

# NSW Local Government Waste and Resource Recovery Data Report 2015–16

as reported by Councils

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# Overview

## A snapshot of local and statewide waste management

The *NSW Local Government Waste and Resource Recovery Data Report 2015–16* is based on voluntary survey responses from all 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.

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

This report includes only domestic waste and recyclables, which are the main component 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 2016 population figures from the Australian Bureau of Statistics (ABS).

## 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 community to improve the environment and community wellbeing by reducing waste and using resources more efficiently.

The WARR Strategy includes six long-term targets:

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

## Focus on recycling will help achieve targets

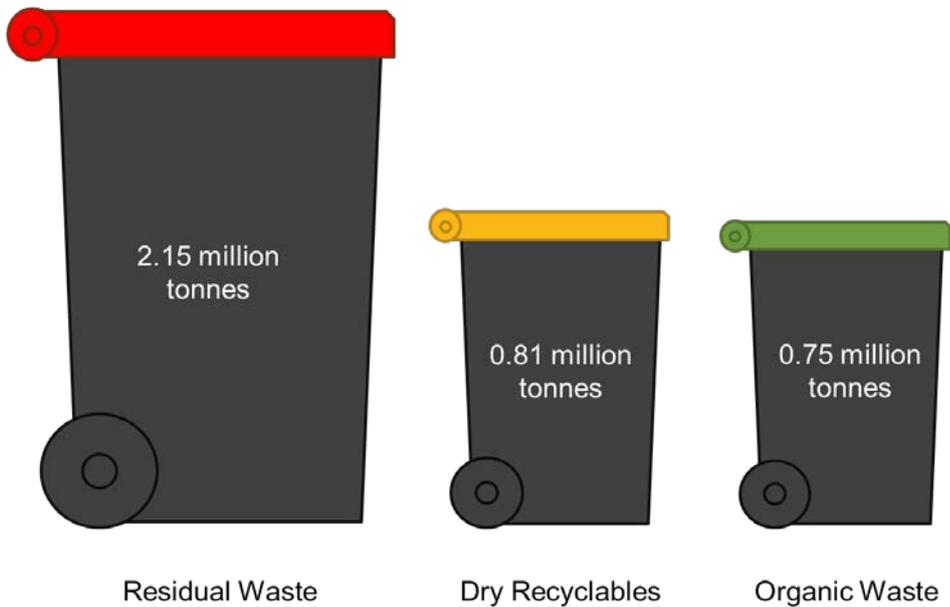
For local councils to meet NSW WARR Strategy targets, it is vital to focus on reducing waste and increasing recycling. This report includes recycling rates for each waste stream. Results for each council are in Appendix 3.



## Avoid and reduce waste generation

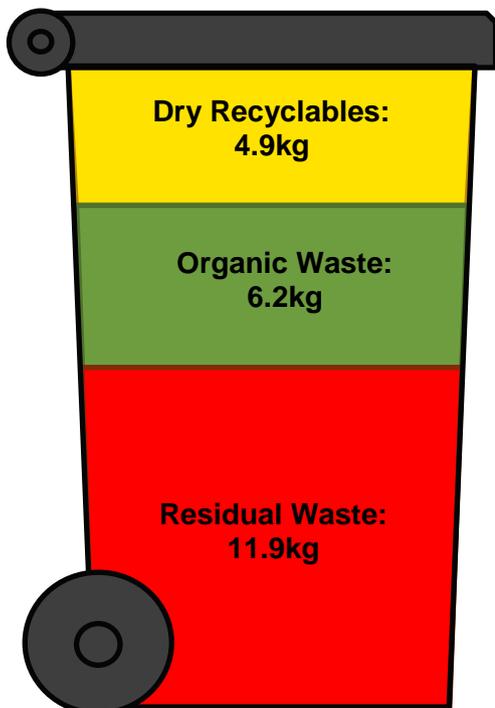
In 2015–16 households created 3.71 million tonnes of domestic waste, collected 2.15 million tonnes of residual waste (red-lid bin contents) and 1.56 million tonnes of dry recycling and organics.

