ‘other council’ organics) was 813,389 tonnes.

Table 17 Organics collected in NSW, by method and region, 2019–20

Collection method	Sydney metro area (tonnes)	Extended regional area (tonnes)	Regional regulated area (tonnes)	Rest of the state (tonnes)	NSW (tonnes)
Kerbside	306,080	147,293	98,171	70,071	621,616
Drop-off	8,622	26,501	32,899	57,852	125,873
Clean-up	6,951	8,428	2,252	64	17,695
Other council	21,640	18,434	1,998	6,132	48,205
Total	343,294	200,655	135,320	134,120	813,389

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

Figure 12 Kerbside organics collected, by method, 2013–20

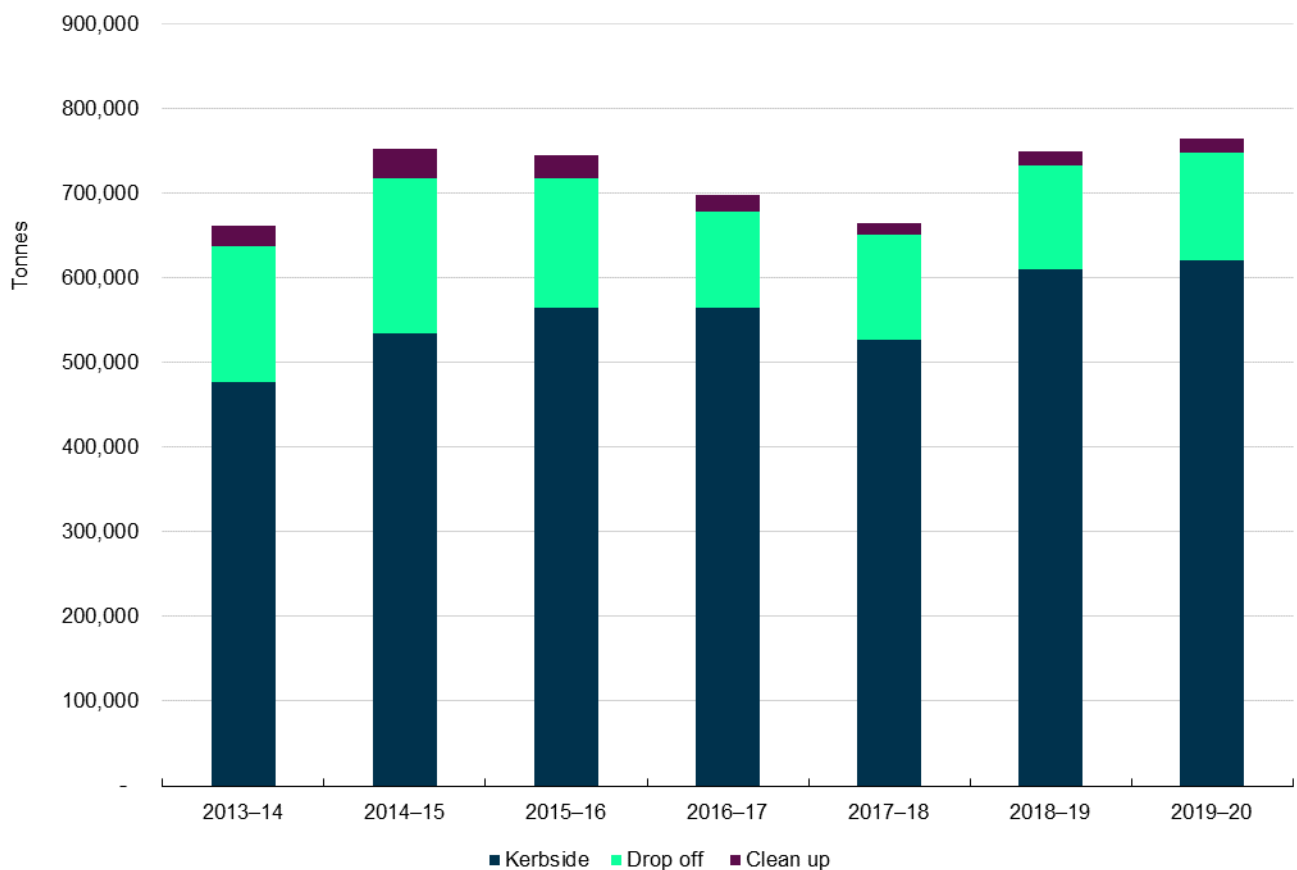
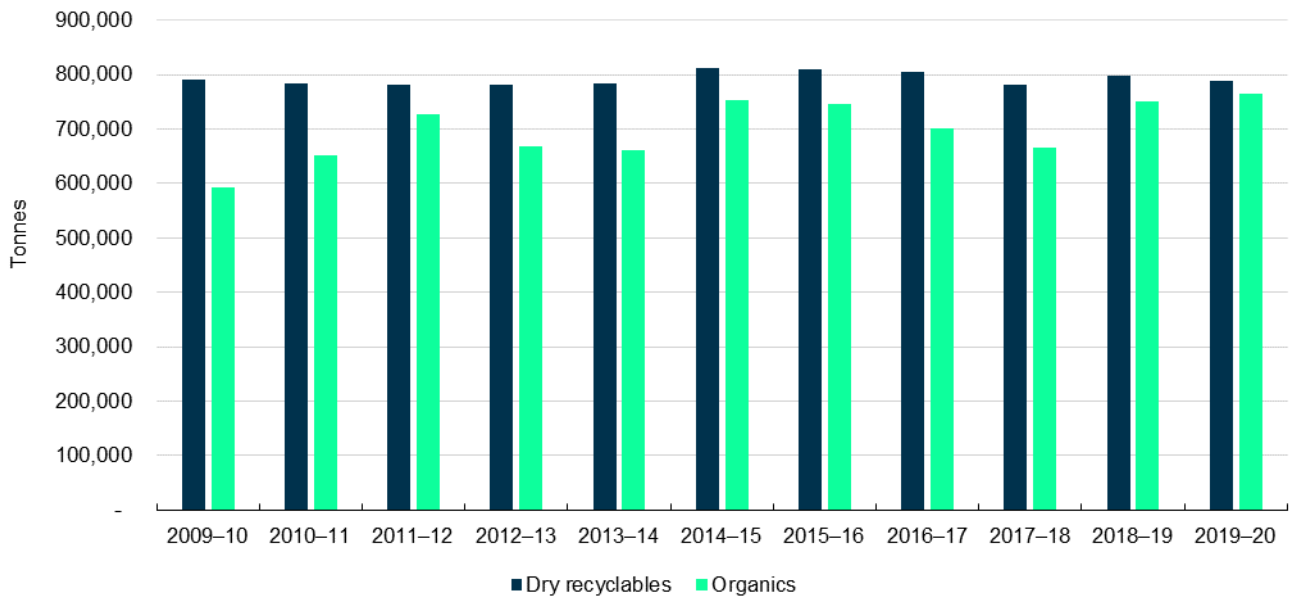


Table 18 Kerbside organics collected, by method, 2013–20 (as shown in Figure 12)

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

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, 2009–20



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 2019–20 NSW residents disposed of 2,135,037 tonnes of residual waste to landfill, comprising:

- residual waste collected at the kerbside and sent direct to landfill (1,231,255 tonnes)
- residual waste from drop-off centres (295,292 tonnes)
- residual waste from clean-up collections (171,830 tonnes)
- rejects from alternative waste treatment facilities sent to landfill (364,364 tonnes)
- rejects from dry recyclables sent to landfill from kerbside, clean-up and drop-off methods (59,763 tonnes)
- rejects from organics sent to landfill from kerbside, clean-up and drop-off methods (12,532 tonnes).

