

NSW Local Government Waste and Resource Recovery Data Report 2018–19

as reported by councils

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1. Overview

A snapshot of local and statewide waste management

The *NSW Local Government Waste and Resource Recovery Data Report 2018–19* is based on voluntary survey responses from 128 NSW local councils¹.

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.

Sections 1 to 4 of the report focus on the quantity and types of waste created, recycled and disposed. Sections 5 and 6 look at waste services.

This report includes only domestic waste and recyclables, which are the main components of the municipal solid waste stream. This report does not include data on commercial and industrial (C&I) or construction and demolition (C&D) waste. All per person averages are based on 30 June 2019 population figures from the Australian Bureau of Statistics (ABS). All data is based on council responses to an annual survey. Sections in the report have been written from where the material has been generated, and where councils report on a service. For the NSW container deposit scheme Return and Earn, (CDS), the data is taken from collection site from that local government area (LGA), as reported by the scheme operator.

Part of a larger environmental program

This report falls under 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 includes six long-term targets:

1.  avoiding and reducing the rate of waste generation per person
2.  increasing recycling rates to 70% for municipal solid waste, 70% for C&I and 80% for C&D
3.  increasing waste diverted from landfill to 75%
4.  better managing problem wastes, establishing 86 drop-off facilities or services across NSW
5.  reducing the number of litter items by 40% by 2017, compared with 2011–12
6.  reducing the incidence of illegal dumping by 30% by 2017, compared with 2010–11

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 Note: Data contained within this report for Murrumbidgee and Narrandera Councils has been taken from 2017-18 survey responses.

Focus on recycling will help achieve targets

For local councils to meet NSW WaRR strategy targets, it is vital to 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.



Avoid and reduce waste generation – the average kg per capita and kg per household waste was reduced in 2018–19 compared to the previous two years.

In 2018–19, households generated 3.66 million tonnes of domestic waste, collecting 2.08 million tonnes of residual waste 1.58 million tonnes of recycling and organics including containers from Return and Earn.

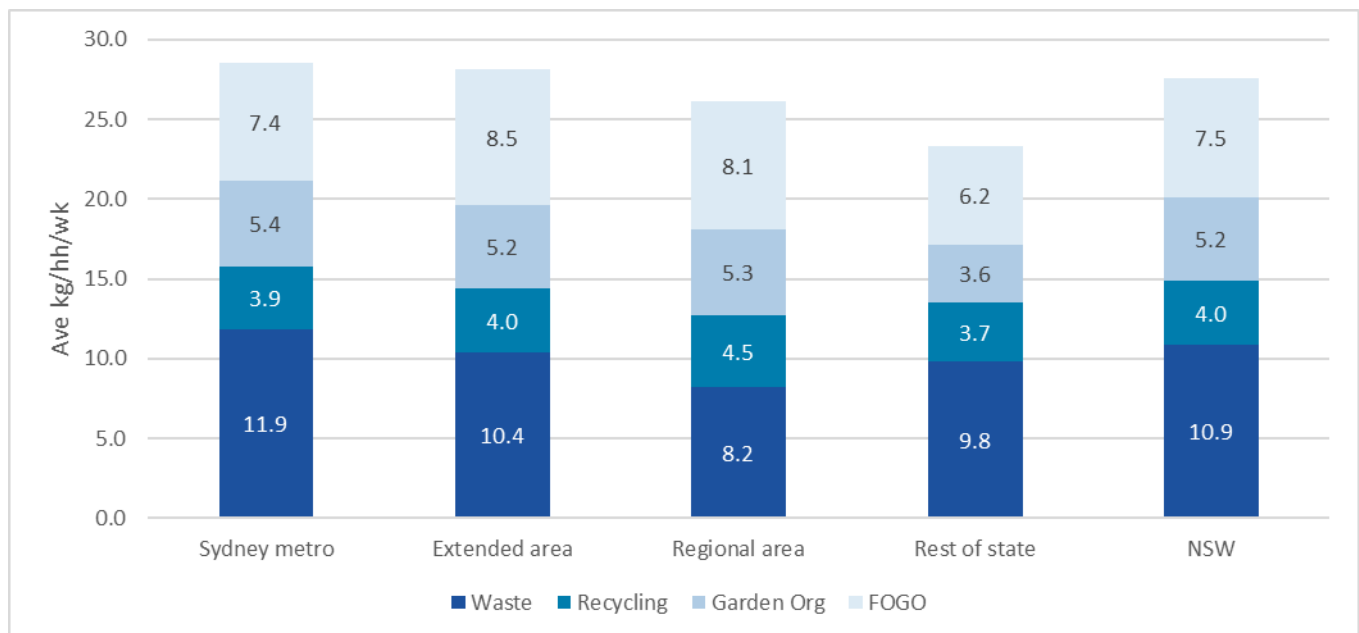
The Sydney metro area generated 1.84 million tonnes or 50.3% of the NSW total. The extended regional area generated 811,000 tonnes or 22.2% of the NSW total. The regional regulated area generated 456,000 tonnes, 12.5% of the NSW total and the rest of the state area generated 550,000 tonnes or 15% of the NSW total.

Although there was an increase of 2.1% in total tonnes generated from 2017–18, domestic waste generated decreased by 1.3%. The average residual waste generated per household 643.6kg/yr from 682.7kg/yr and per capita 260.5kg/yr from 268.2kg/yr in 2017–18.

Regular kerbside collections for waste, recycling and organics accounted for 2.82 million tonnes or 77.2% of total generation. Council clean up service collected 243,000 tonnes or 6.6%, drop-off facilities received 442,000 tonnes or 12.1%. The remainder consists of container deposit scheme 3.2%, other council organics 0.8% and households hazardous materials collections 0.1%.

Graph 1 shows the average kilograms per household per week collected for households with a service.

Graph 1: Average kilogram per household collected per week by area 2018–19



* Average per household per week based on separate services.

* (Note: individual services do not add up to total for an average household per week)

The average NSW household generated a total of 21.75kg material per week, or 8.8kg per person. Different council areas may not offer all collection services. Every week, the average household with a service puts out 4kg of recyclables, 5.2kg of garden organics, 7.5kg of food and garden organics and 10.9kg of residual waste at the kerbside for collection.

In 2018–19, there were 3,232,559 NSW households with 2,884,668 or 89.2% receiving a council kerbside waste service. By comparison, in 2017–18, there were 3,087,985 NSW households with

2,862,556 or 92.7% with a council waste service. The number of households with a service also differs per year due to private contracted services, particularly in multi unit dwellings, which Council are unable to provide data on or the amount of waste collected for those households. This may lead to an uneven view of data comparing totals across historical years. However, comparing households with a service shows a decrease from 11.2kg/hh/wk to 10.9kg/hh/wk (-2.8%) and decrease 0.78% per capita.



Increase recycling

In 2018–19, around 1.72 million tonnes were recycled overall from domestic kerbside, clean-up and drop-off services. This was comprised of 732,000 tonnes of recyclables; 762,000 tonnes of organics, 60,000 tonnes of drop-off and clean-up waste recycled and 168,000 tonnes of material recovered via alternate waste treatment.

Kerbside dry recycling material collected data changed with the introduction of the NSW container deposit scheme (CDS) which started in December 2017. From data provided by the scheme operator and an average conversion factor applied to the numbers of containers collected per material, the EPA has determined that 115,676 tonnes has been collected and recycled through the CDS system in 2018–19.

The kerbside yellow lid recycling service collected 581,233 tonnes. The additional CDS amount gives a total of 696,909 tonnes, resulting in 25,197 tonnes more collected than 2017–18 and 17,850 from 2016–17 for comparative purposes.

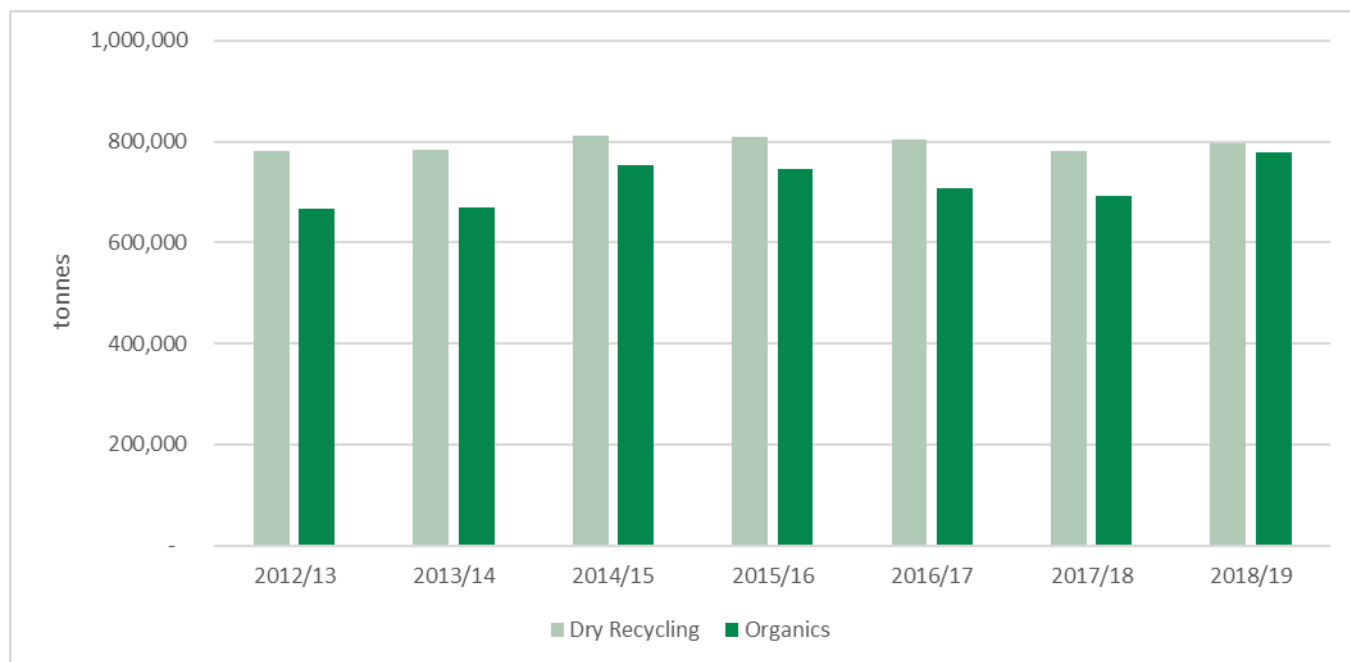
In 2018–19, the amount of kerbside organics collected was 609,662 tonnes increasing again after a decrease in 2016–17 (527,287 tonnes), due to a lack of rainfall and therefore less organics. In 2018–19, the kerbside collected 396,536 tonnes of garden organics and 213,126 tonnes of food and garden organics, 123,789 drop-off, 16,996 clean-up and 28,430 collected from other council organics collections. In 2018–19, the total organics collected was 778,878 tonnes, which was an increase of 12.5% from 2017–18 and 10% from 2016–17.

In addition, 25 councils sent 429,898 tonnes of kerbside residual waste to an alternative waste treatment facility where 167,880 tonnes, or an average of 39%, was recycled. A reduction of approximately 11% in the amount of waste sent to a facility and 12% in the amount of waste recycled by a facility have been observed since 26 October 2018, when 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. Resource recovery rates have fallen for councils impacted by this regulatory decision as residual waste, that may still have been processed into MWOO, was instead disposed to landfill.

Combined clean-up and drop-off waste services (waste, recycling and organics) recycled 288,890 tonnes, along with 28,430 tonnes of organics recycled by other council services and 3,500 tonnes of hazardous recyclables like batteries, globes and cartridges.

Graph 2 below shows that the total recycling and organics collected, including kerbside, clean-up and drop-off, has remained relatively consistent for the past seven years.