Figure 1: Total waste collected by stream



The average household created 23.2 kilograms (kg) of kerbside collected material per week, or 9.4kg per person each week. The average household puts out 4.9kg of recyclables, 6.2kg of organics and 11.9kg of residual waste at the kerbside for collection each week.

Figure 2: Average weekly waste for collection



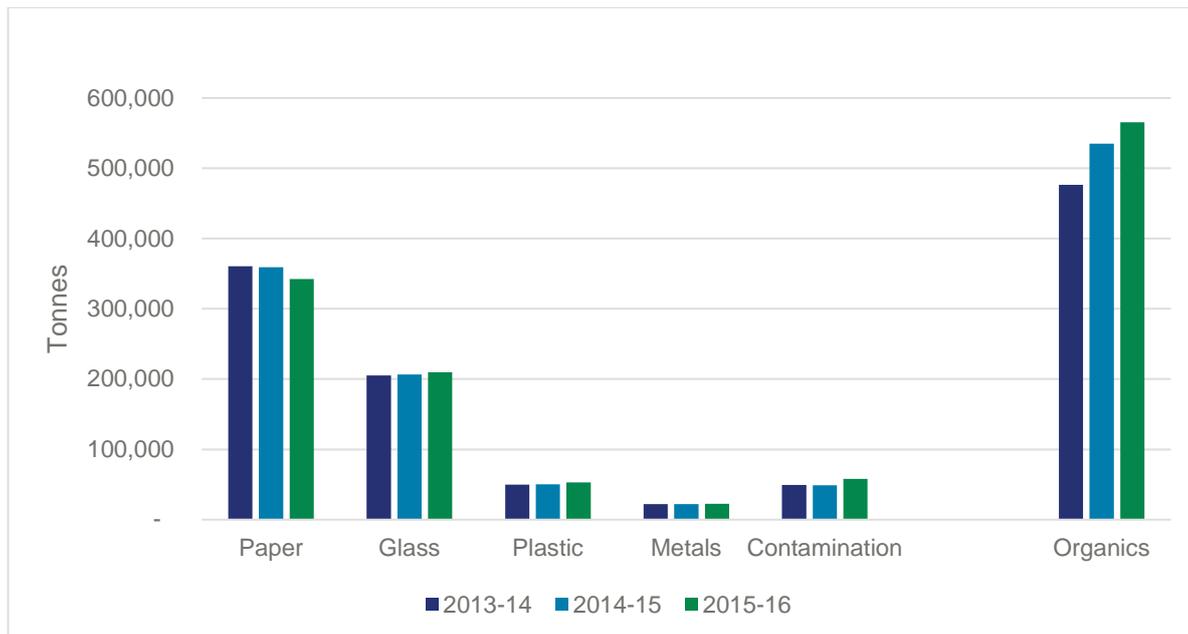


## Increase recycling

Around 1.76 million tonnes were recycled overall from domestic kerbside, clean-up and drop-off services, comprising 743,000 tonnes of recyclables; 723,500 tonnes of organics, 36,000 tonnes drop-off and clean-up waste recycled and 259,500 tonnes of material recovered via alternate waste treatment (AWT).

Kerbside dry recycling material collected remained static to previous years at 686,600 tonnes. There has been a gradual increase in kerbside organics collected, reaching 565,600 tonnes in 2015–16. The graph below is the average by material collected over the past three years based on compositional recycling audit data.

Graph 1: Kerbside recycling collected 2013–17 (tonnes)



In addition, 20 councils sent 507,000 tonnes of kerbside residual waste to an AWT facility where 259,500 tonnes or an average of 51% was recycled.



## Divert more waste from landfill

In 2015–16, 47.5% of domestic waste that was created in NSW was diverted from landfill. This is in line with 48% in 2014–15, and still higher than in 2013–14 when the recycling rate was 46.8%.

The Sydney Metropolitan Area (Sydney Metro) collected 1.86 million tonnes of kerbside waste of which 940,000 tonnes (50.5%) was diverted from landfill, an increase of 35,000 or 0.3% from 2014–15.