4.1. Kerbside residual waste collected and recycled

In 2019–20 the total amount of residual waste collected from the kerbside was 1,718,474 tonnes. This was an increase of 5.3% 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, 2013–20

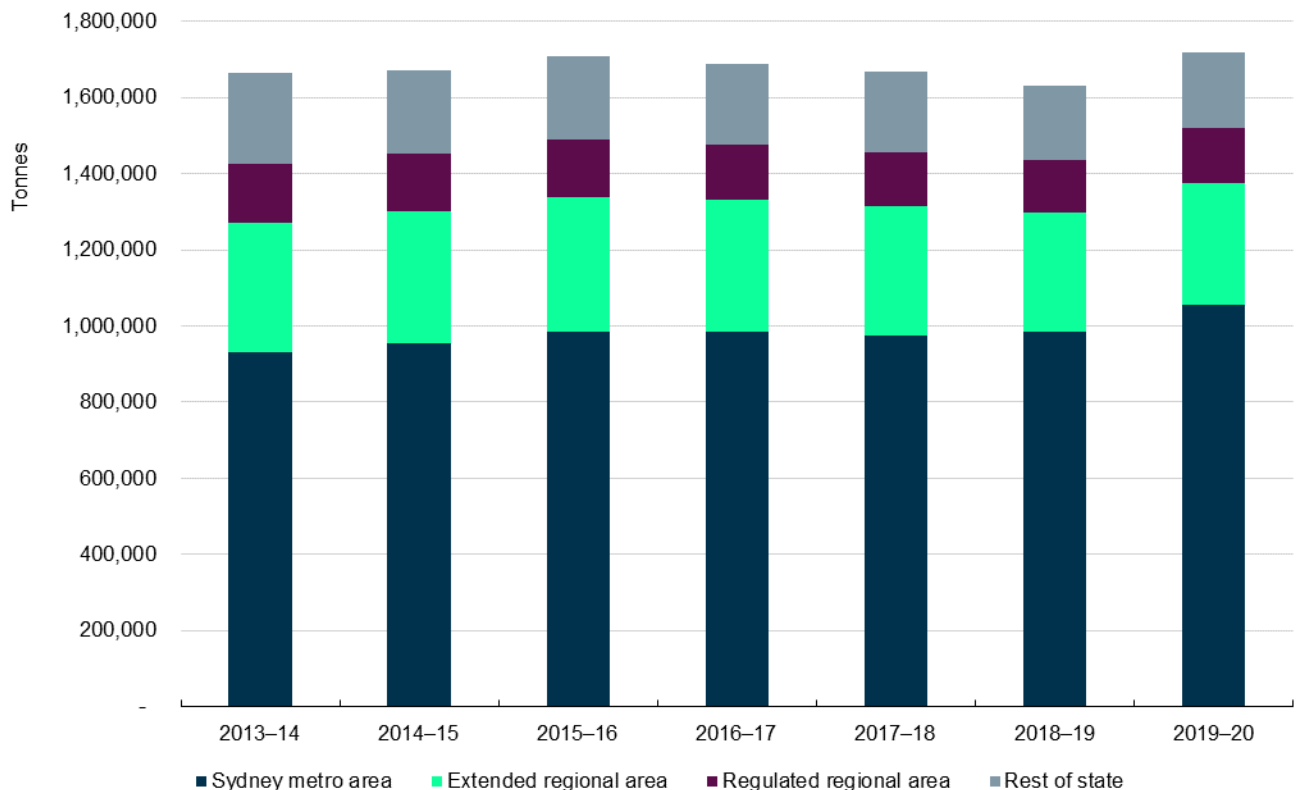


Table 19 Kerbside residual waste collected, by region, 2013–20 (as shown in Figure 14)

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

Figure 15 Average household weekly residual waste, by region, 2012–20

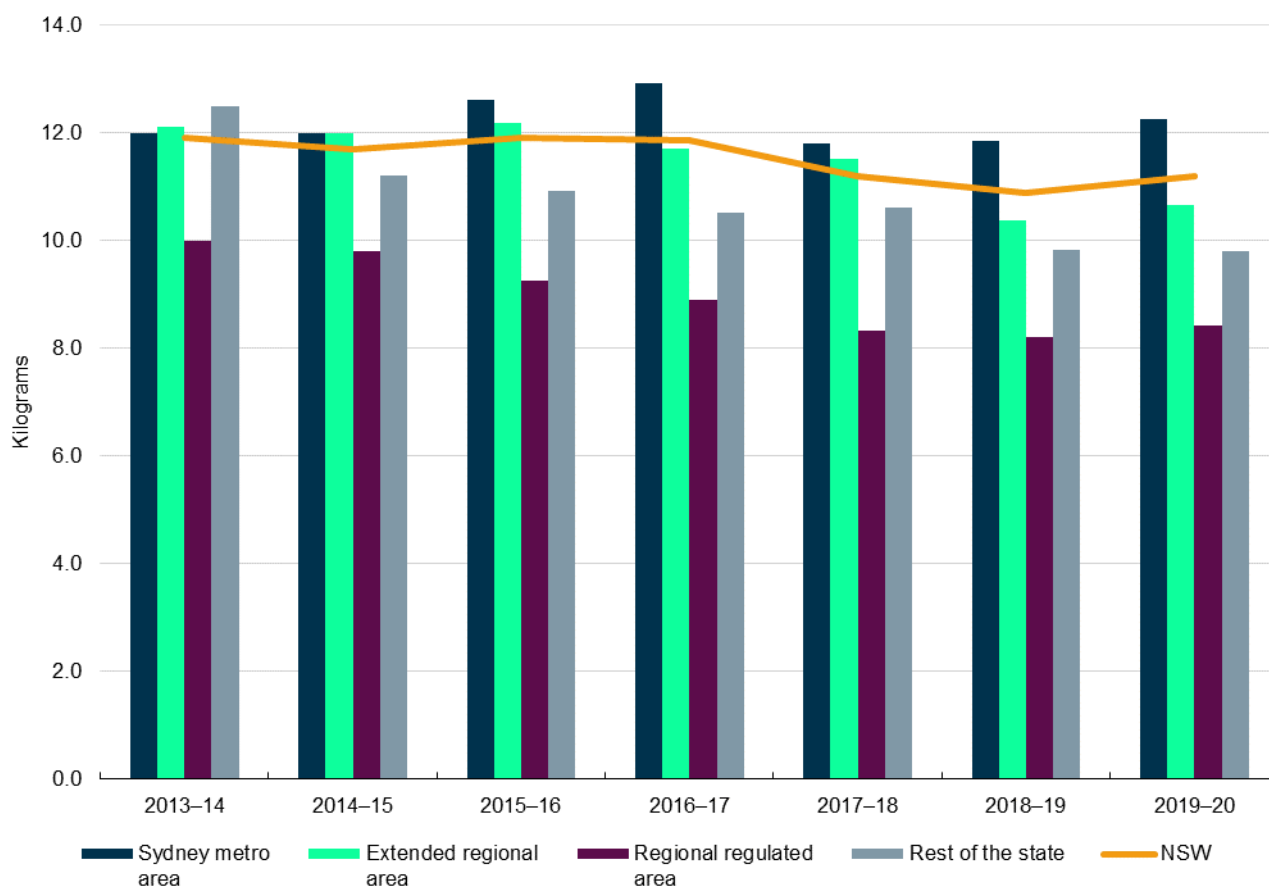
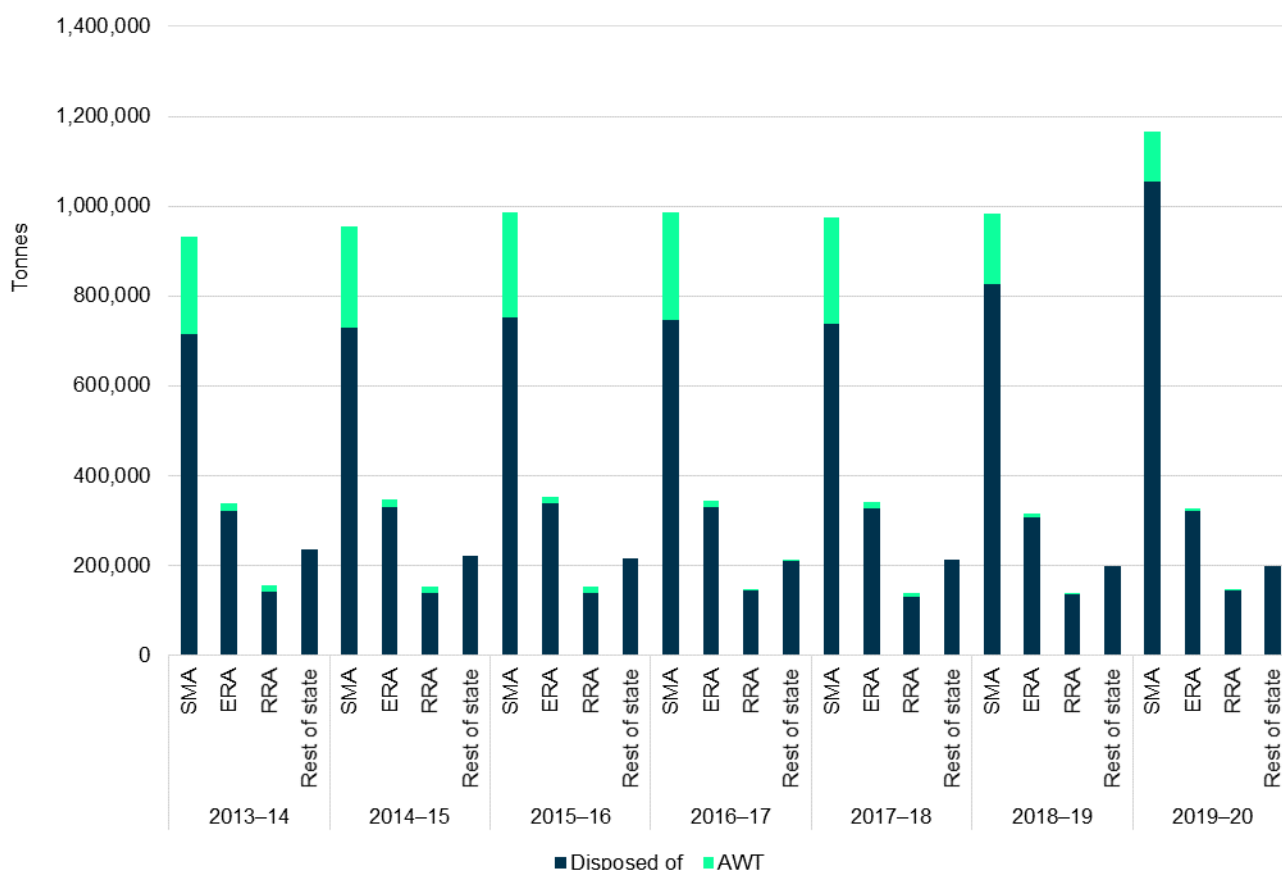