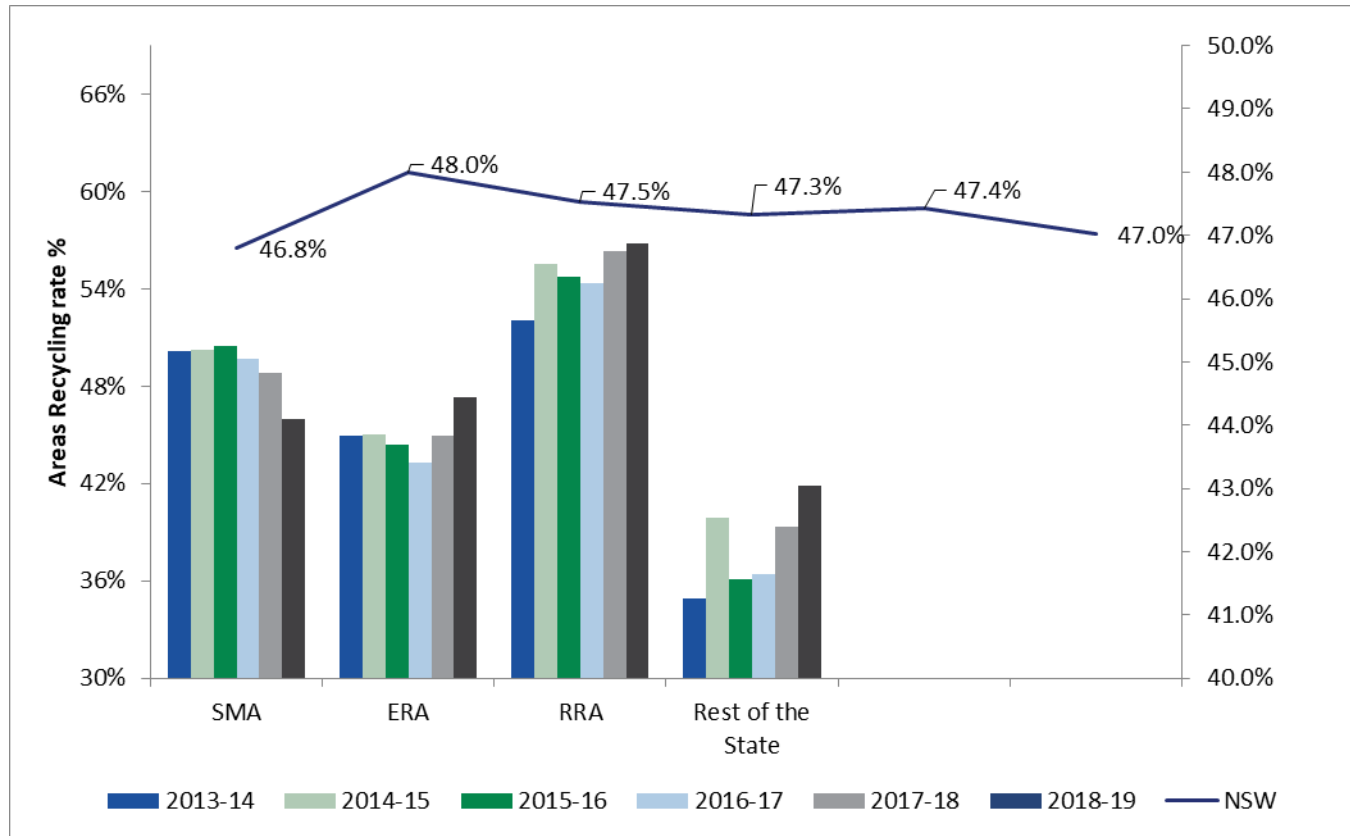
Graph 2: Total dry recycling and organics tonnes collected by year 2012–19 (tonnes)



Divert more waste from landfill

In 2018–19, 47.0% of domestic waste created in NSW was diverted from landfill. This is in line with the previous few years.

Graph 3: Areas’ recycling rate by year and NSW average 2013–19



The Sydney metropolitan area generated 1.84 million tonnes of kerbside waste, of which 847,000 (46%) was diverted from landfill. This is a decrease from 48.8% in 2017–18 and is mainly do to the alternative

waste treatment decision. For comparative purposes, had it been status quo, the NSW recycling rate could have been 49.5%.

Across NSW, 1.94 million tonnes went to landfill. Most of this was residual kerbside waste, accounting for 1.47 million tonnes. A further 62,000 tonnes were contaminants from dry recyclables and 11,500 tonnes from organics collections sent as rejects from the processing facilities. In addition, 214,000 tonnes from drop-off materials and 185,000 tonnes from kerbside bulky waste clean-up collections was disposed of.

Note: Figures have been rounded to the nearest whole number in this overview.

2. Total domestic waste

2.1. Generated and recycled



The average domestic waste generated per household each week is 21.75kg. This is a decrease from 22.3kg in 2017–18.

In 2018–19, NSW created 3.66 million tonnes of domestic waste. This is an increase of 74,000 tonnes from the previous year, but over the five-year period the waste generation rate is relatively static, with increases in organics collections. 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 21.75kg per household per week or 8.8kg per person, based on the total number of households and people in NSW. Waste generated per household includes regular kerbside collections, clean-up and resident drop-off materials.

From the 3.66 million tonnes of domestic waste generated, 1.94 million tonnes of residual waste was disposed to landfill. This is an increase of about 58,500 tonnes (3%) from 2017–18. A total of 1.71 million tonnes of the domestic waste generated was recycled, an increase of 15,300 tonnes from 2017–18. The total domestic tonnes generated and recycling figures includes 115,676 tonnes of containers collected by the container deposit scheme, Return and Earn.



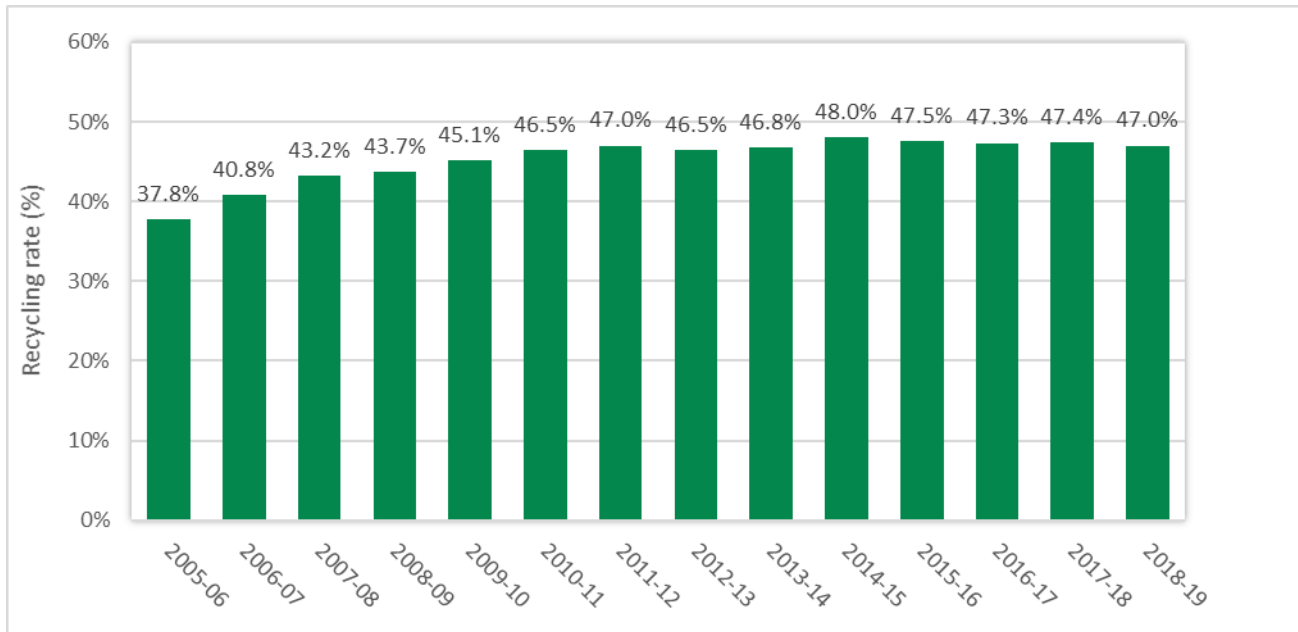
The total domestic recycling rate remained virtually static from 47.4% in 2017–18 to 47% in 2018–19.

In 2018–19, NSW residents recycled 47.0% of domestic waste: 1.71 of 3.66 million tonnes. This figure includes:

- kerbside recycling (519,500 tonnes)
- CDS recycling (115,500 tonnes)
- kerbside organics (598,000 tonnes)
- alternative waste treatment (168,000 tonnes)
- clean-up services (61,000 tonnes)
- drop-off facilities (228,000 tonnes)
- other council organics (26,500 tonnes)

Graph 4 shows the recycling rates in NSW over time. Although the increases have been consistent overall, over the past four years they have been marginal. Recycling rates have remained relatively consistent around 47%.

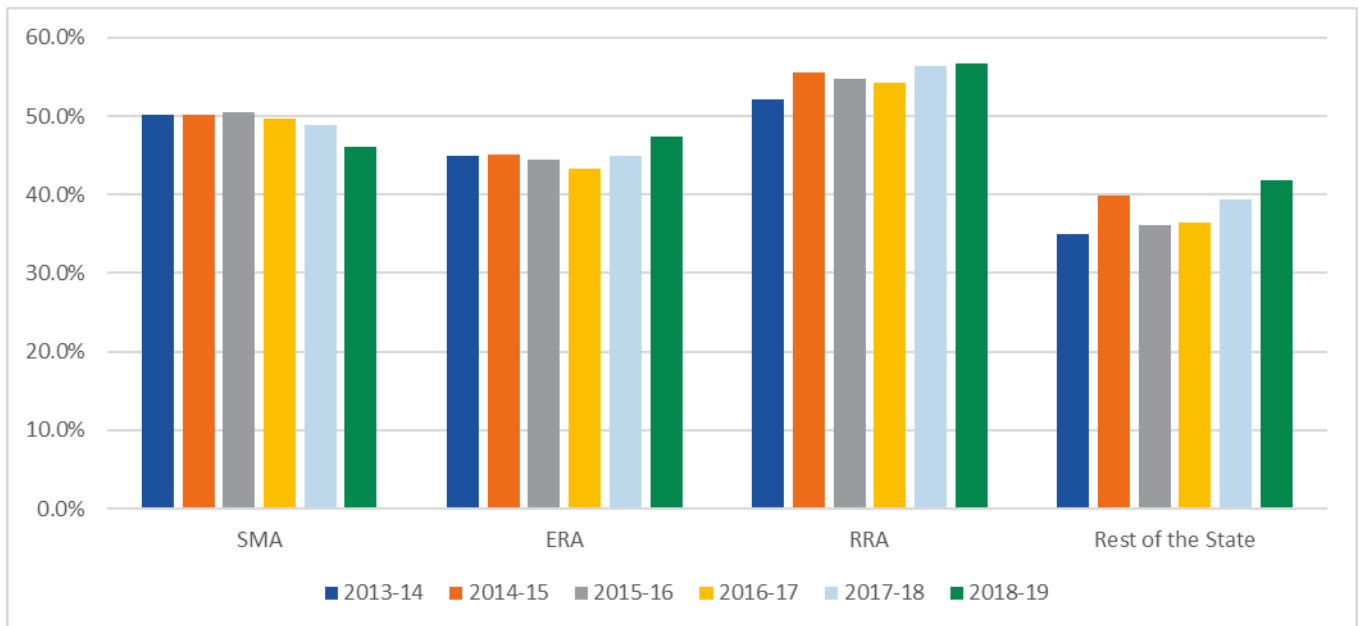
Graph 4: NSW recycling rates for domestic waste between 2005–19



The kerbside recycling rate has slightly decreased due to

- about 92,000 tonnes less recycling through the alternative waste treatment system
- more waste and recycling disposed of
- less drop-off recycling and more kerbside recycling disposed of.

Graph 5: Recycling rates of domestic waste across NSW areas for 2013–19



Graph 5 shows the recycling rates by NSW areas. The highest levels are reported in the regional regulated area (RRA) at 56.8%, an increase from 56.3% in 2017–18, and higher than any other region. The rest of the state at 41.9% was an increase from 39.3% in 2017–18. The extended regional area (ERA) also had an increase to 47.3% in 2018–19 from 45.0% in 2017–18 and the Sydney metropolitan area (SMA) decreased from 48.8% in 2017–18 to 46.0% in 2018–19. The majority of alternative waste treatment waste comes from the SMA region.



1.71 million tonnes were recycled from kerbside collections, drop-off facilities, clean-up services and alternative waste treatment facilities in 2018–19.

Table 1 shows the weight in tonnes of material collected by waste stream, the amount recycled and the remaining amount 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 10.6%. For kerbside organics it was 1.8% and FOGO 2.2%. For residual waste, 10.6% was recycled from alternative waste treatment processing, which down from 15.6% in 2017–18. The remaining amount was disposed of in landfill.

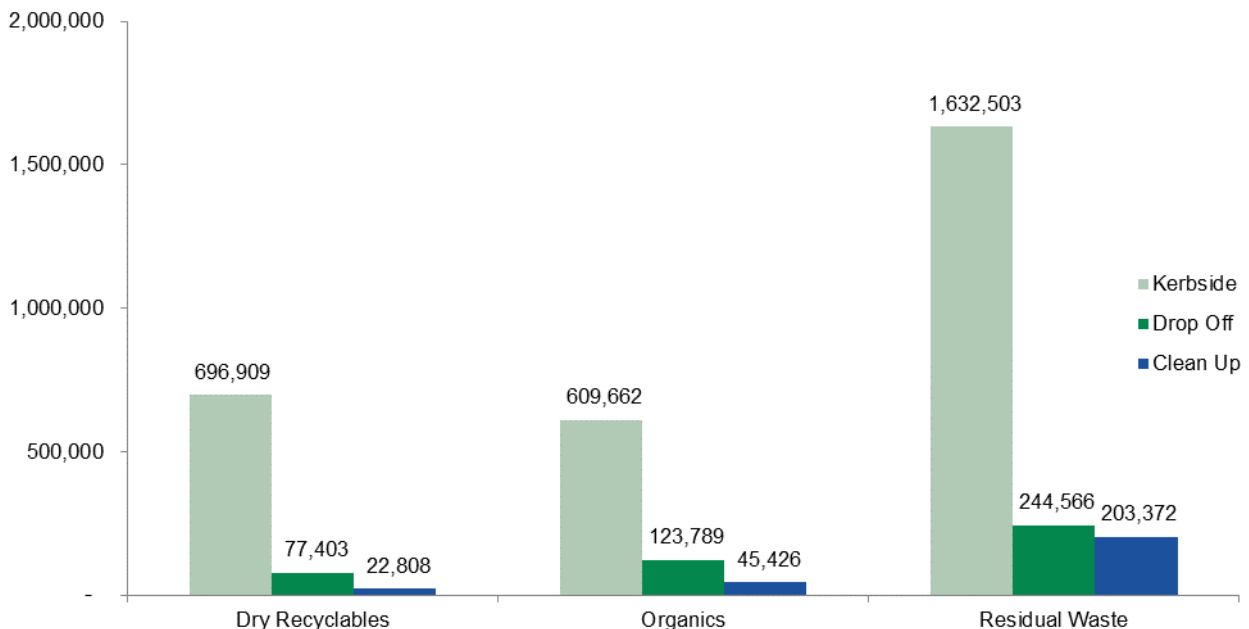
Table 1: Total domestic generation and fate by waste stream 2018–19 (tonnes)

Waste streams	Collected	Recovered	Disposed	Recycling rate (%)	total gen kg/hh/wk	total gen kg/ca/wk
Recyclables	797,120	732,012	65,108	91.8%	4.7	1.9
Organics	778,878	759,562	19,311	97.5%	4.6	1.9
Residual waste	2,080,441	227,808	1,852,633	10.9%	12.4	5.0
Total generation	3,656,438	1,719,381	1,937,052	47.0%	21.8	8.8

Note: Due to rounding, the total is not the same as the sum of the component figures. Kg/hh/wk and kg/ca/wk are based on total households and capita regardless of service.