Across NSW, 1.94 million tonnes was disposed to landfill. Most of this was residual waste sent direct to landfill, accounting for 1.86 million tonnes. A further 67,000 tonnes were contaminants from dry recyclables and 15,000 tonnes from organics collections sent as rejects from the processing facilities.

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

# 1. Total domestic waste

## 1.1. Generated and recycled



The average domestic waste generated per household each week is 23.2kg. This is a decrease from 24.5kg in 2014–15. Waste generated per household includes regular kerbside collections, clean-up and resident drop-off materials.

In 2015–16, NSW created 3.71 million tonnes of domestic waste. This is an increase of 15,700 tonnes (0.4%) from the previous year, but over the five-year period the waste generation rate is relatively static, with gradual increases in organics collections. Total domestic waste includes all recyclables, organics and residual waste from households.

The average total domestic waste generated was 23.2kg per household per week or 9.4kg per person, based on the total number of households and people in NSW.

From the 3.71 million tonnes of domestic waste generated, 1.94 million tonnes of residual waste was disposed to landfill. In absolute terms, this is an increase of about 15,680 tonnes (0.5%) in comparison to 2014–15. A total of 1.76 million tonnes of the domestic waste generated was recycled, a decrease of 11,361 tonnes (-0.64%) from 2014–15.

**The total domestic recycling rate rose from 40.8% in 2006–07 to 47.5% in 2015–16.**

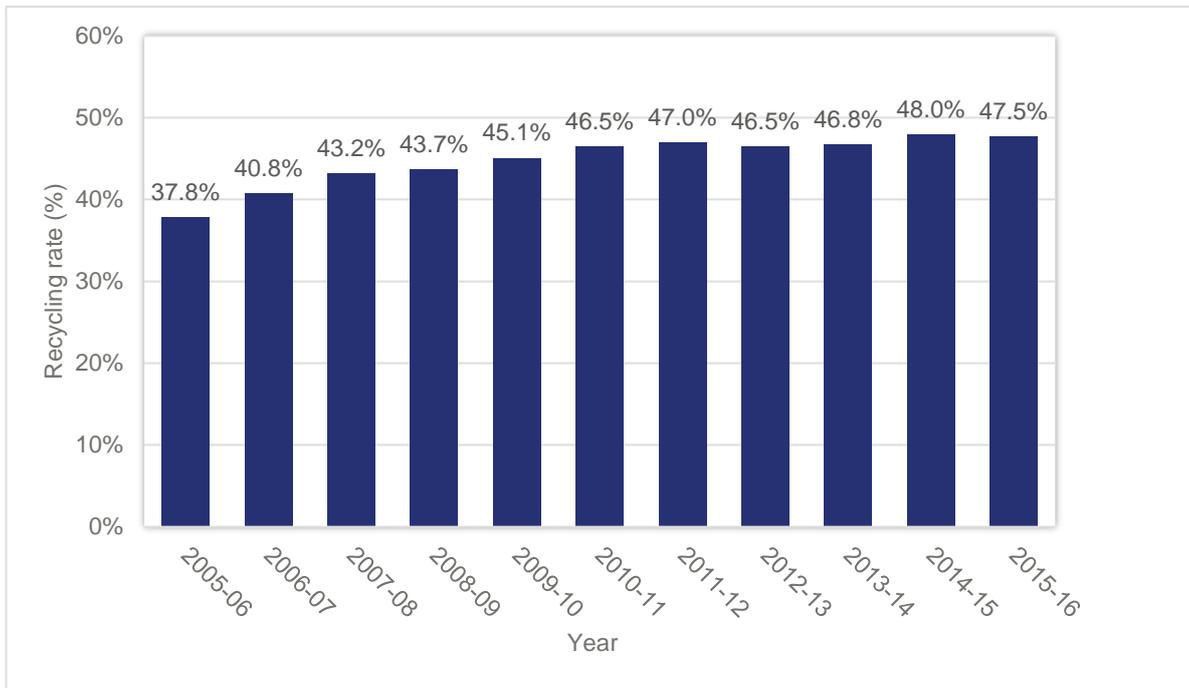
NSW residents recycled 47.5% of domestic waste: 1.76 of 3.71 million tonnes. This figure includes recycling from:

- kerbside recycling (628,000 tonnes)
- kerbside organics (555,000 tonnes)
- alternative waste treatment (260,000 tonnes)
- clean-up services (77,000 tonnes)
- drop-off facilities (249,000 tonnes).