Table 20 Average household weekly residual waste, by region, 2012–20 (as shown in Figure 15)

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

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% of the total disposed of.

Figure 16 Kerbside residual waste by end destination and region, 2013–20



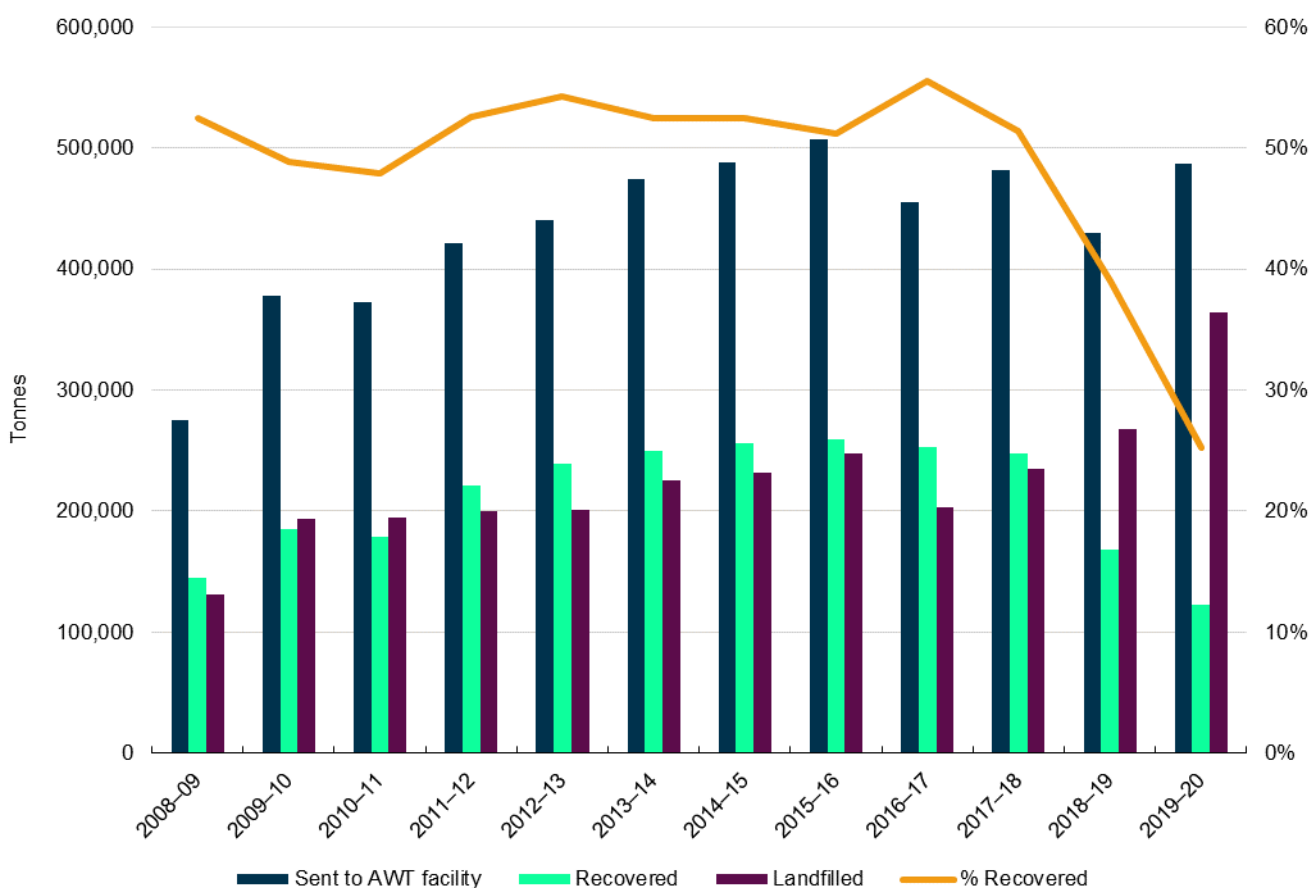
In 2019–20, each NSW household created an average of 11.19 kg of residual waste per week. Of the 128 councils with residual-waste collection services, 23 sent some or all of their kerbside residual waste to an alternative waste treatment facility. From this collected waste, alternative waste treatment facilities recovered 122,584 tonnes of material. (See Appendix tab 9 for more detail.)

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. In 2019–20, about 120,000 tonnes or 50% less was recovered than in 2017–18. This has led the overall NSW recycling rate to be 4% lower than it was two years ago. It is now around 47.6%.

Figure 17 AWT tonnes collected and recovery rate, 2008–20



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>

Table 21 AWT recovery rate, 2008–20 (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%

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 22. This table shows the average amount of waste collected kerbside each week for households with a service. The averages in Table 22 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 22 show the average yield for the council’s service offering.

Table 22 Kerbside collection system and average yield, 2019–20

Bin system	Number of LGAs (total = 128)	Average amount collected (kg/wk)	Bin services offered	Average recycled
1	15	15.07	Red	24%
2	28	15.30	Red/Yellow	40%
3	48	19.57	Red/Yellow/Green	41%
4	35	18.93	Red/Yellow/FOGO	45%
5	2	18.50	Red/Yellow/Green/FOGO	41%

All 128 NSW councils had a residual waste collection service. Kerbside waste services covered 88.3% of households: 91% in the Sydney metro area, 92% in the extended regulated area, 86% in the regional regulated area and 75% in the rest of the state.