Graph 6 shows the total domestic waste in tonnes collected by waste stream and collection method. Kerbside collection is the predominant area for generation; which is why programs and education are focusing around this stream.

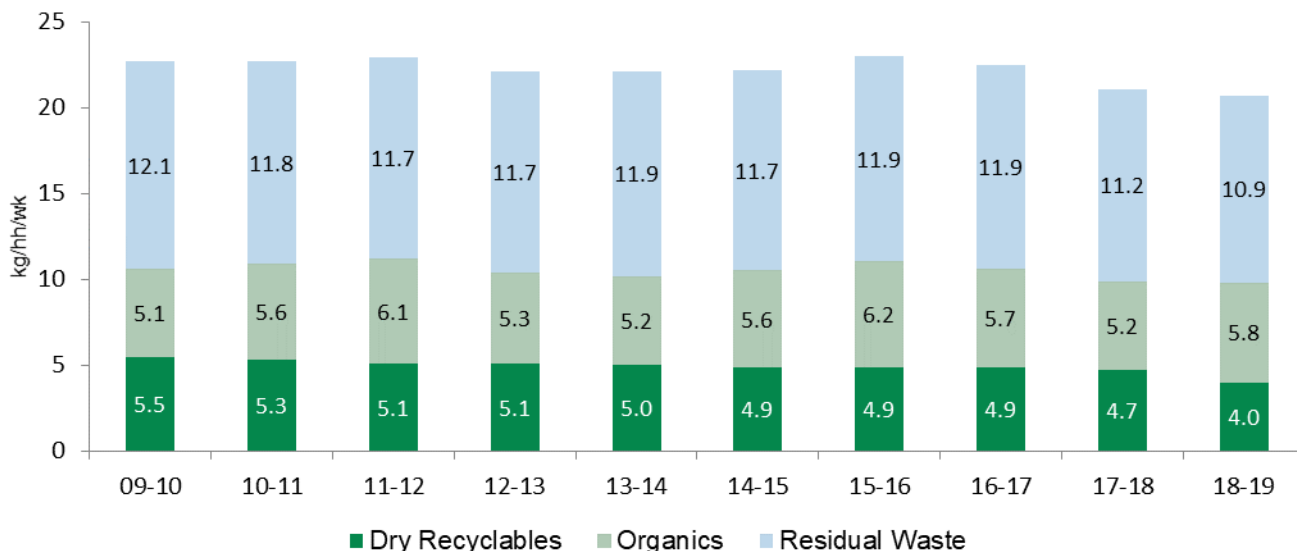
Graph 6: Domestic waste collected by waste stream and collection method 2018–19 (tonnes)



Note: Due to rounding, the total is not the same as the sum of the component figures for Residual Waste when compared to Table 1. Includes CDS in dry recyclables.

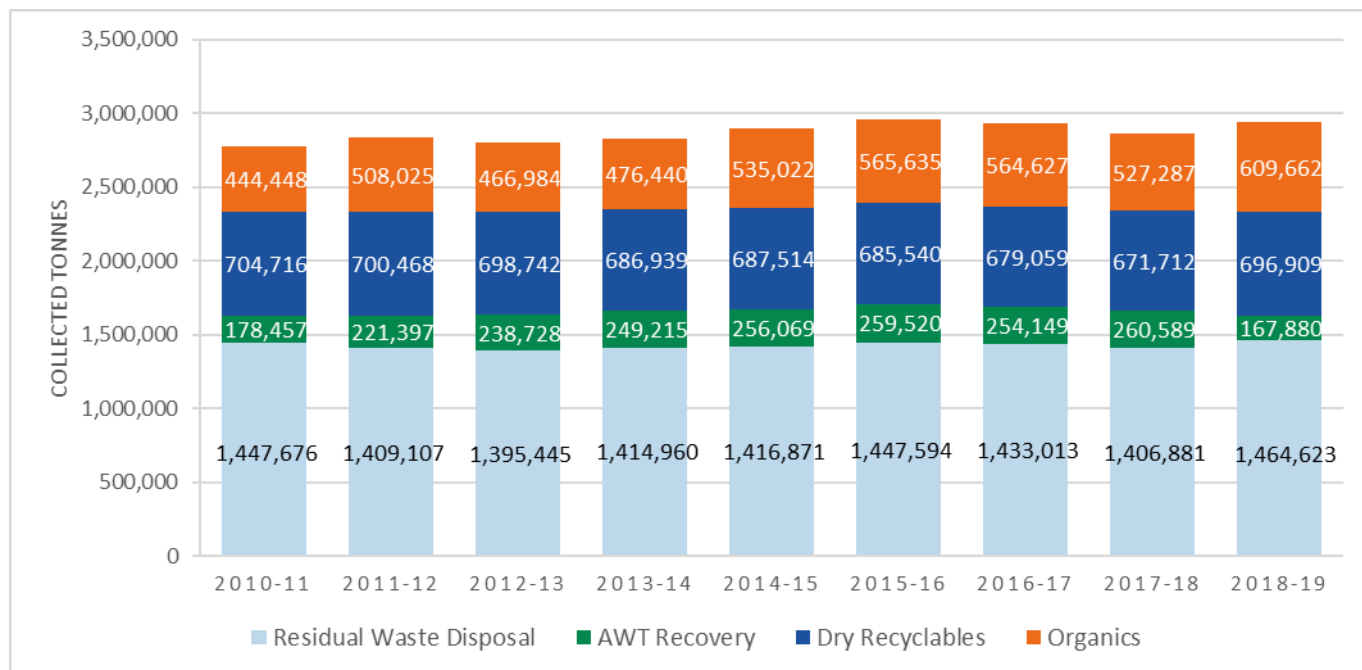
Graph 7 shows the amount of domestic waste collected at the kerbside between 2009 and 2019. The current average amount of domestic waste collected at the kerbside is 21.75kg per household per week. The amount of domestic waste collected at the kerbside for each waste stream is relatively consistent over the 10-year period.

Graph 7: Average kerbside kilogram per week per household with service by stream 2009–19



Graph 8 shows the total amount of waste collected at the kerbside by waste and the amount of waste processed by each end destination method. Although numbers of households have increased, the waste generation collected is less because waste collected by private contractors not in a council contract in some multi-unit dwellings are not reported under council operations.

Graph 8: Total domestic kerbside waste in tonnes collected by processing method 2010–19



3. Recycling

3.1. Dry recyclables collected and recycled



Dry recyclables formed 22% of total domestic waste in 2018–19, where a total of 797,120 tonnes were collected, up 1.9% from 2017–18.

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 collected separately from the container deposit scheme, Return and Earn.
- Drop-off facilities allow residents to bring in recyclables, including electronic waste (e-waste), batteries, gas bottles and oils.
- Clean-up services collect large metals and bulky goods.

Table 2 shows the regional area and collection method for dry recyclables. In 2018–19, 797,120 tonnes of dry recyclables were collected in NSW. Of this, 72.9% or 581,233 tonnes was collected from the kerbside recycling bins. Return and Earn collected 14.5% of the total, which is an increase of 10% for the full 2018–19 year in the seven months since the scheme's inception. Residents took 73,943 tonnes or 9.3% to drop-off points and the remaining 2.9% was collected by clean-up services.

Around 70% of drop-off material was collected from the regional area and the rest of the state, while the Sydney metro collected 55% from kerbside and clean-up services. This reflects the different service provisions and access to kerbside collections between the different areas.

Table 2: Dry recyclables in tonnes by collection method and regional area, 2018–19

	Sydney metro	Extended area	Regional area	Rest of the state	NSW
No. of councils	30	12	19	51	112
Kerbside (tonnes)	316,014	122,257	76,087	66,875	581,233
Drop-off (tonnes)	2,178	20,151	26,648	24,966	73,943
Clean-up (tonnes)	17,297	2,486	1,848	1,176	22,808
CDS (tonnes)	44,384	27,821	18,466	25,005	115,676
Other haz recycled	935	762	482	1,281	3,459
Total domestic	380,809	173,478	123,530	119,303	797,120

In NSW, 112 of 128 councils reported a recycling collection service covering 87% of all households. The Sydney metro region collected 48% of the total kerbside recyclables from 1.56 million households with a service. The regional and rest of the state areas increased their tonnage by embracing the container deposit scheme (CDS).

Table 3 shows the average weight of dry recyclables collected from 2,816,063 households and by capita per region. On average, 207kg/year of kerbside dry recyclables were collected from households with a recycling service in 2018–19. This is a weekly average of 3.98kg per household or 1.58kg per person.

These figures are a significant decrease from the previous year due the increased popularity of Return and Earn.

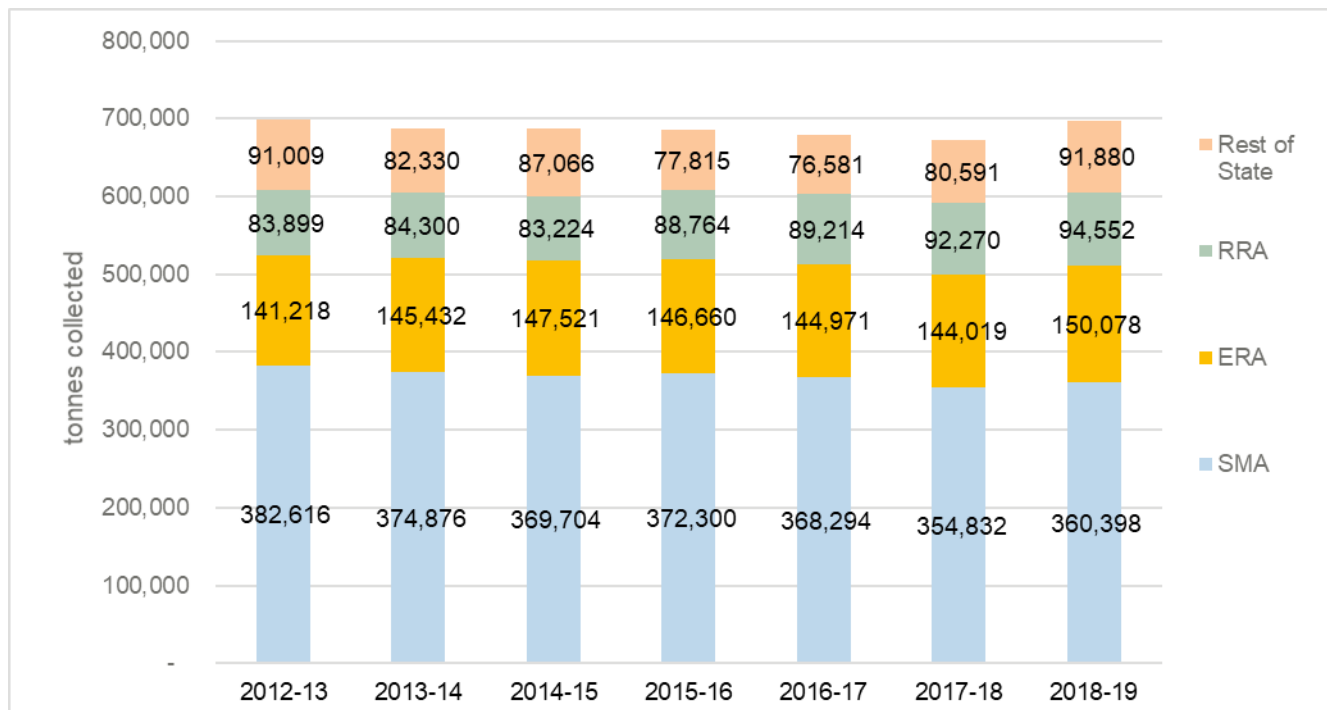
Table 3: Dry recyclables collected per household and per person by region 2018–19

Region	No. households with service	Per household ²		Per person ³	
		Annual ave kg	Weekly ave kg	Annual ave kg	Weekly ave kg
Sydney metro	1,559,462	203	3.90	74.49	1.43
Extended area	584,274	209	4.02	86.30	1.66
Regional area	322,614	236	4.54	110.60	2.13
Rest of the state	349,713	192	3.68	90.97	1.75
NSW	2,816,063	207	3.97	82.07	1.58

Note: Due to rounding and presentation of data to 1 decimal place, the multiplication of the weekly data per person may not match the annual figures when multiplied by 52.

Graph 9 shows the weight of dry recyclables collected by kerbside collections by area compared to the previous year. The regional regulated area shows a slightly increased collection, however the overall NSW total remains the same as the previous five years.