Graph 2 shows the recycling rates in NSW over a 10-year period. Increases over the past ten years have increased consistently on average from 40.8% to 47.5%.

Since 2014–15, increased tonnes were collected by kerbside organics (increasing by 42,000 tonnes), clean-up recycling (2,000 tonnes) and recovery from residual waste following processing at AWT facilities (3,500 tonnes). There were decreases in drop-off organics (30,000 tonnes), kerbside recycling (11,000 tonnes), drop-off recycling (4,000 tonnes) and clean-up organics (7,000 tonnes). Overall there was a decrease of 11,361 tonnes (-0.64%) recycled compared to the previous year.

**Graph 2: NSW recycling rates for domestic waste between 2005–16**



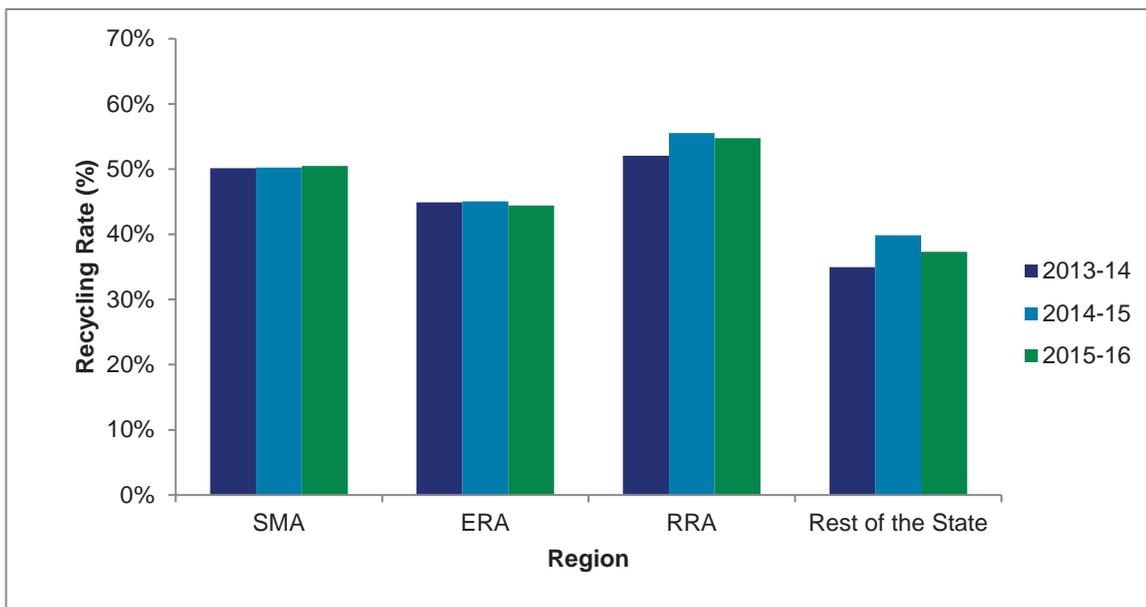
The kerbside recycling rate is stabilising because:

- fewer households reported receiving a service (3% less households than 2014-15)
- less packaging and changes in packaging e.g. from glass to plastic
- less newsprint being generated with the increase in online media
- more contaminated recycling (8%) was disposed to landfill than previous years (7%).

Graph 3 shows the recycling rates by NSW regions. The highest levels are reported in the Regional Regulated Area (RRA) at 54.8%, a slight decrease from 55.5% in 2014–15, but still up from 52.1% in 2013–14. The rest of NSW (Rest of State) at 37.3% had the same pattern, down from 39.9% in 2014-15 and up from 34.9% in 2013-14.