One hundred and eleven (111) of the 128 councils provided a weekly residual waste collection service, collecting 11.19 kg per household per week on average. The remaining 17 councils collected fortnightly, yielding 7.67 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

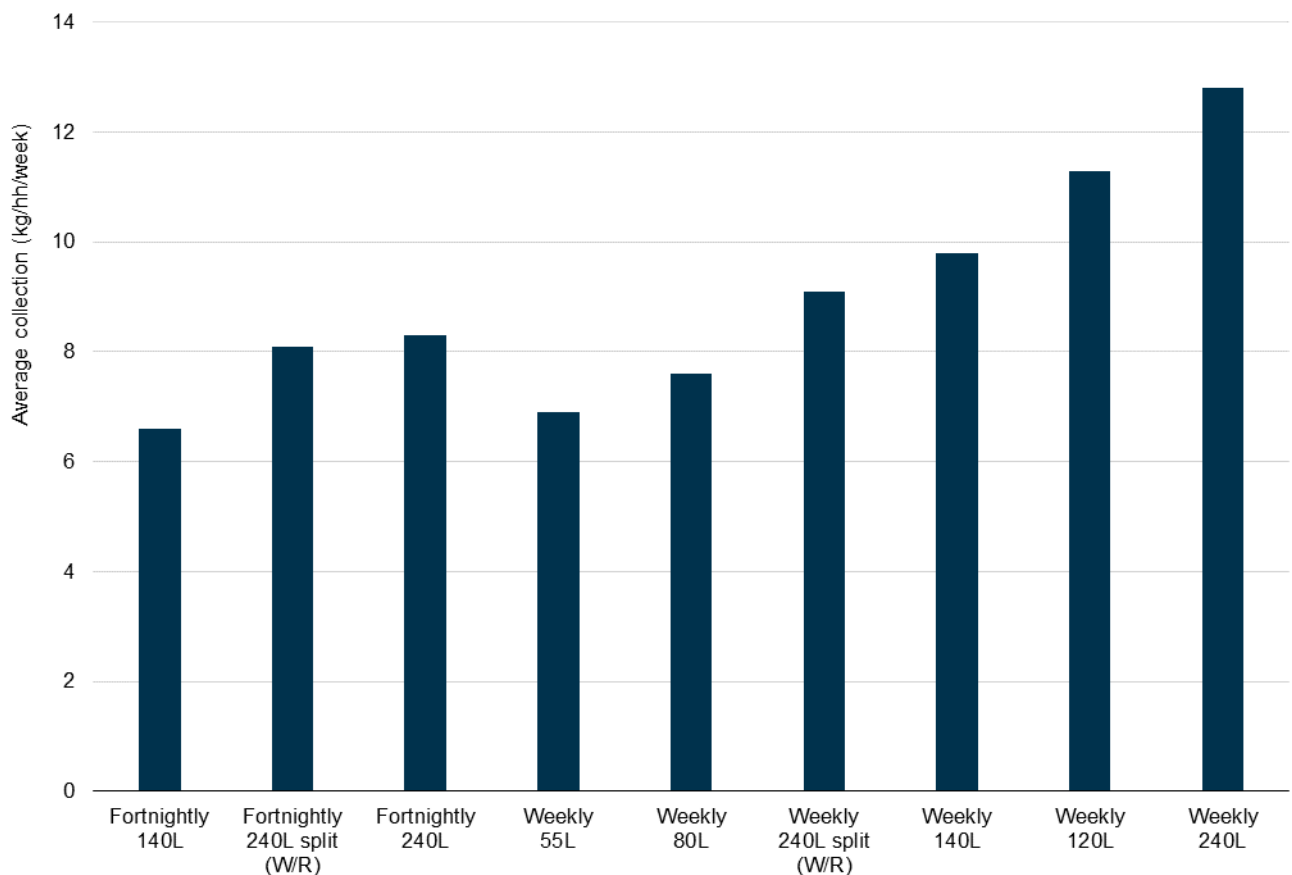


Table 23 Kerbside residual waste, bin average by system (as shown in Figure 18)

Bin system	Residual waste (kg/hh/week)
Fortnightly 140L	6.6
Fortnightly 240L split (W/R)	8.1
Fortnightly 240L	8.3
Weekly 55L	6.9
Weekly 80L	7.6
Weekly 240L split (W/R)	9.1
Weekly 140L	9.8
Weekly 120L	11.3
Weekly 240L	12.8

One hundred and twelve (112) councils provided a service for dry recyclables. Thirteen (13) had weekly services, yielding 3.95 kg per household per collection. Most of the remaining 99 services were fortnightly, yielding 3.66 kg per household per collection. Fortnightly services applied to 85.7% of households in NSW.

Figure 19 shows the 120-litre fortnightly service collecting 5.29 kg per household per week. Eleven councils had this service.

Figure 19 Kerbside dry recyclables, average by bin system

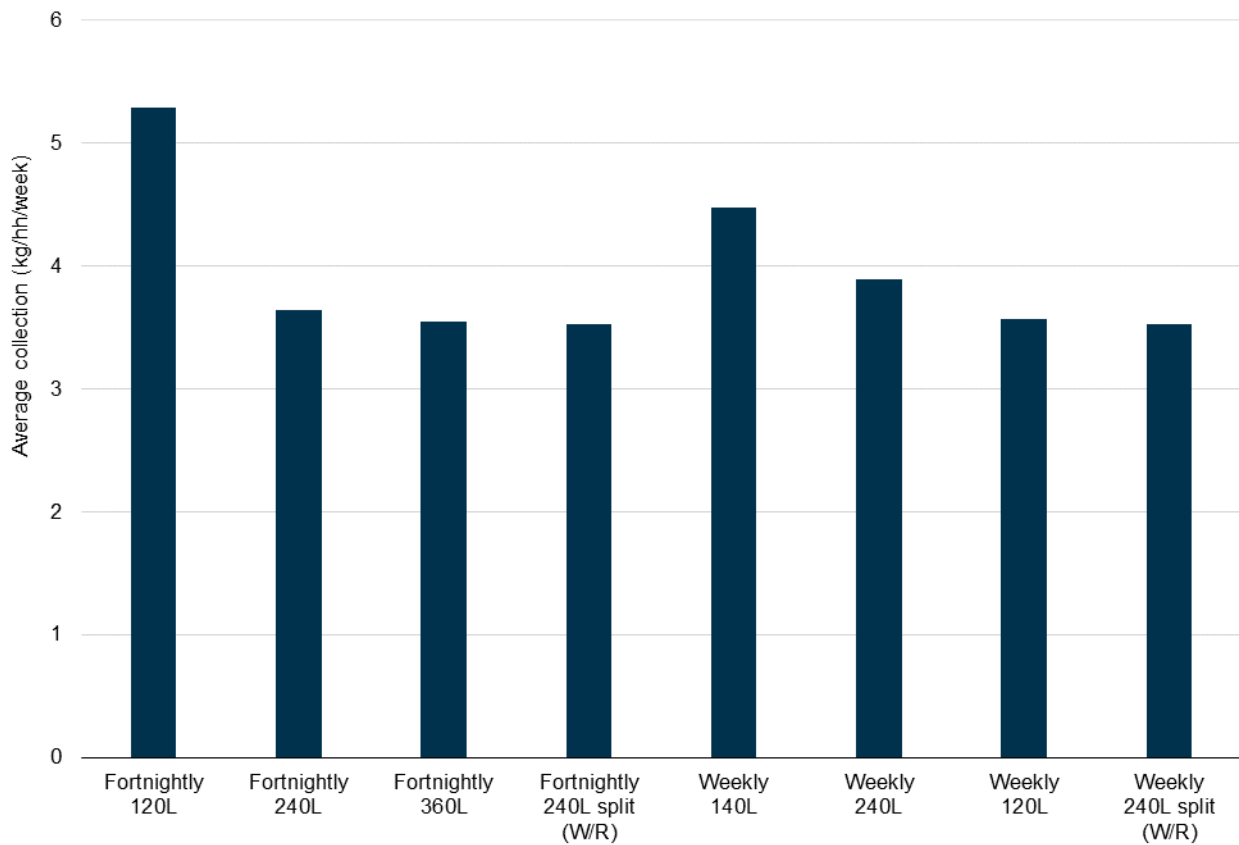


Table 24 Kerbside dry recyclables, bin average by system (as shown in Figure 19)

Bin system	Dry recyclables (kg/hh/week)
Fortnightly 120L	5.29
Fortnightly 240L	3.64
Fortnightly 360L	3.55
Fortnightly 240L split (W/R)	3.53
Weekly 140L	4.48
Weekly 240L	3.89
Weekly 120L	3.57
Weekly 240L split (W/R)	3.53