Graph 9: Kerbside dry recyclables in tonnes collected by area 2012–19

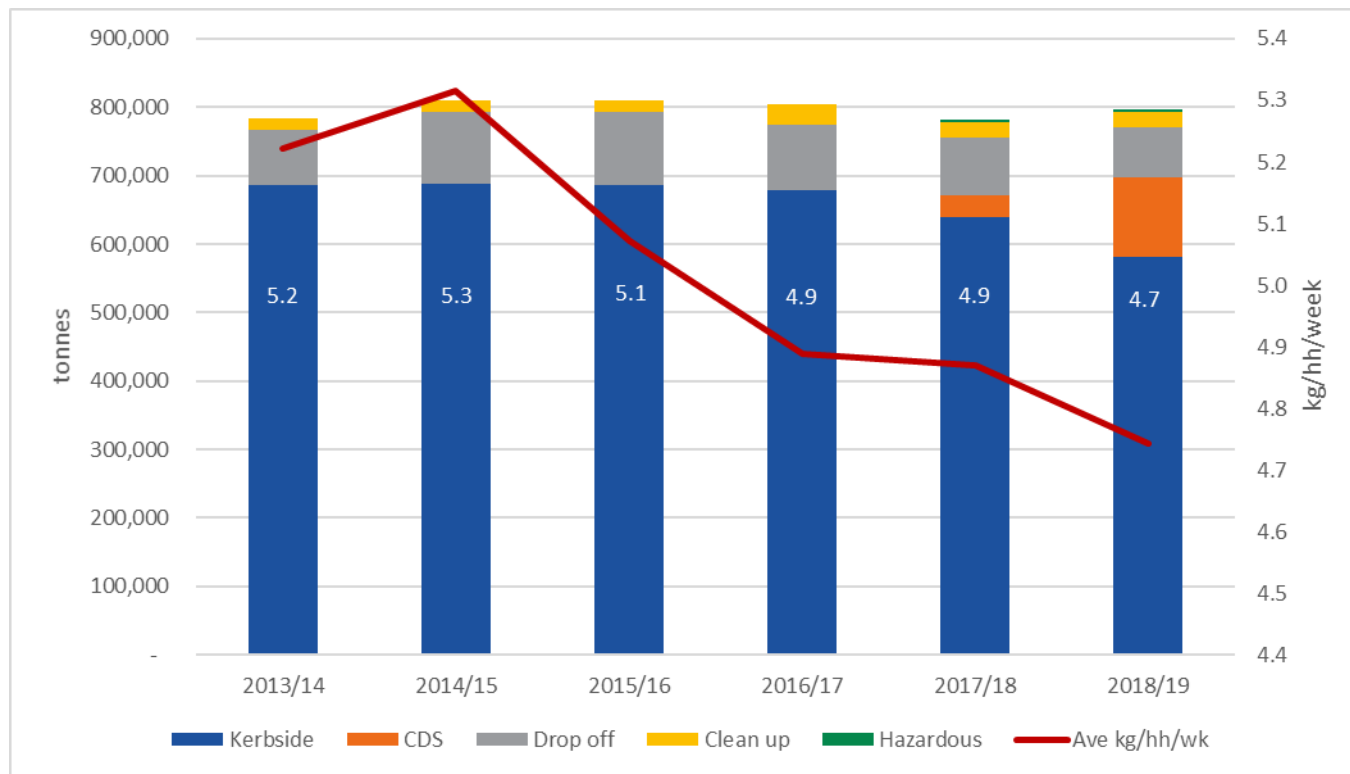


² The household average is based on the number of serviced households

³ The person average is based on the total population in councils with kerbside recycling

Over the past five years, the level of dry recyclables collected at the kerbside had declined slightly. However the support for Return and Earn has increased the collection of recyclables as illustrated in Graph 10. Overall recycling has remained the same as there have been decreases in the drop-off material over the past few years. Average kg/hh/week is based on total collection and total households in NSW.

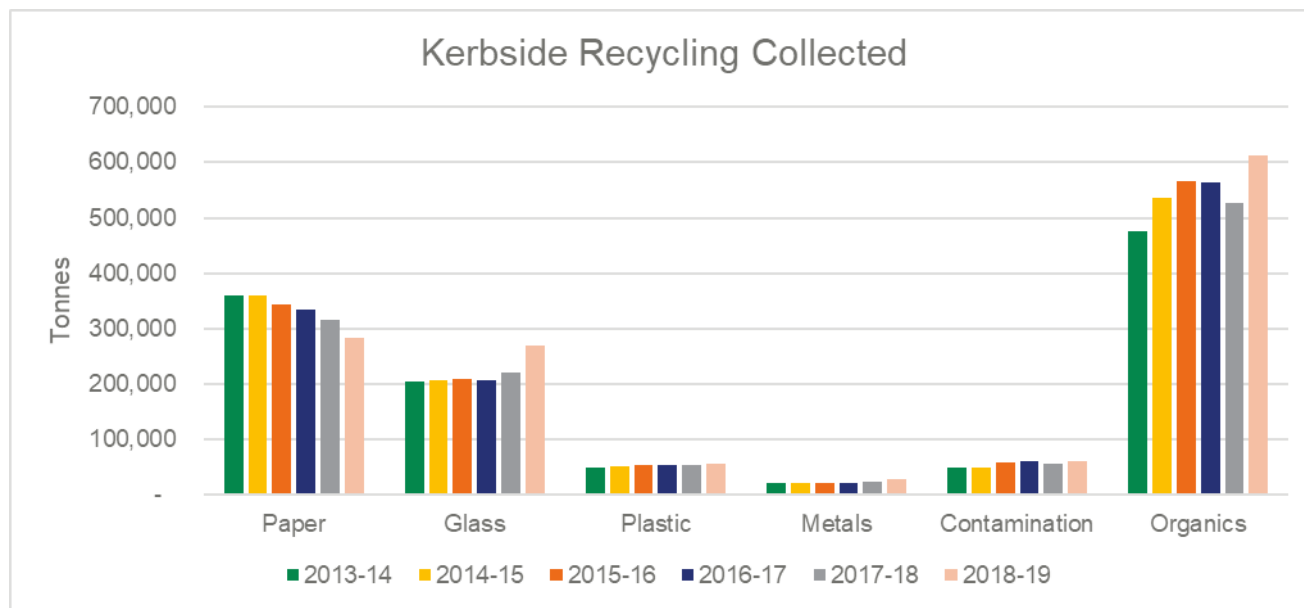
Graph 10: Dry recyclables collected at the kerbside (total and average household yield per week) 2009–19



2017-18 included 33,061 tonnes from CDS collections. 2018-19 includes 115,676 tonnes from CDS.

Graph 11 below is the average by material collected over the past six years based on compositional recycling audit data. Material collected from the CDS are included in the last two years. This explains the increase in glass, plastics and, to a lesser degree, metals.

Graph 11: Kerbside recycling collected by material in tonnes per year 2013–19



3.2. Organics collected and recycled

Like dry recyclables, organics are collected through kerbside, drop-off and clean-up services. A total of 49 councils collect garden organics only and 39 councils collect food and garden organics (FOGO), with three councils using both systems. Statewide, 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 4 shows that 609,662 tonnes of organics were collected at the kerbside in 2018–19. This is an increase of 15% from 2017–18 (the drought year). Of the 396,536 tonnes of garden organics, the 39 councils with collection systems accepting FOGO collected 213,126 tonnes in 2018–19, The regional regulated area accounted for 33% of this.

Table 4 shows the collected garden organics compared to the food and garden organics per household and capita weekly. The Sydney metro area collected 5.40kg of organics per household weekly, and 7.36kg of FOGO. The regional regulated area collected 5.32kg of organics and 8.08kg of FOGO.

Across all areas, FOGO produced the greatest yield. This was by taking the food out of the waste bin and reducing landfill, while increasing recycling rates.

The number of councils using FOGO systems has been increasing over the past few years and providing a greater yield in achieving recycling than the regular garden organics.

Table 4: Organics collected at the kerbside in tonnes by method and by region 2018–19

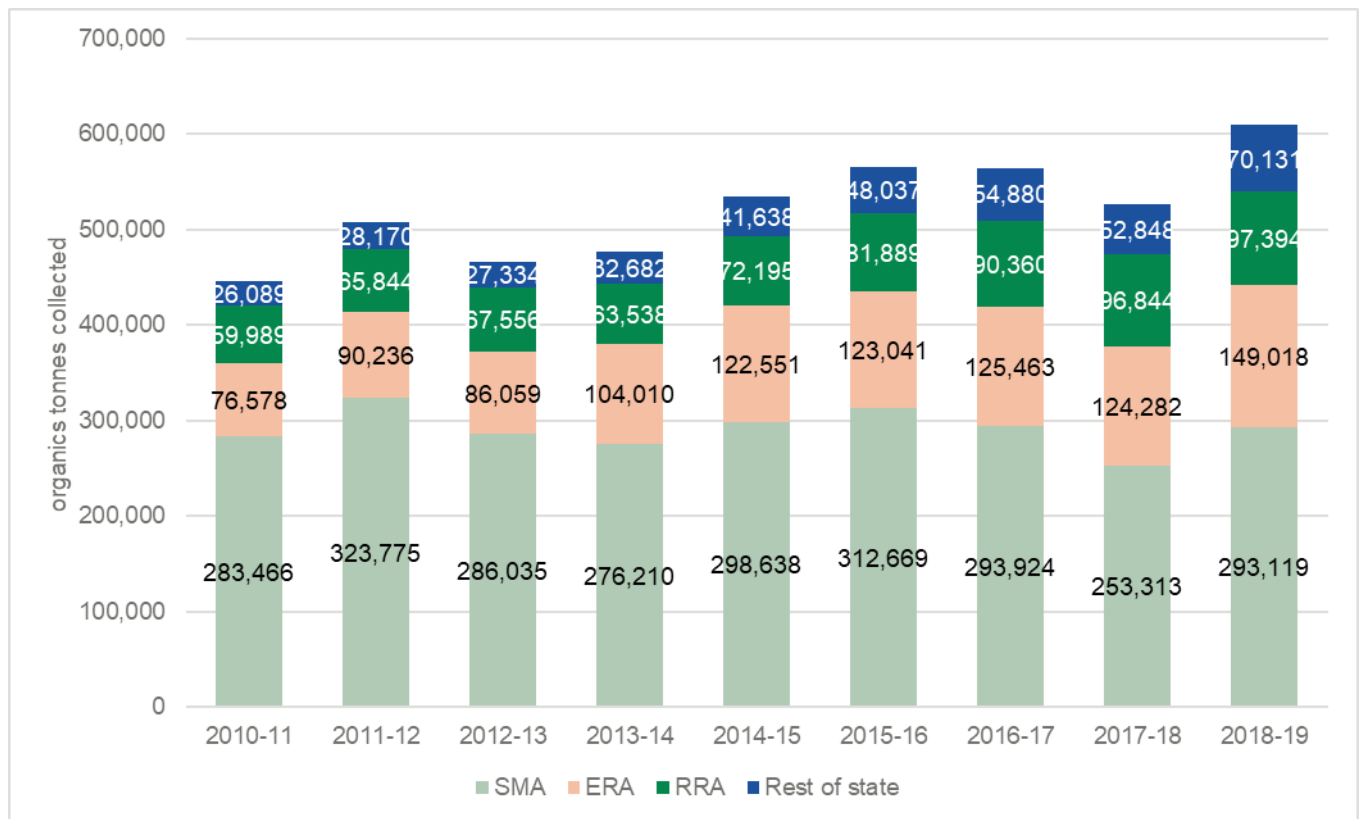
	Sydney metro area	Extended regional area	Regional regulated area	Rest of the state	NSW
Garden organics					
Councils with service	26	7	5	11	49
Tonnes collected	258,082	97,512	26,377	14,565	396,536
Average kg/hh/wk	5.40	5.19	5.32	3.61	5.25
Average Kg/ca/wk	1.94	2.07	2.62	1.80	2.00
Food and garden organics (FOGO)					
Councils with service	3	3	11	22	39
Tonnes collected	35,037	51,506	71,016	55,566	213,126
Average kg/hh/wk	7.36	8.52	8.08	6.20	7.46
Average Kg/ca/wk	2.90	3.38	3.66	2.84	3.22
Total garden organics and FOGO					
Councils with service	29	10	16	33	88
Tonnes collected	293,119	149,018	97,394	70,131	609,662
Average kg/hh/wk	5.57	6.00	7.08	5.40	5.85
Average Kg/ca/wk	2.02	2.39	3.31	2.54	2.30



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

Graph 12 below shows the steady increase in the organics collected by region over the past five years. In 2018–19, kerbside garden organics collection increased by 5.5% (around 20,000 tonnes) from 2017–18. FOGO collections increased by 61,613 tonnes or 40% from 2017–18, with a further four councils offering the service.

Graph 12: Organics collected at the kerbside in tonnes by region 2010–19



In 2018–19, there were more FOGO collections in NSW than ever: 39 councils collected 213,000 tonnes, compared to 15 councils collecting 84,215 tonnes in 2012–13.

Table 5 shows 72.5% of kerbside organics are collected from the Sydney metro and extended regulated areas. The amount of material which was sent to landfill as reject or contamination was on average 2% in NSW.

Table 5: Organics including FOGO collected at the kerbside in tonnes by region 2018–19

Region	Collected	Recycled	Disposed
Sydney metro area	293,119	287,472	5,647
Extended regulated area	149,018	147,609	1,409
Regional regulated area	97,394	94,782	2,612

Rest of the state	70,131	68,161	1,970
NSW	609,662	598,025	11,638

3.3. Organics collection systems

In 2018–19, overall organics collection increased by 86,000 tonnes or 12.5% from 2017–18. Drop-off organics, clean-up organics and other council organics remained about the same. NSW councils provided a kerbside collection service to 61.9% of all households for organics and/or FOGO.