Recycling rates in the Sydney Metro Area (SMA) increased by 0.3% at 50.5% 2015-16 from 50.2% in 2014-15. There have been a slight decreases overall in the Extended Regulated Area (ERA) at 44.4%

**Graph 3: Recycling rates of domestic waste across NSW regions for 2013–16**





**1.76 million tonnes were recycled from kerbside collections, drop-off facilities, clean-up services and AWT facilities in 2015–16.**

Table 1 shows the weight 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 dry recyclables, the proportion of rejects was 8.3%. For organics, the proportion of rejects was 2%. For residual waste, 13.7% was recycled from AWT processing and the remaining amount was disposed of in landfill.

**Table 1: Domestic generation and end destination by waste stream 2015–16 (tonnes)**

Waste stream	Collected	Recycled	Disposed
Dry recyclables	810,399	743,022	67,377
Organics	745,642	723,558	22,084
Residual waste	2,151,079	295,534	1,855,545
<b>Total</b>	<b>3,707,120</b>	<b>1,762,114</b>	<b>1,945,006</b>

In 2015-16 the reported collection from kerbside, clean-up and drop-off dry recyclables was 810,399 tonnes, only 427 tonnes less than 2014-15. Total organics collected was 745,642 tonnes, which was 7,768 tonnes less than 2014-15. Based on data reported by local councils, 91.7% of dry recyclables collected and 97% of organics collected was recycled.

However more residual waste was generated, up by 23,875 tonnes to 2.15 million tonnes. This figure includes kerbside collections, bulky goods collected from clean-up services and waste dropped off at local facilities.

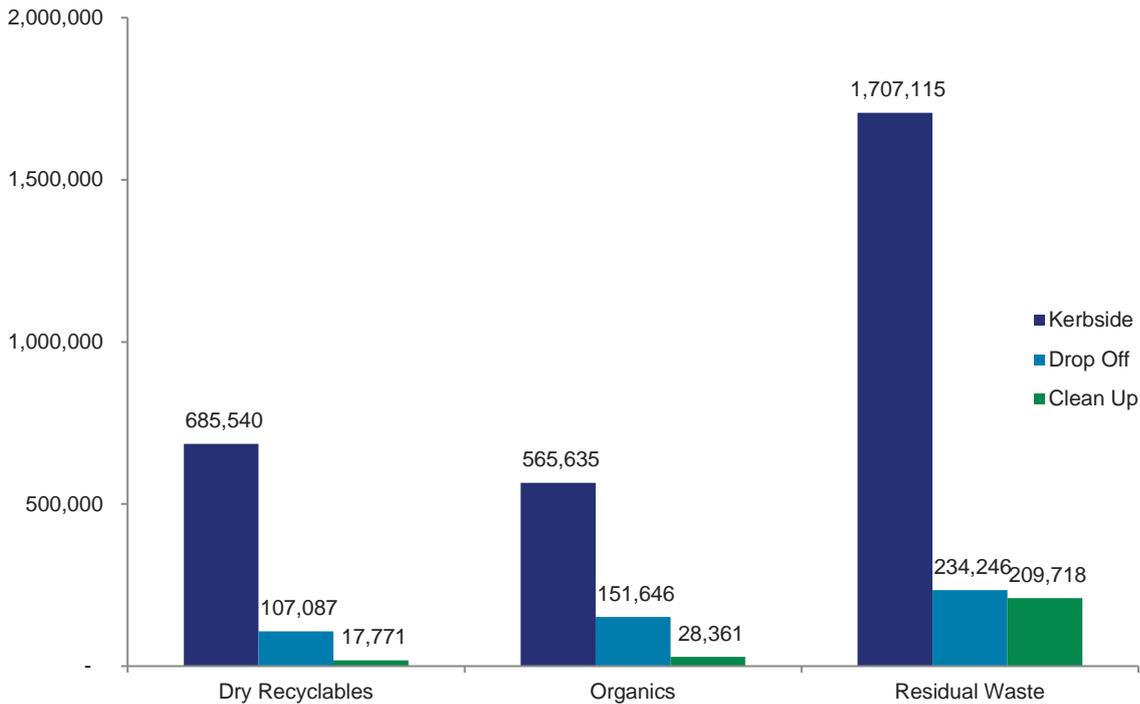
Table 2 shows the total amount of domestic waste collected, recycled and disposed by regional area. As expected, the largest amount of waste is managed within the most populated area, Sydney Metro.