Figure 20 Kerbside organics, average collection by bin system

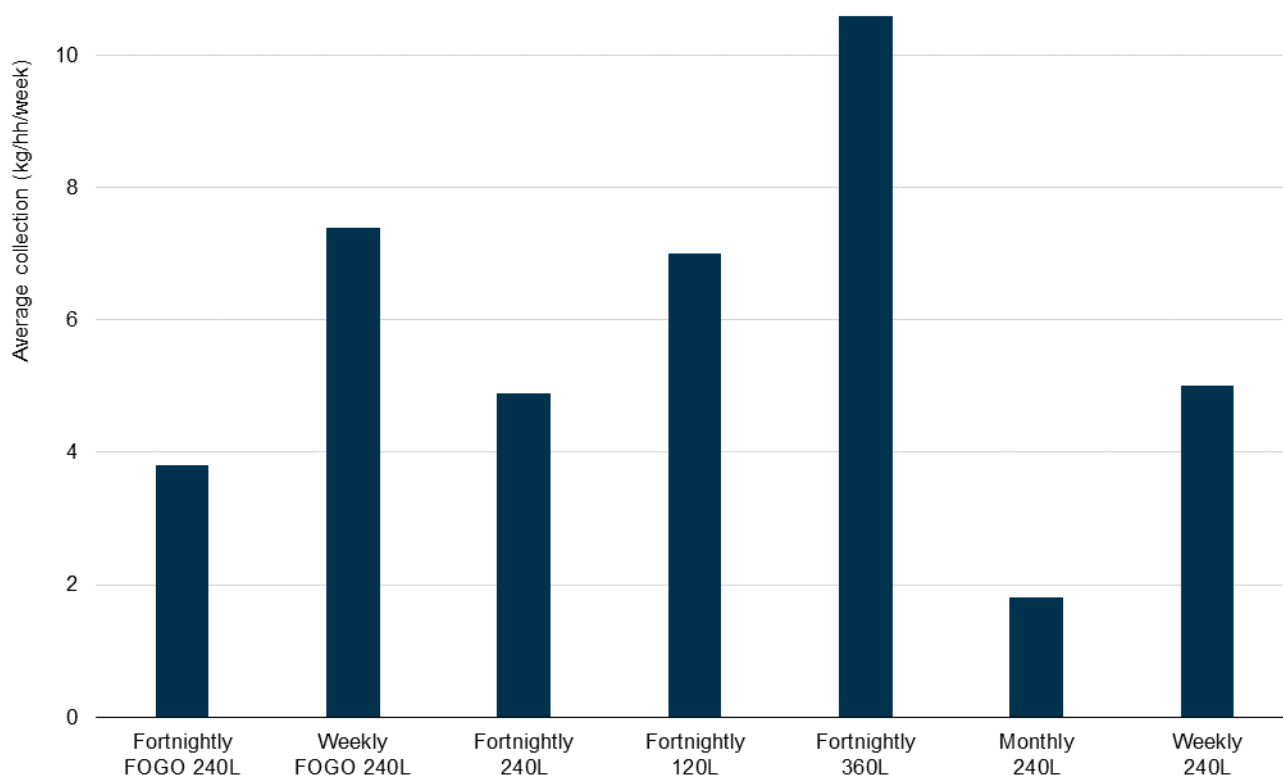


Table 25 Kerbside organics, average collection by bin system (as shown in Figure 20)

Bin system	Dry recyclables (kg/hh/week)
Fortnightly FOGO 240L	3.8
Weekly FOGO 240L	7.4
Fortnightly 240L	4.9
Fortnightly 120L	7.0
Fortnightly 360L	10.6
Monthly 240L	1.8
Weekly 240L	5.0

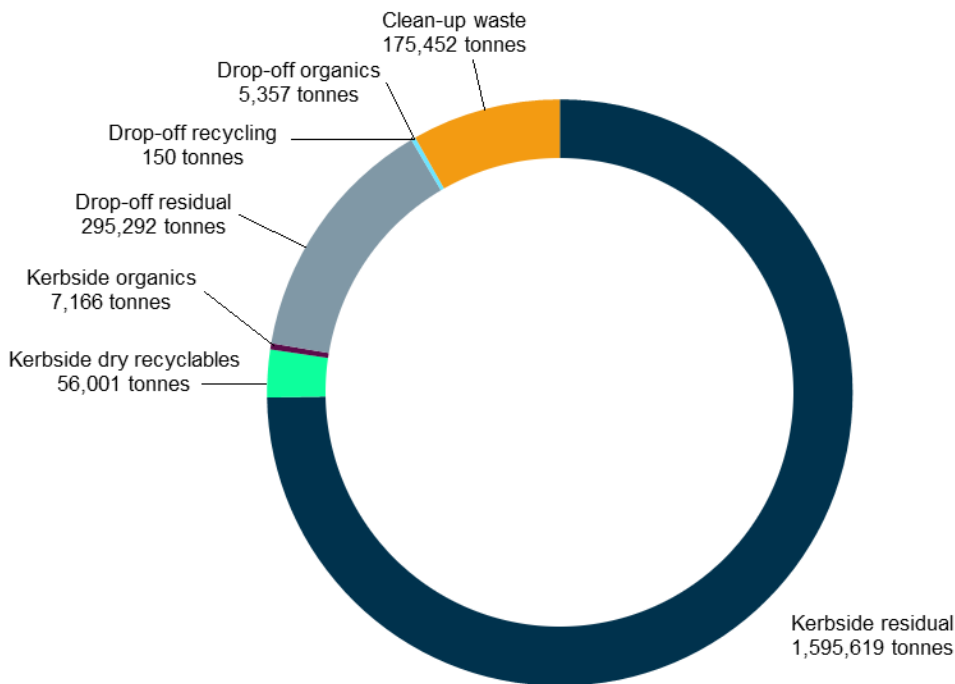
Fifty councils offered a garden organics service. Forty-six of them ran it fortnightly, yielding 5.04 kg per household per week.

Forty councils collected FOGO. Twenty-six of them provided this service weekly, collecting 7.41 kg per household per week, and 14 provided it fortnightly, collecting 3.79 kg per household per fortnight.

Figure 21 shows that the 240-litre weekly FOGO service collected an average of 7.4 kg while the 240-litre weekly garden organics service collected an average of 5.0 kg.

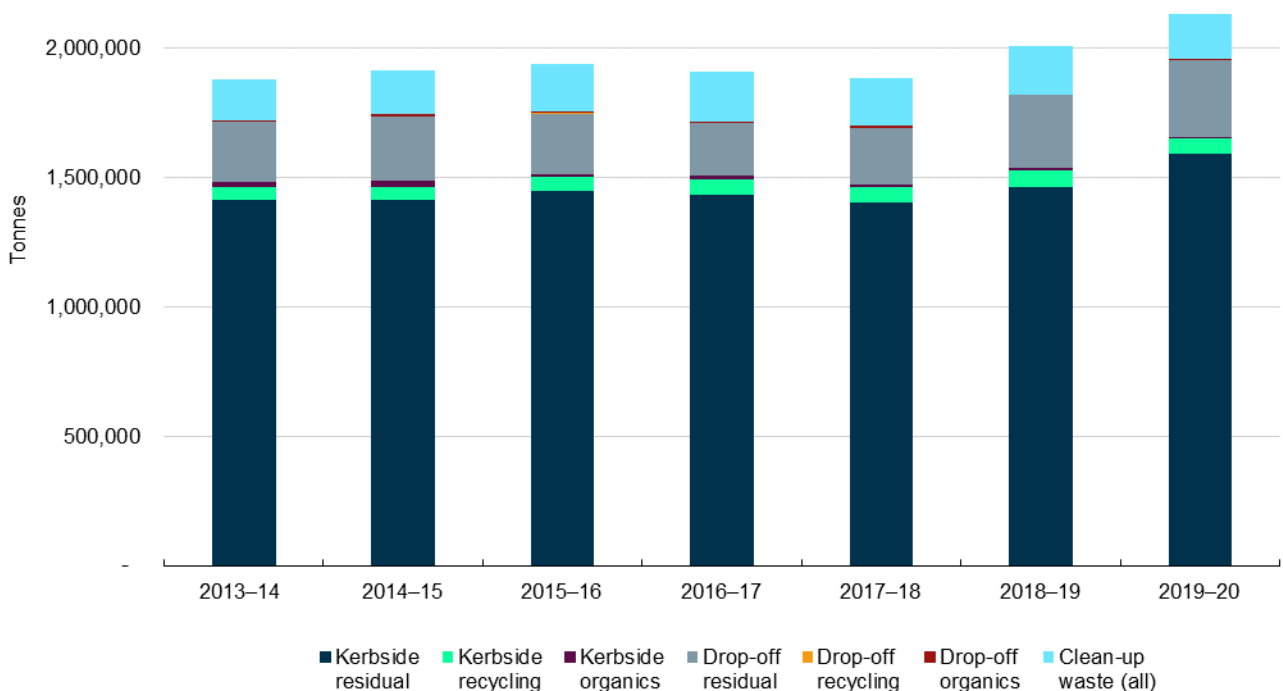
Figure 21 shows the breakdown of waste to landfill by stream (organics, recycling and residual waste, where recorded) and collection method (kerbside, drop off and clean up). Kerbside residual waste was 75% of the total waste (by weight) while material left at drop-off facilities was 14%.