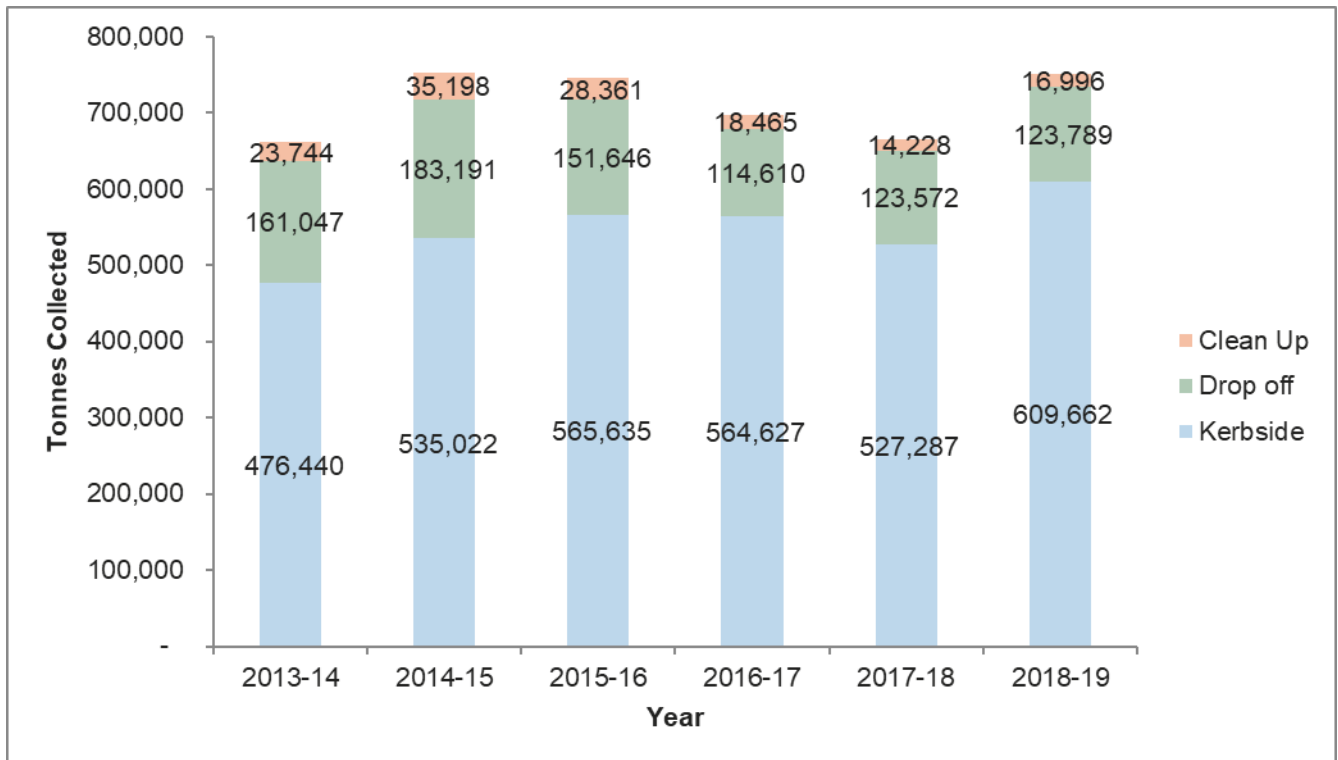
Table 7 shows how organics were collected across NSW. The majority was collected by kerbside collection. In the rest of the state, the main weight of organics collected was via drop-off. This is probably reflective of the more limited kerbside provision in this area. In all, 778.878 tonnes of organics were collected from kerbside, drop-off and clean-up services, including 28,430 tonnes collected from other council organics.

Table 7: Organics collected in tonnes by method and region 2018–19

	Sydney metro area	Extended regulated area	Regional regulated area	Rest of the state	NSW
Kerbside	293,119	149,018	97,394	70,131	609,662
Drop-off	32,514	26,355	20,199	44,721	123,789
Clean-up	4,614	7,943	1,440	3,000	16,996
Other council	2,295	10,175	10,959	5,000	28,430
Total tonnes	332,542	193,492	129,991	122,853	778,878

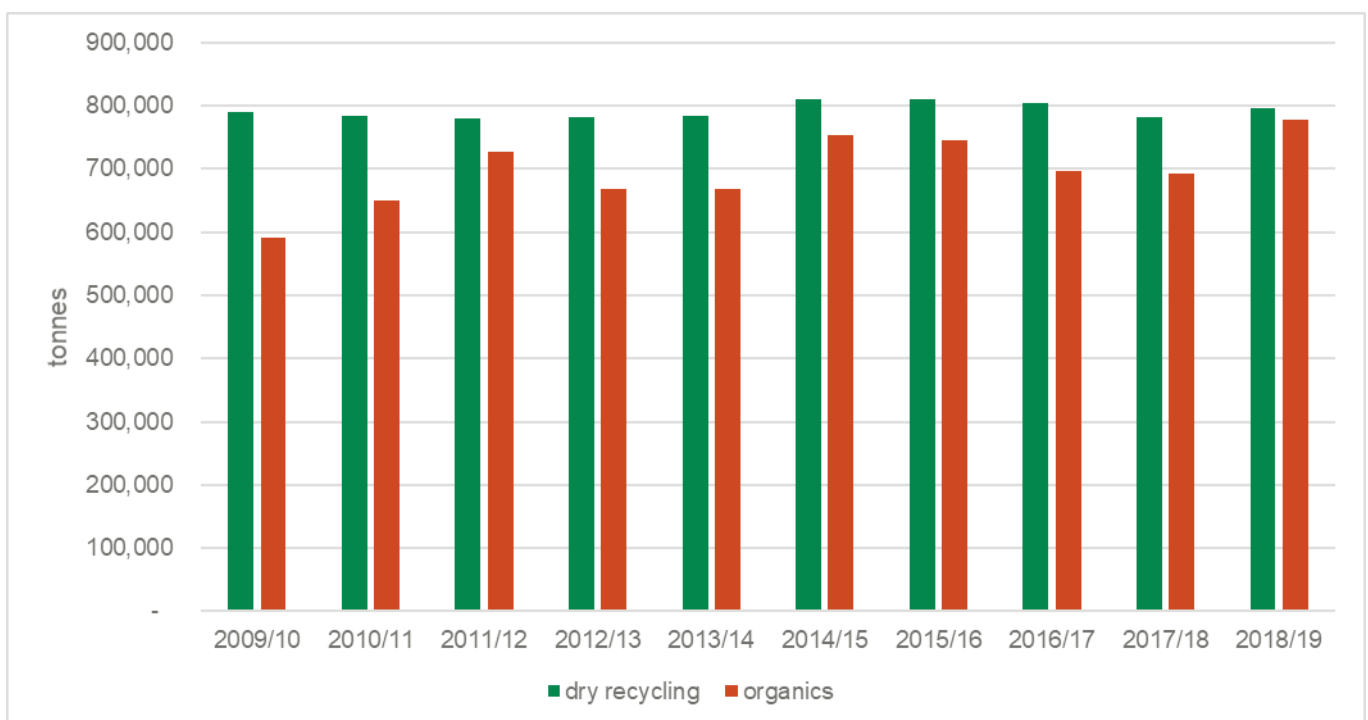
Graph 13 shows the collected dry recyclables by stream is stable but there is a linear increase over time in the quantity of organics collected.

Graph 13: Kerbside organics collected in tonnes by method 2013–19



Graph 14 shows the collected dry recyclables over time compared to the quantity of organics collected. Organics collection increased over time due to the uptake of FOGO. Recycling remained steady despite over time the more lightweight products and less newsprint in circulation.

Graph 14: Dry recyclables and organics collected in tonnes by year 2009–19



4. Residual waste

Residual waste is what's left over after households have separated out the dry recyclables and organics. It is collected from one of three methods: kerbside, at drop-off facilities and through clean-up services. The residual waste is either:

- treated in an alternative waste treatment facility before disposal, or
- sent directly to landfill.

In 2018–19, NSW residents disposed of 1,937,052 tonnes of residual waste to landfill. This figure includes:

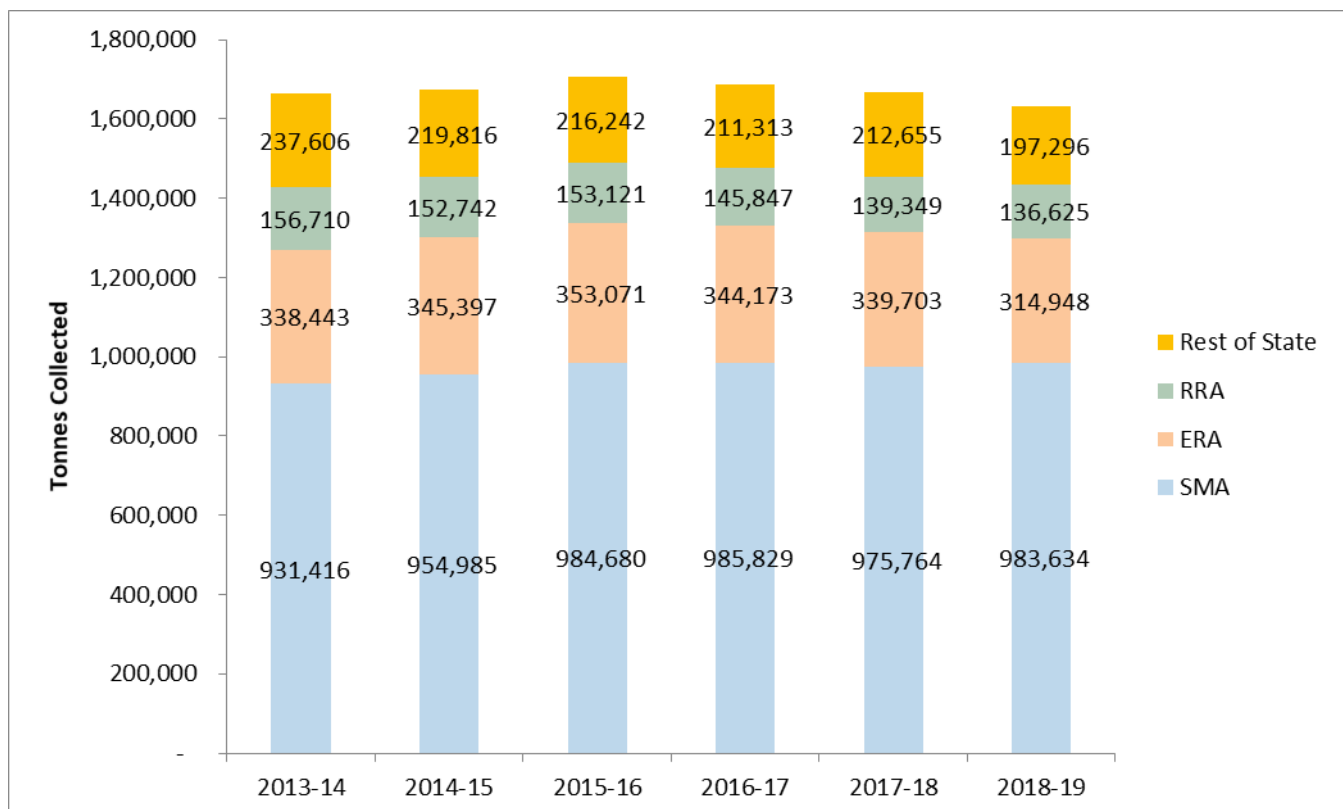
- residual waste collected at the kerbside and sent direct to landfill (1,197,430 tonnes)
- residual waste from drop-off centres (210,428 tonnes)
- residual waste from clean-up collections (177,582 tonnes)
- rejects from alternative waste treatment facilities sent to landfill (267,193 tonnes)
- rejects from dry recyclables sent to landfill from kerbside, clean-up and drop-off methods (65,108 tonnes)
- rejects from organics sent to landfill from kerbside, clean-up and drop-off methods (19,311 tonnes).

4.1. Kerbside residual waste collected and recycled

In 2018–19, the total amount of waste collected from the kerbside was 1,632,503 tonnes. This was a decrease of 2.1% from the previous year.

Graph 15 shows that decreases were across all regions except for the Sydney metro area which showed a small increase. These figures only include council-contracted and day labour waste collected. It does not include some residential properties serviced by private contractors. However, the average per person collection remains the same since 2013.