**Table 2: Domestic waste collected and end destination by region 2015–16 (tonnes)**

Region	Collected	Recycled	Disposed
Sydney Metro	1,862,620	940,261	922,359
Extended Area	809,022	359,232	449,790
Regional Area	475,779	260,580	215,199
Rest of State	559,699	202,041	357,658
<b>NSW</b>	<b>3,707,120</b>	<b>1,762,114</b>	<b>1,945,006</b>

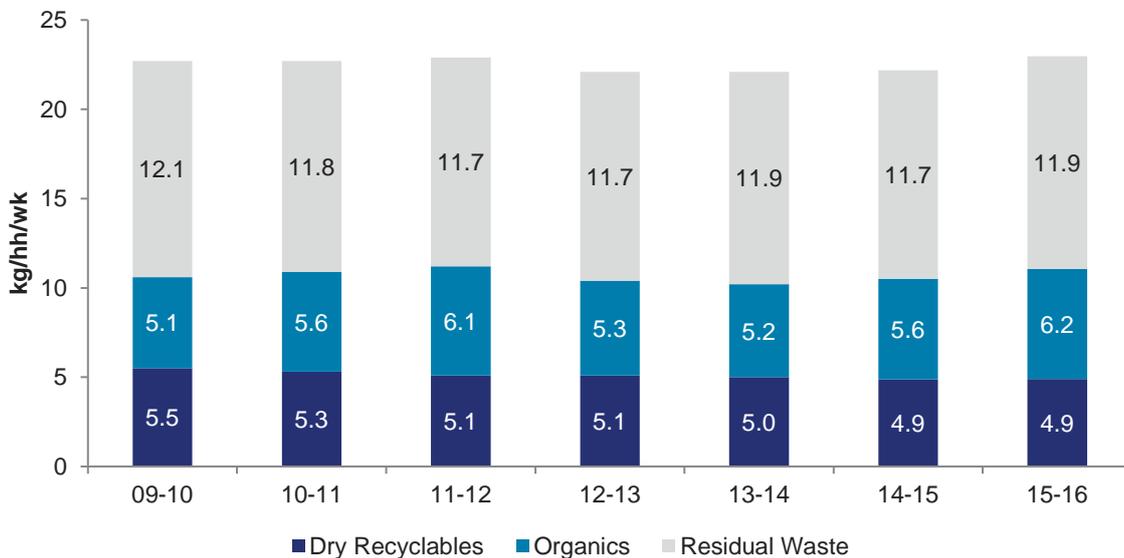
Graph 4 shows the total tonnes of domestic waste collected by waste stream and collection method. Kerbside collection is the main method of collection for all streams.