Figure 21 Waste to landfill by stream and collection method, 2019–20



The amount of residual waste sent to landfill, both absolute and as a proportion of total waste, have changed little over the last few years, as Figure 22 shows. However, clean-up material sent to landfill decreased markedly in 2019–20.

Figure 22 Kerbside collected tonnes from generation



5. Clean-up services

5.1. Waste collected by council clean-up services

In 2019–20, kerbside clean-up services by NSW councils collected 230,367 tonnes of waste. This comprised:

- bulky goods and other waste not listed below – 82.4% (189,738 tonnes)
- garden organics – 8.5% (19,646 tonnes)
- metals – 5.5% (12,638).
- mattresses – 3.4% (7,764 tonnes)
- e-waste – 0.3% (581 tonnes).

Figure 23 Kerbside clean-up waste, by material type

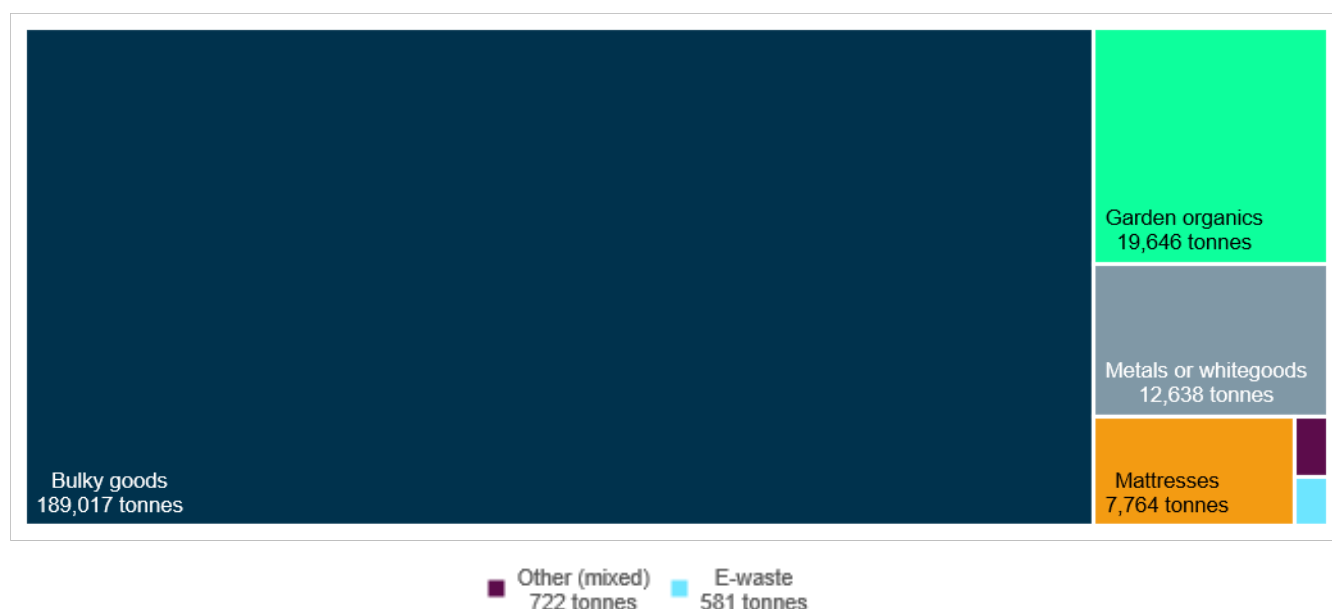


Table 26 Tonnes of source-separated clean-up materials by type, 2019–20

Material type	Collected (tonnes)	Recycled (tonnes)	Disposed of (tonnes)	% Recycled
Garden organics	19,646	19,637	9	100%
E-waste	581	575	6	99%
Metals	12,638	11,387	1,25	90%
Mattresses	7,764	5,408	2,355	70%
Bulky goods	189,017	17,191	171,826	9%
Other (mixed)	722	718	4	99%
Total	230,367	54,915	175,452	24%

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 27 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 23% of it was recycled.

Table 27 Tonnes of bulk waste clean-up materials by area, 2019–20

Region	Councils (number)	Collected (tonnes)	Recycled (tonnes)	Landfilled (tonnes)	% Recycled
Sydney metro area	28	152,768	35,299	117,469	23%
Extended regulated area	10	62,065	13,948	48,117	22%
Regional regulated area	12	11,511	4,441	7,070	39%
Rest of the state	20	4,023	1,227	2,796	31%
NSW	70	230,367	54,915	175,452	24%

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

Figure 24 shows kerbside clean-up waste collected over time. Bulky waste makes up 82% while recyclables and organics account for 9% each.