Graph 15: Kerbside residual waste collected in tonnes by region 2013–19

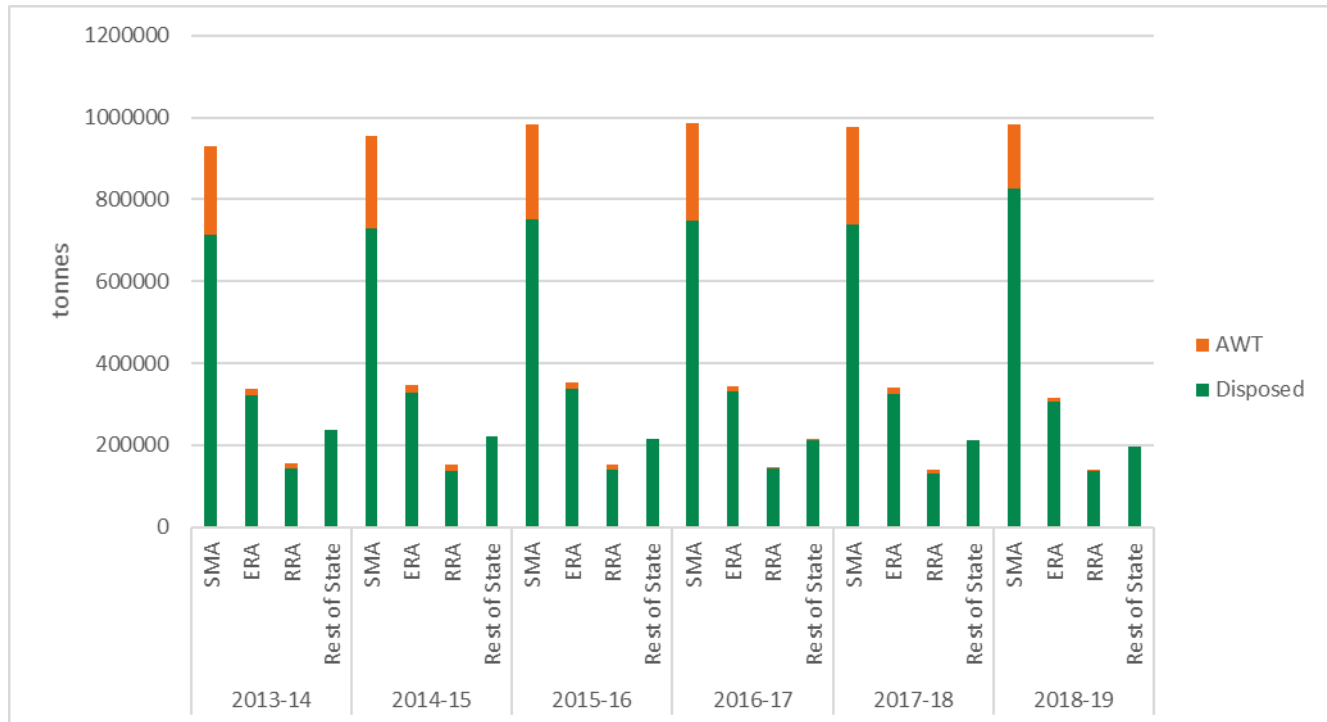




In 2018–19, 25 councils sent 429,898 tonnes of kerbside residual waste to an alternative waste treatment facility where 39% (167,879 tonnes) was processed to be recycled.

Graph 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.

Graph 16: Kerbside residual waste in tonnes by end destination by region 2013–19



In 2018–19, the average weekly residual waste created by each household was 10.9kg. This was down from 11.2kg in 2017–18. 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 the created waste, 167,879 tonnes were recovered by alternative waste treatment facilities (see Appendix tab 9 for more detail).⁴

In October 2018, the EPA revoked the general and specific Resource Recovery Orders and Resource Recovery Exemptions for the application of MWOO to land 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.

MWOO is produced at alternative waste treatment facilities, primarily to divert general household waste (red-lid bin) from landfill. MWOO is the end product of a process which aims to separate the organic waste in household red-lid bins from other waste. It was previously allowed to be applied as a soil amendment under strict controls.

Graph 17 shows the amount of material sent to alternative waste treatment facilities, amounts recovered and disposed with the combined average recovery percentage over the past 11 years. In 2018–19, about 92,500 tonnes or 35% less was recovered than in 2017–18. This results in a NSW recycling rate of -2.5%.

⁴ <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>

Graph 17: Kerbside residual waste in tonnes by year and % recovery 2008–19



Table 8: Kerbside residual waste collected in kilograms per household/person by region 2018–19

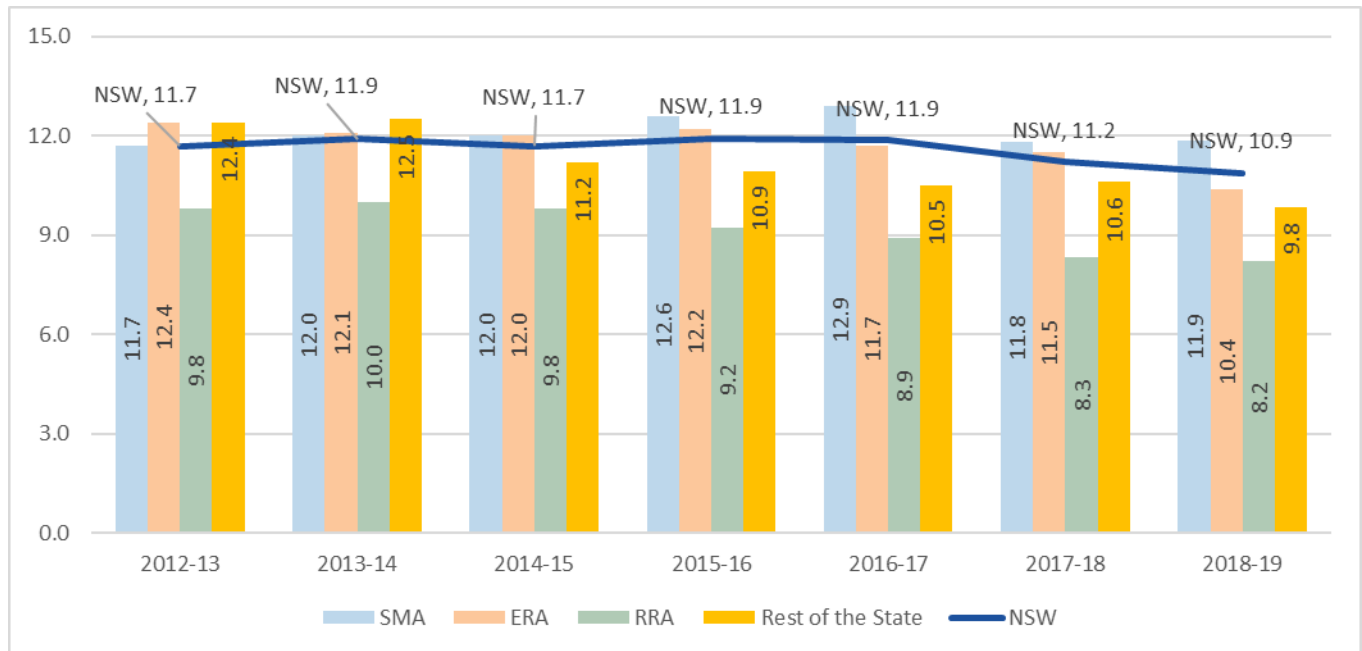
Region	Per household average		Per person average	
	Annual kg	Weekly kg	Annual kg	Weekly kg
Sydney metro area	616.7	11.9	226.9	4.4
Extended regulated area	539.7	10.4	222.6	4.3
Regional regulated area	426.5	8.2	200.2	3.9
Rest of the state	511.4	9.8	248.1	4.8
NSW*	565.9	10.9	225.9	4.3

*Figure totals for NSW may not add up to the sum of the table component numbers because they are averages.



Avoid and reduce waste generation: per household average residual waste has slightly decreased over the past couple of years. FOGO collections have contributed to this.

Graph 18: Average⁵ household weekly kerbside residual waste in kilograms by region 2012–19



4.2. Collection systems

In 2018–19, NSW councils can be categorised into five types of collection systems, each with a combination of waste, recycling, organics and FOGO. The collection figures in Table 9 are an average amount collected based on households with a service and calculated to kilograms per household per week.

All 128 NSW councils had a residual waste collection service. Kerbside waste services covered 89.2% of households, 92% in the Sydney metro area, 96.7% in the extended regulated area, 83.11% in the regional regulated area and 75% in the rest of the state.

A total of 111 of the 128 councils provided a weekly service, collecting 11.76kg per household per week. The remaining 17 councils collected fortnightly, yielding 7.42kg per household per collection.

A total of 112 councils provided a dry recycling service. Sixteen of these were weekly, yielding 4.57kg per household per collection. The remaining 96 were (predominantly) fortnightly, yielding 3.94kg per household per collection and delivering a service to 87.1% of households in NSW.

A garden organics service was offered by 49 councils. Of those, 44 used a fortnightly service, yielding 4.96kg per household per collection.

The number of councils collecting FOGO increased by four to 39. Twenty-six of these provided a weekly service, collecting 6.87kg per household per week and 13 provided a fortnightly service collecting 4.51kg per household per fortnight.

The combinations in Table 9 show the average collection yield per system for the councils' predominant service. Note: some councils have a mix and range of services offered.

⁵ Household average is based on the number of serviced households. Person average is based on the total population in councils that provide waste collection.

Table 9: Collection systems and average yield per household per week by council 2018–19

No. of LGAs	Avg. collected kg per household per week	Predominant system	Avg. recycling rate %
15	15.44	Waste only	9%
28	16.22	Waste + recycling	31%
47	20.89	Waste + recycling + garden organics	47%
34	18.75	Waste + recycling + FOGO	54%
4	18.32	Waste + recycling + garden organics + FOGO	49%

Appendix tab 8 shows each LGA average yield per household and capita.

5. Disposal to landfill

5.1. Waste streams

Waste sent to landfill can come from a variety of collection or service methods. It is often sent directly from residual waste collections from kerbside or clean-up, and some residents take waste direct to drop-off centres. Rejects or contamination from recycling facilities also contribute, along with material unable to be recycled by alternative waste treatment facilities.

In 2018–19, 1,937,052 tonnes of domestic waste was sent to landfill. This was a 2.8% increase from 2017–18. The Sydney metro area councils sent 993,381 tonnes to landfill (51% of the state), followed by the extended regulated area councils which accounted for 427,015 tonnes or 22% of the state.

Graph 19 shows the origin of the material sent to landfill.

Graph 19: Tonnes sent to landfill from waste stream/collection method by region 2018–19

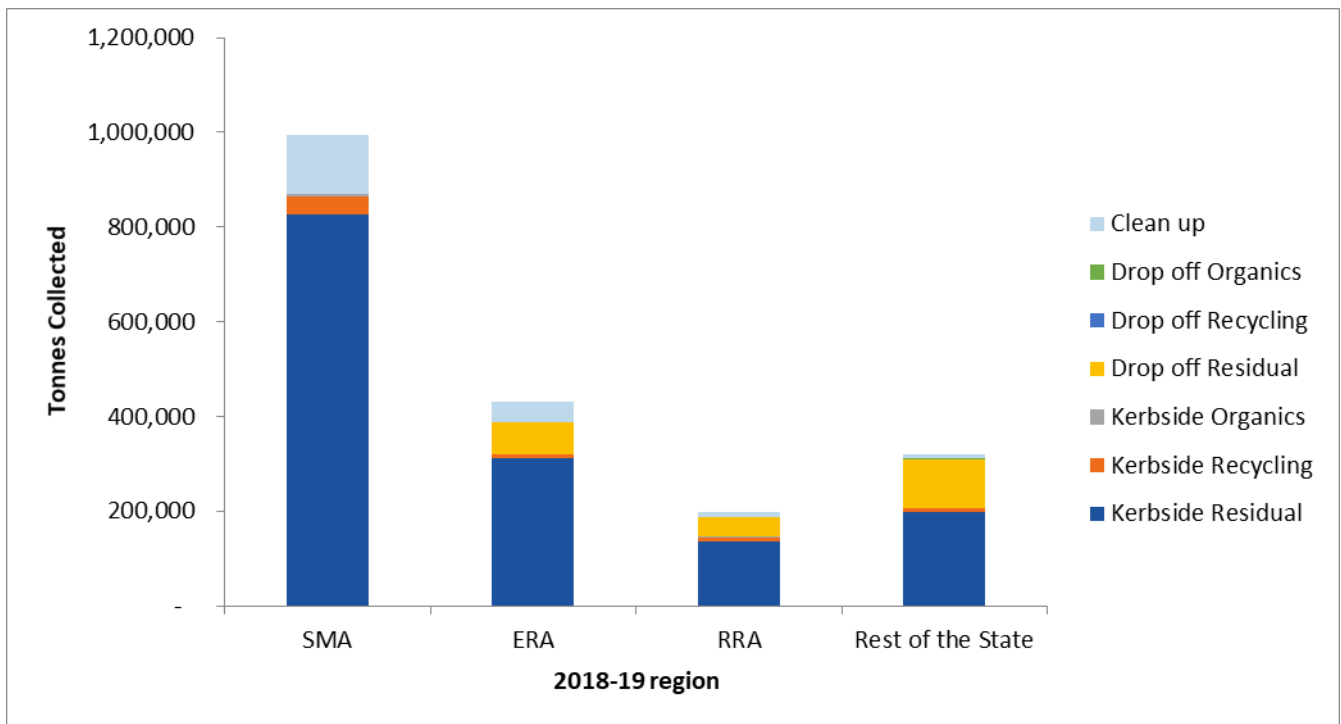
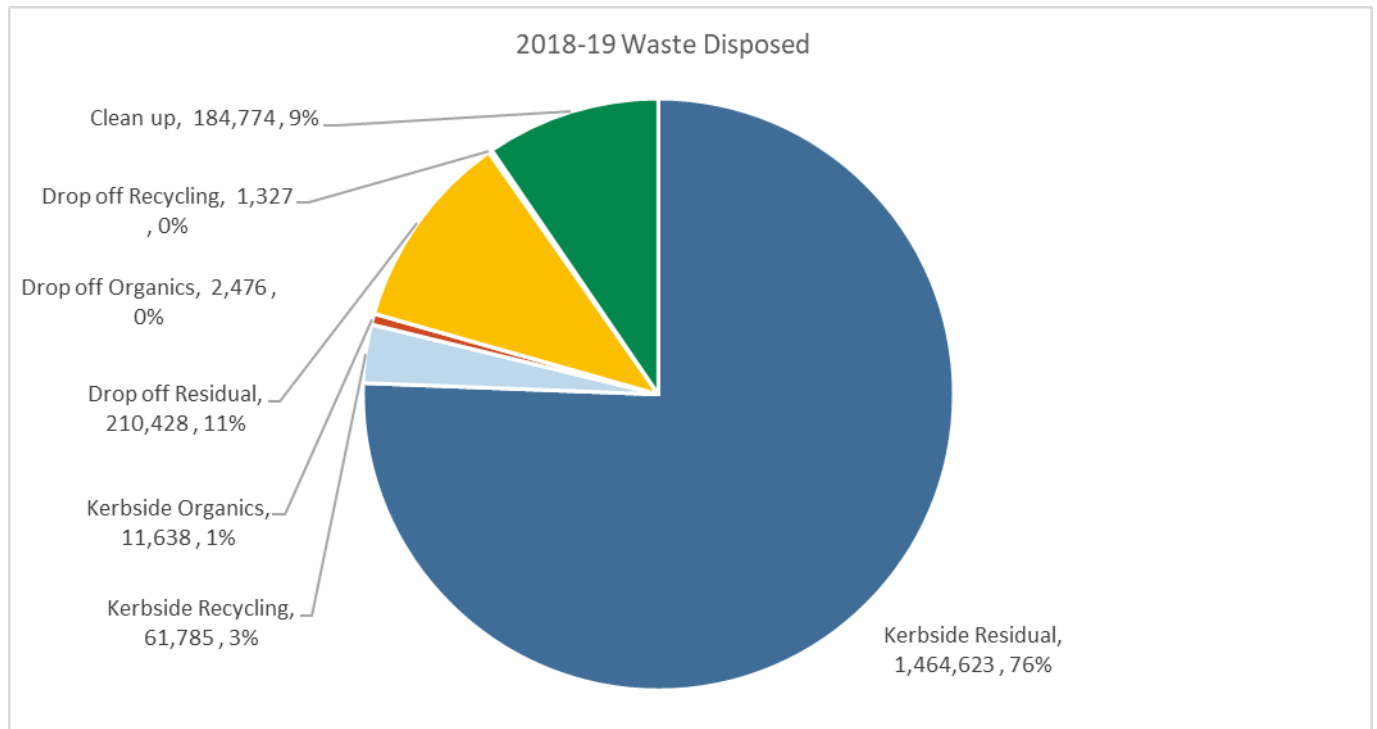


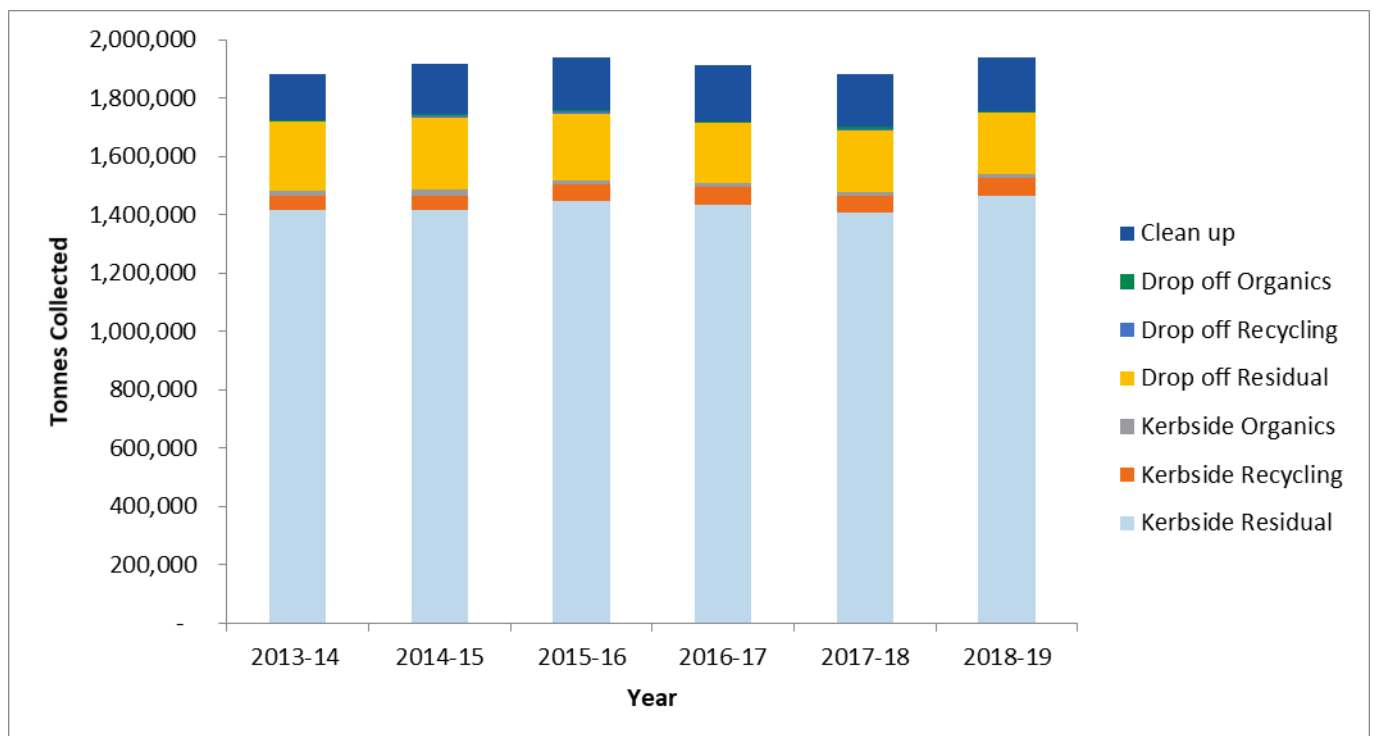
Diagram 1 shows the amount of residual waste disposed to landfill, including alternative waste treatment disposal plus rejects from recycling and organics processes. Contaminants from dry recycling and organics collected kerbside make up 3.4% (65,108 tonnes) of the total. Drop-off contaminants make up 11.1% (214,232 tonnes). Clean-up contaminants make up 9.5% (184,774). Clean-up waste disposed includes primarily bulky goods and hard waste. All of these are about the same as 2017–18.

Diagram 1: Total domestic waste sent to landfill in tonnes by collection method/waste stream 2018–19



Graph 20 shows there have been only marginal changes in the amount and proportion of residual waste sent to landfill by collection method and stream from the previous few years, although there is a decrease in the total weight of material sent to landfill.

Graph 20: Domestic waste disposed to landfill in tonnes by collection method/waste stream 2013–19

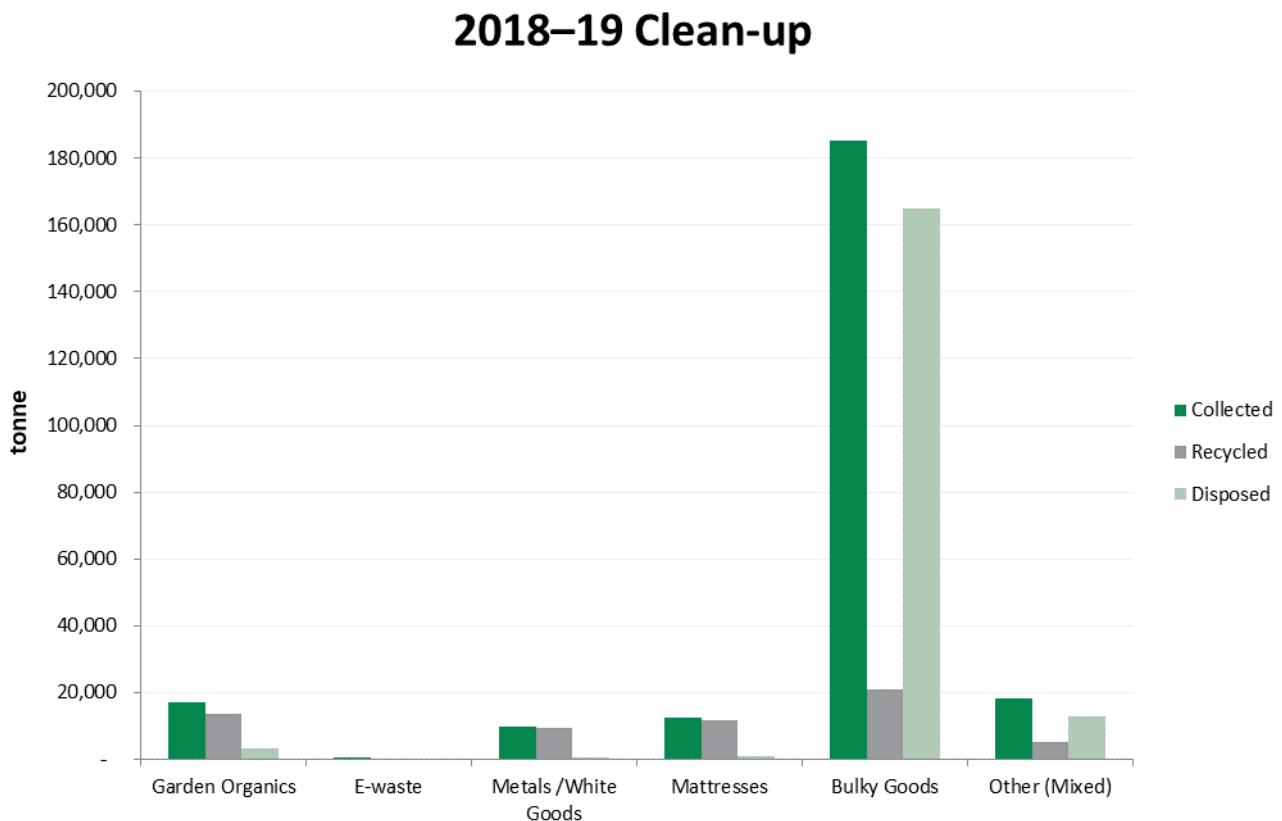


6. Clean-up services

6.1. Waste collected by council clean-up services

In 2018–19, kerbside clean-up services by NSW councils collected 243,175 tonnes. Bulky goods and other waste made up 83.6% (203,371 tonnes), garden organics made up 6% (16,996 tonnes) and metals made up 4% (9,838). The remaining were e-waste (462 tonnes) and mattresses (12,508 tonnes) 4.6%.

Graph 21: Kerbside clean-up waste in tonnes by material type, collected recycled and disposed 2018–19



25.2% of the 243,175 tonnes collected by clean-up services were recycled.

In 2018–19, 72 NSW councils provided a variety of different kerbside clean-up services but access to them varied across councils.

Table 10 shows the weight of source-separated material collected separately from residual waste. Of the 243,175 tonnes collected from kerbside clean-up services, 61,323 were recycled and 182,303 went to landfill. In 2018–19, the recycling rate for kerbside clean-up services was 25.2%.

For some materials such as garden organics, e-waste and white goods, almost all of the material collected was recycled. For other materials collected separately such as bulky goods, only a proportion was suitable for recycling with the remainder disposed of.

Table 10: Tonnes of source separated clean-up materials by type 2018–19

Material type	Collected	Recycled	Disposed	% Recycled
Garden organics	16,996	13,774	3,222	81%
E-waste	462	258	204	56%
Metals	9,838	9,385	453	95%
Mattresses	12,508	11,616	892	93%
Bulky goods	185,204	20,442	164,763	11%
Other (mixed)	18,167	5,348	12,819	29%
Total	243,175	60,823	182,353	25%

Note: The weight of bulky goods disposed of may include recyclable material which was collected as part of the bulky goods such garden organics, mattresses etc.

*Total figure does not represent the sum of the component numbers due to rounding



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

Table 11 shows a significant variation between regions in the weight of material from clean-up collections and how much of that was recycled. The largest volume of material was collected from the Sydney metro region, although only 25% was recycled. Conversely, the rest of the state collected the least weight, but recycled the greatest proportion of the material.

Table 11: Tonnes of bulk waste clean-up materials by area 2018–19

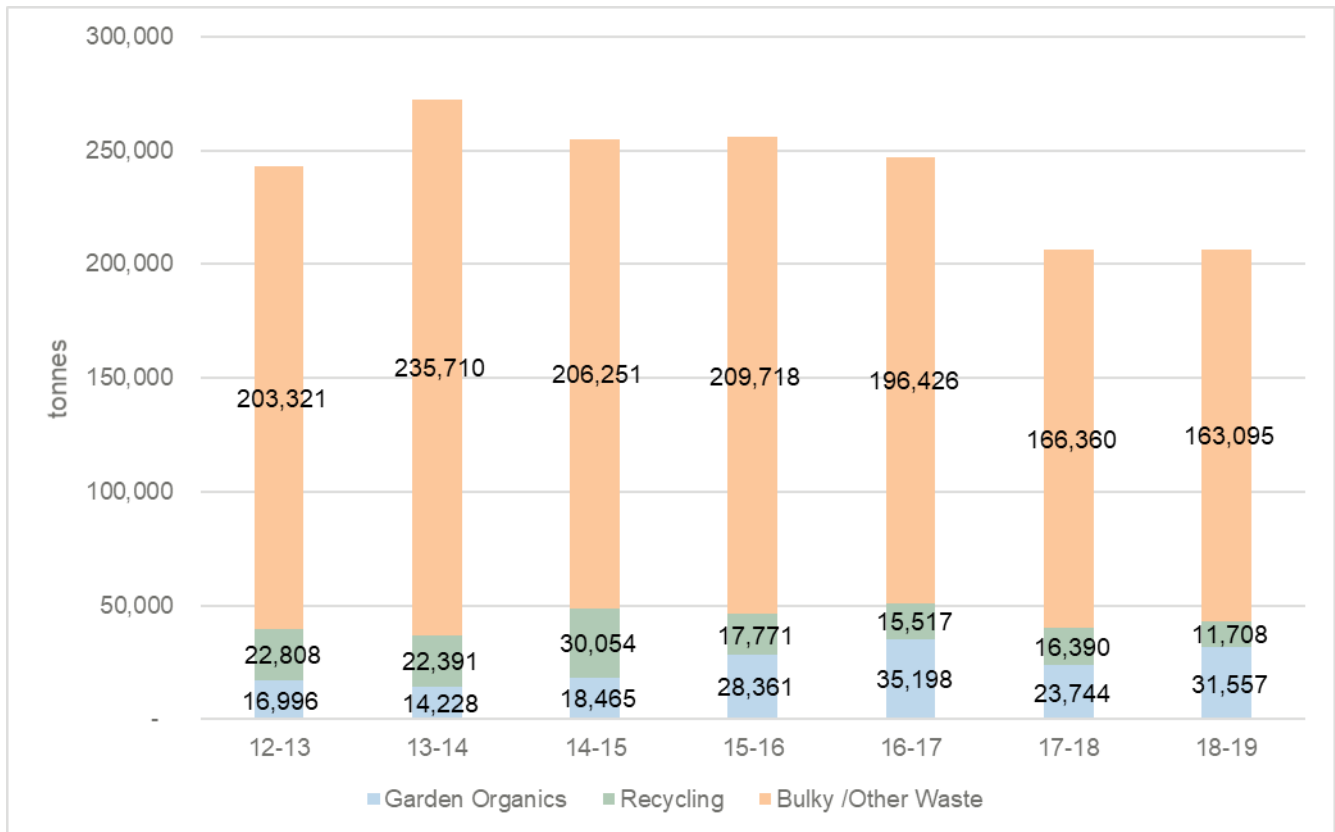
Region	Councils	Collected	Recycled	Landfilled	% Recycled
Sydney metro area	17	163,758	122,184	41,575	25%
Extended regulated area	11	58,804	45,239	13,565	23%
Regional regulated area	13	13,153	8,818	4,335	33%
Rest of the state	25	7,461	6,063	1,398	19%
NSW	66	243,176	182,303	60,873	75%