Figure 24 Kerbside clean-up waste, by stream, 2012–20

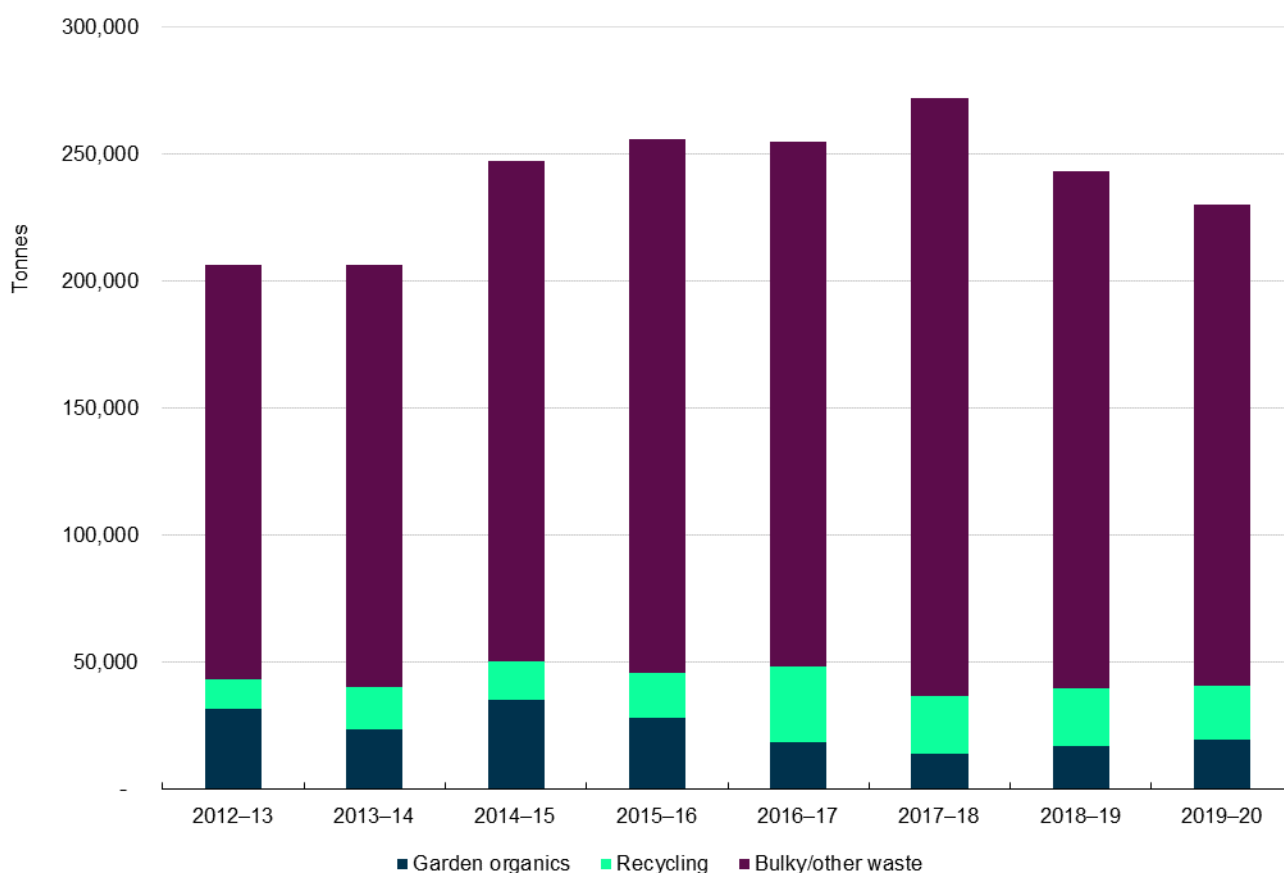
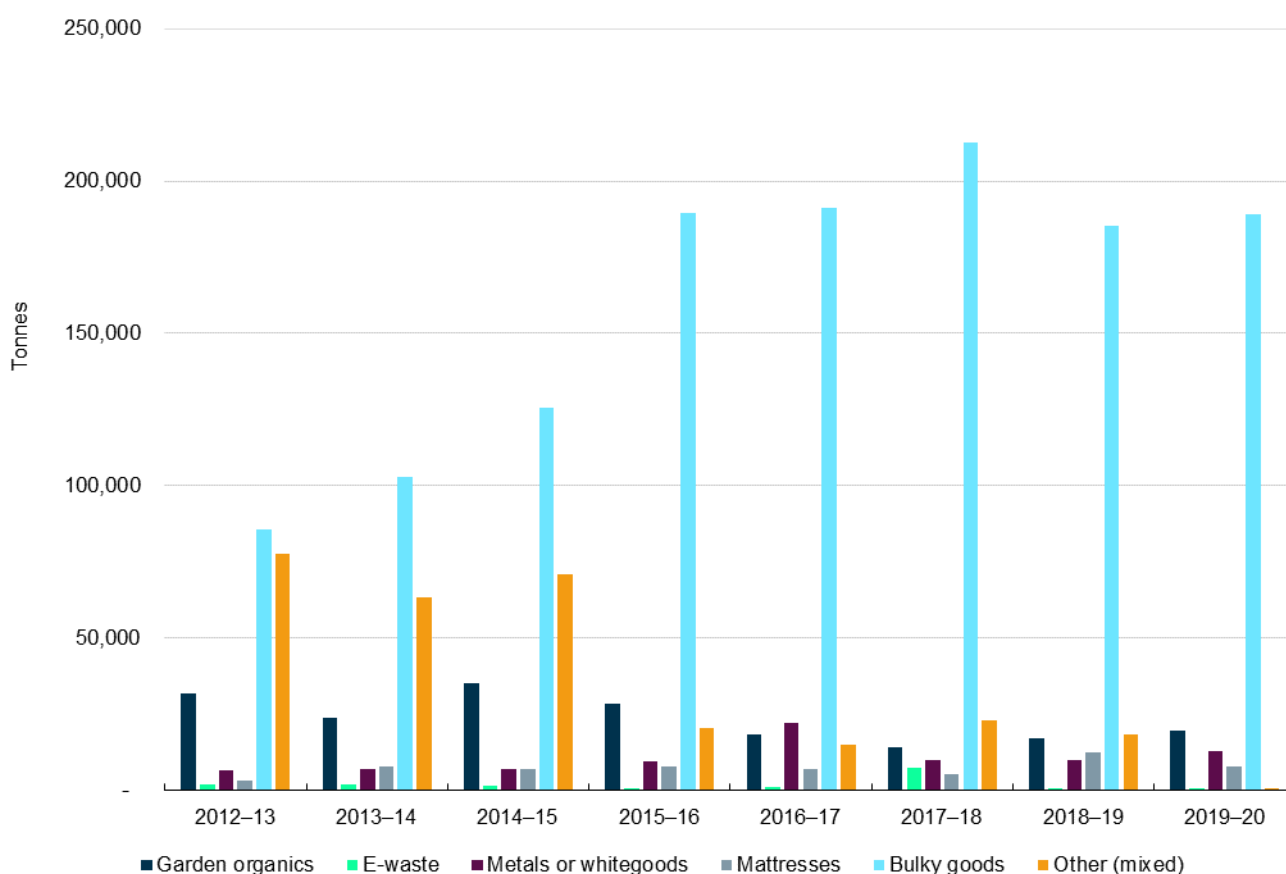


Table 28 Kerbside clean-up waste by stream, 2012–20 (as shown in Figure 24)

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

Figure 25 Kerbside clean-up waste, by material type, 2012–20



6. Drop-off facilities

6.1. Waste dropped off at a facility by residents

Across NSW, 110 of the total 128 council areas offered some sort of drop-off facility for residents. Figure 26 shows that in 2019–20 these facilities received 550,368 tonnes of material, comprising:

- 332,618 tonnes of residual waste
- 125,873 tonnes of organics
- 91,876 of dry recyclables (up from 73,943 tonnes in 2018–19).

Figure 26 Drop-off material received, by waste stream, 2013–20

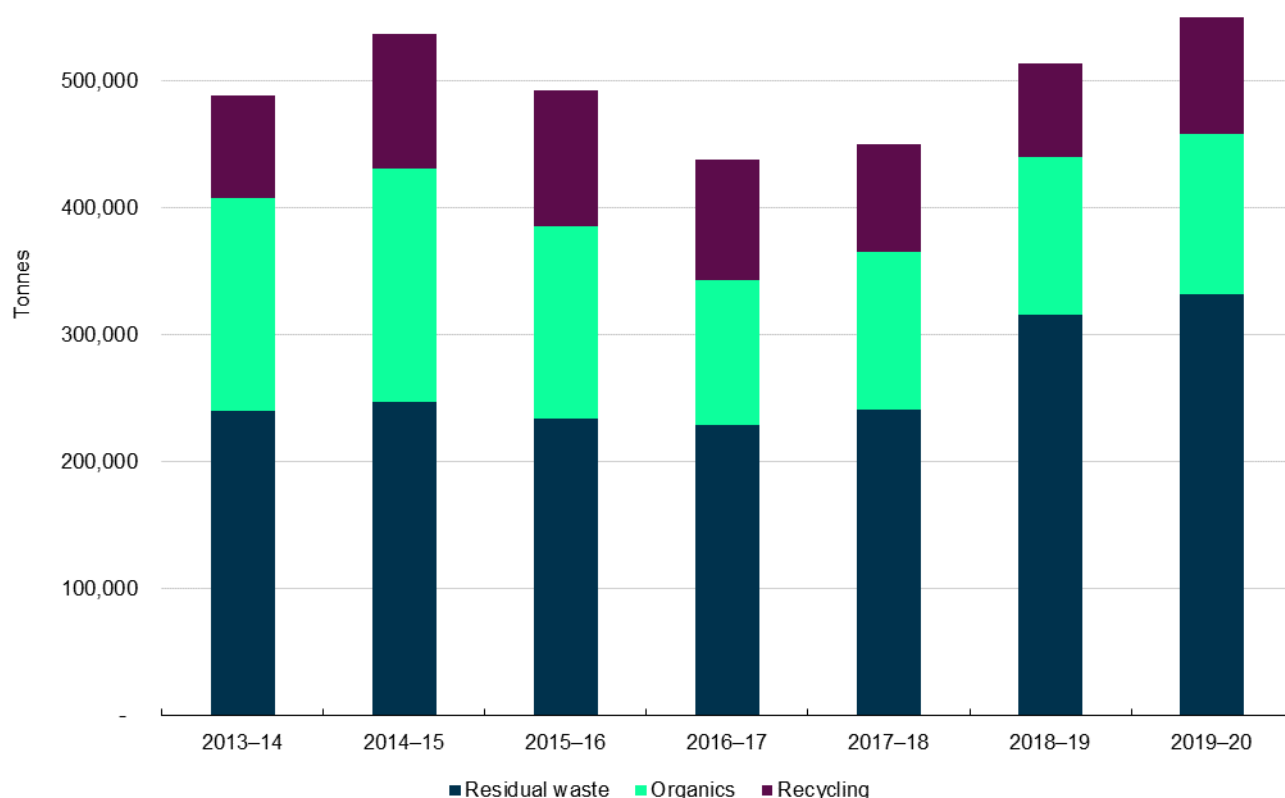


Table 29 Drop-off material received, by waste stream, 2013–20 (as shown in Figure 26)

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

NSW drop-off facilities received 7% more material in 2019–20 than in 2018–19. The split between residual waste, recycling and organics has remained consistent over the past four years.

Note: In last year's report (the *NSW Local Government Waste and Resource Recovery Data Report 2018–19*), drop-off waste was reported to be 244,566 tonnes. However, some councils had not provided data for this category. The sum of the missing amounts now been estimated to be 71,838 tonnes. This brings the new total for drop-off waste to 316,404 tonnes. The new total has been used in this report in graphs, comparisons between years, totals given in Appendix 6 and recycling rates.

In 2019–20 a total of 45% of material from drop-off facilities was recycled.

Table 30 Drop-off service provisions by region, 2019–20

Region	Councils (number)	Collected (tonnes)	Recycled (tonnes)	Landfilled (tonnes)	% Recycled
Sydney metro area	23	77,482	29,508	47,974	38%
Extended regulated area	11	77,535	34,105	41,992	44%
Regional regulated area	16	116,487	68,464	48,023	59%
Rest of the state	60	278,864	115,240	163,625	41%
NSW	110	550,368	247,317	301,614	45%

Figure 27 shows the material by waste stream over time. This is the total tonnes accepted at a facility from residents.

Figure 27 Drop-off waste received, by stream, 2007–20

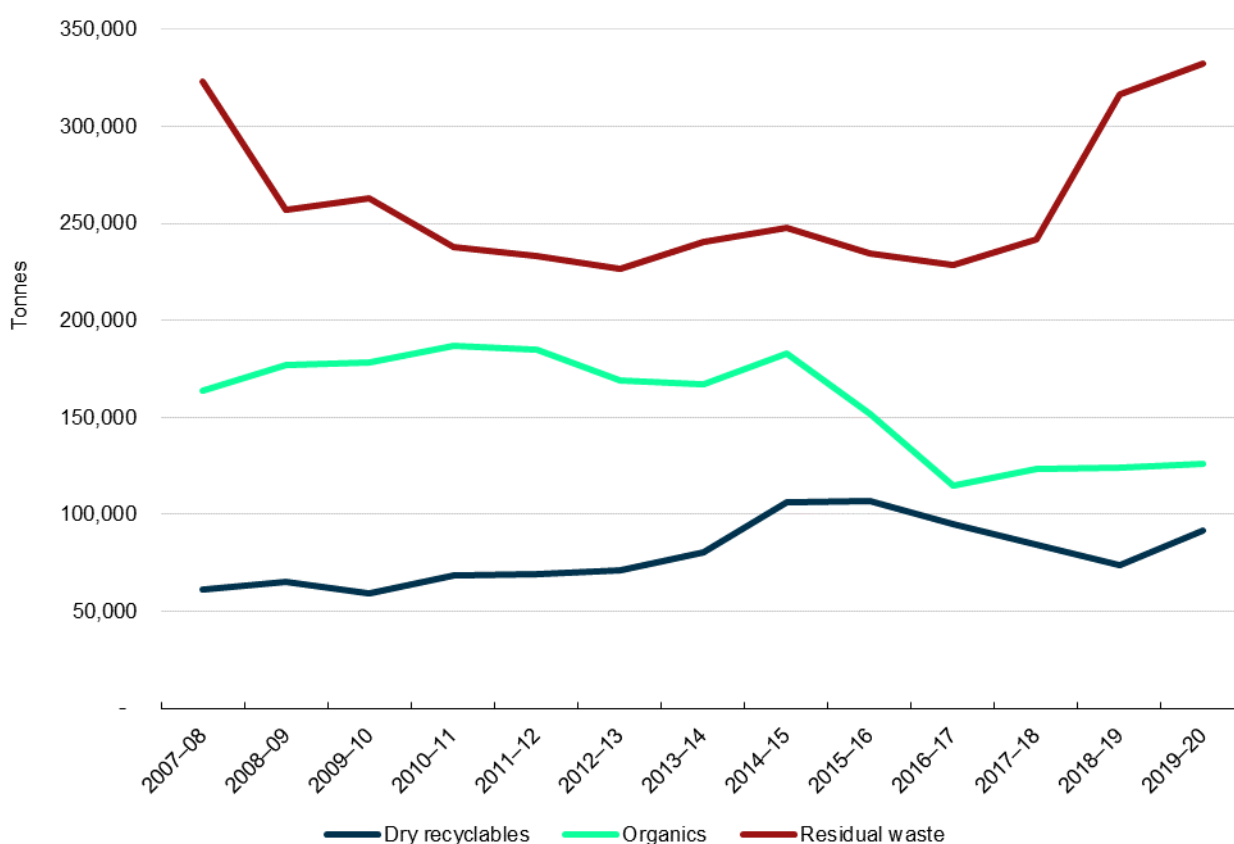


Figure 28 shows the fate of all three streams in amounts collected, recycled and disposed of. The trendline shows the percentage recycled.

Figure 28 Drop-off amounts and percentage recovered, 2007–20

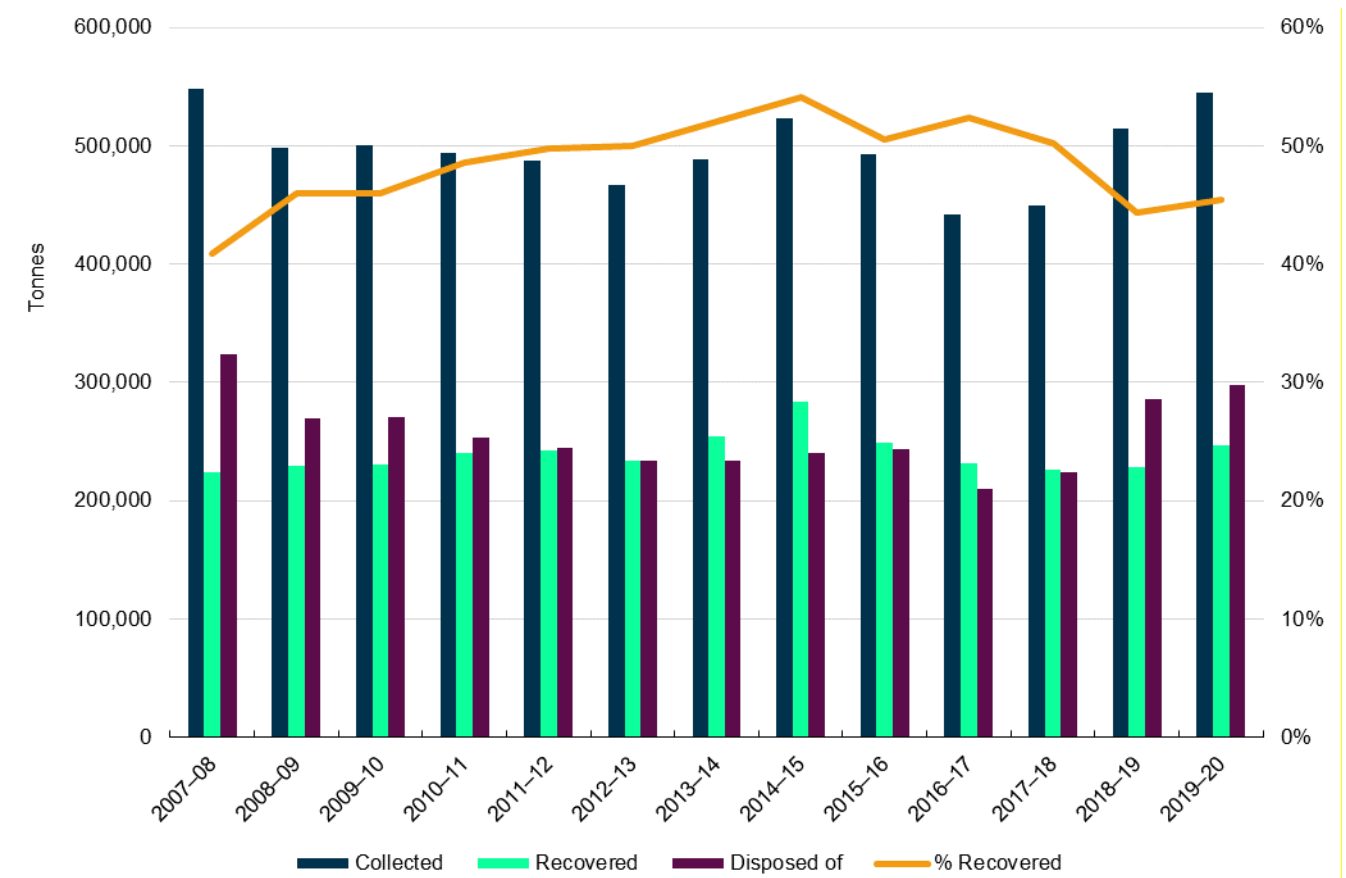


Table 31 Drop-off waste, percentage recovered, 2007–20 (as shown in Figure 28)

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%

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 $(\text{total recycled} \div \text{total collected}) \times 100$.

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.