*Total figures do not represent the sum of the component numbers due to rounding

All areas are similar to the previous year and overall weight collected decreased by 29,153 tonnes.

Graph 22 shows the steady increase in kerbside clean-up collection including garden organics, bulky goods and other (mixed waste) since 2012–13

Graph 22: Kerbside clean-up majority waste materials in tonnes 2012–19

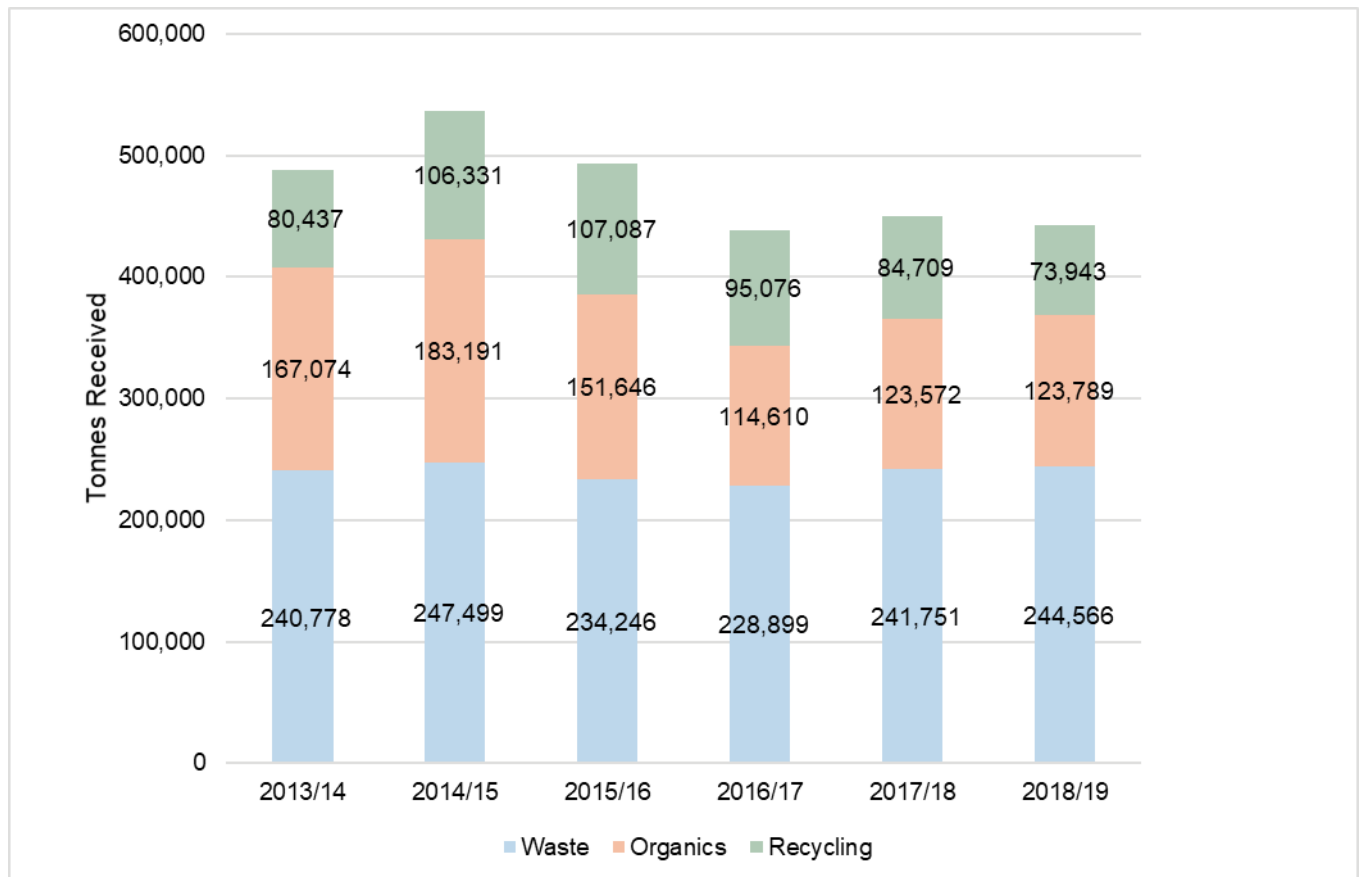


7. Drop-off facilities

7.1. Waste dropped off at a facility by residents

Graph 23 shows that in 2018–19, residents took 442,299 tonnes of material to drop-off facilities. Across NSW, 92 of the total 128 council areas offered some sort of drop-off facility for residents. Graph 23 shows 244,566 tonnes of residual waste and 123,789 tonnes of organics were collected. In 2017–18, dry recyclables decreased to 73,943 tonnes, with waste and organics streams slightly increasing from the previous year. Overall there was a 1.7% decrease in material collected at drop-off facilities in NSW compared to the previous year.

Graph 23: Drop-off received in tonnes by waste stream 2012–19





In 2018–19, a total of 45% of material from drop-off facilities was recycled.

Graph 24: Drop-off material in tonnes received by waste stream 2018–19

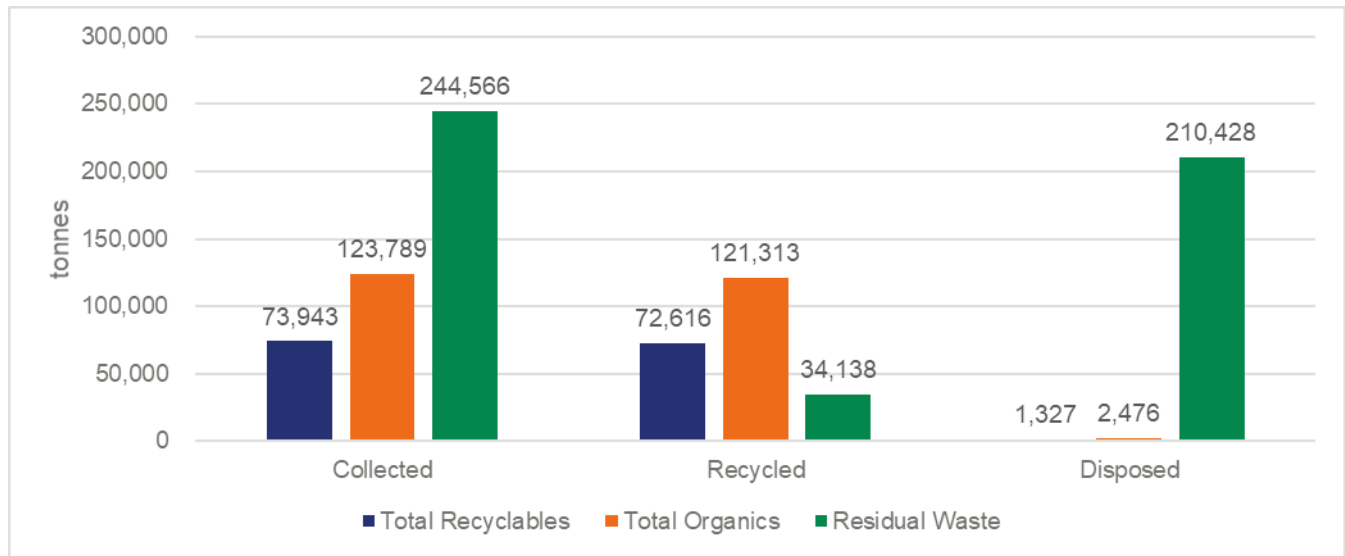
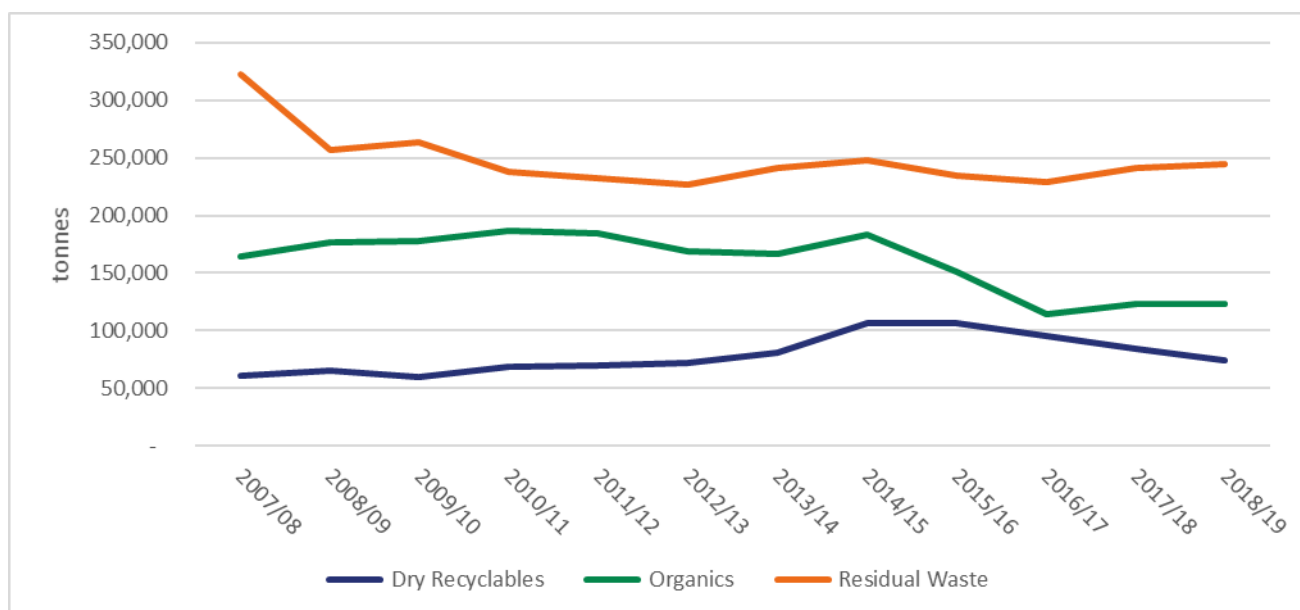


Table 12: Drop-off service provisions in tonnes by region 2018–19

Region	Councils	Collected	Recovered	Disposed	Recycled
Sydney metro area	21	35,909	35,351	558	98%
Extended regulated area	11	126,957	60,993	65,964	48%
Regional regulated area	15	102,946	59,941	43,005	58%
Rest of the state	45	176,486	71,782	104,705	41%
NSW	92	442,299	228,067	214,232	52%

Graph 25: Drop-off material in tonnes received by waste stream 2007–19



Terms

Contaminants

The tonnes rejected by recycling operators that are disposed of to landfill from the total amount sent for recycling. For organics, the tonnes which have not been processed are sent to landfill.

Dry recyclables

Material collected in the yellow lid recycling bin, varies for what's accepted for different councils.

Household recyclables are collected from three sources:

- Kerbside collection which picks up mixed paper, newspaper, magazines, cardboard, plastic films and bottles, steel and aluminium cans and glass bottles.
- Drop-off facilities accepting the above plus other material (e.g. batteries, 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 household food scraps. These are collected from kerbside, clean-up and drop-off facilities.

Recyclables

Dry recyclable and organic waste material which is not residual waste

Recycling rates

The percentage of all domestic waste that is recycled, calculated as:

$$\frac{\text{Total recycled}}{\text{Total collected}} \times 100$$

Residual waste

Waste created by domestic activity, less recyclables and organics.

Total domestic waste

All waste created by households which includes residual waste, recyclables and organics that councils collect from households. Council collection services include kerbside, clean-up collections and drop-off facilities

Waste stream

Each category for which the waste material is collected. Residual waste, predominantly red-lid bin material, intended for disposal. Recyclables collected in yellow-lid bin intended for recycling and organics, intended for recycling. All three streams have clean-up and drop-off options along with kerbside collections.