**Graph 4: Domestic waste collected by waste stream and collection method 2015–16 (tonnes)**



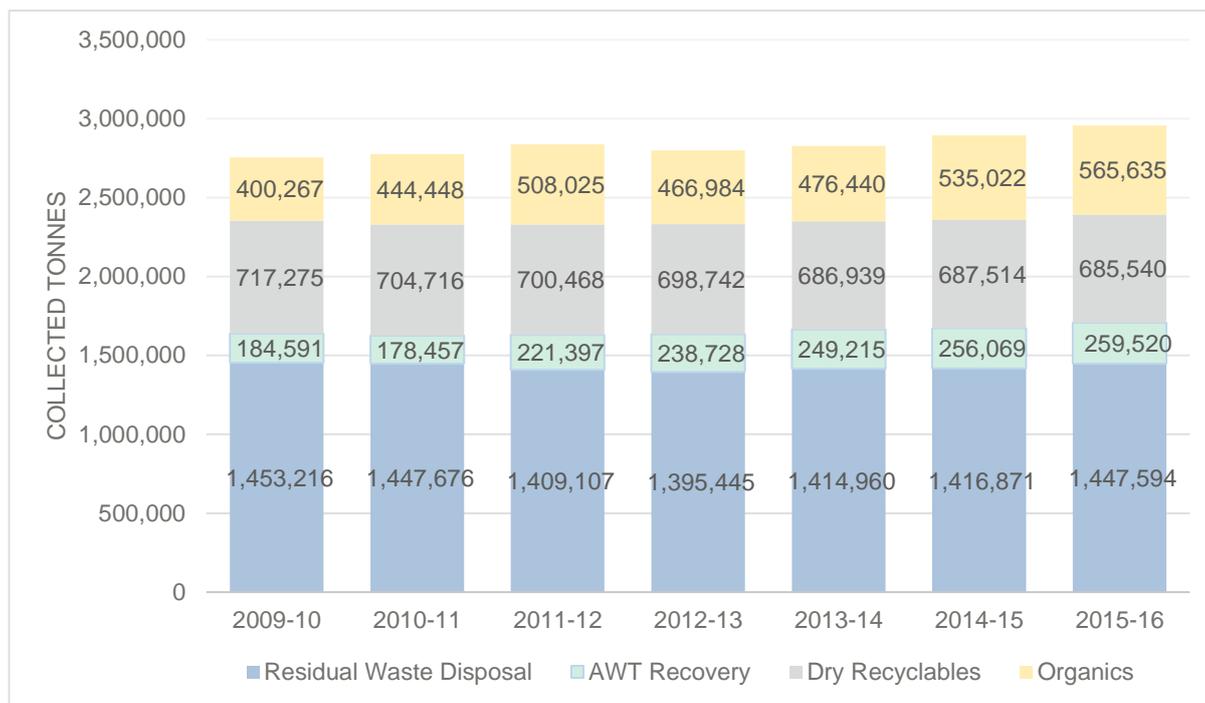
Graph 5 shows the amount of domestic waste collected at the kerbside between 2009 and 2016. The current amount of domestic waste collected at the kerbside is 23.2kg per household per week. Whilst this is a marginal increase compared to 22.2kg in 2014–15, the amount of domestic waste collected at the kerbside for each waste stream is relatively consistent over the seven-year period.

**Graph 5: Average kilograms per household per week waste generation by kerbside collection method 2009–16**



Graph 6 shows the total amount of waste collected at the kerbside by waste and the amount of waste processed by each end destination method. There have been consistent increases in the amount of waste recovered by AWT facilities, and organics, with recycling and waste collected remaining consistent over the past seven-year reporting period.

**Graph 6: Total domestic kerbside waste collected by processing method 2009–16 (tonnes)**



## 2. Recycling

### 2.1. Dry recyclables collected and recycled



**Dry recyclables formed 22% of total domestic waste in 2015–16, where a total of 810,399 tonnes were collected (compared to 35% or 663,876 tonnes in 2005-06).**

Dry recyclables are collected from three sources:

- Kerbside collections accept mixed household recyclables, including paper, newspaper, magazines, cardboard, plastic film and bottles, steel and aluminium cans, and glass bottles.
- 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 3 shows the collection method and the regional area from which dry recyclables were collected. In NSW, 810,399 tonnes of dry recyclables were collected in 2015–16. Of this, 85% or 685,540 tonnes was collected from the kerbside, with residents taking 13% to drop-off points and the remaining 2% collected by clean-up services.

Around 79% of drop-off material was collected from the Regional Area and the Rest of State, while the Sydney Metro and Extended Area collected the most from kerbside and clean-up services. This reflects the different service provisions and access to kerbside collections between the areas.

**Table 3: Dry recyclables collected by collection method and regional area 2015–16 (tonnes)**

	Sydney Metro	Extended Area	Regional Area	Rest of State	NSW
No. of councils	38	13	21	59	131
Kerbside (tonnes)	372,300	146,660	88,764	77,815	685,540
Drop-off (tonnes)	4,871	28,754	33,081	40,380	107,087
Clean-up (tonnes)	13,230	1,795	1,460	1,286	17,771
<b>Total (tonnes)</b>	<b>390,401</b>	<b>177,210</b>	<b>123,306</b>	<b>119,482</b>	<b>810,399</b>

**Note:** Decimal fractions are not included in data. Some variation may occur between figures because totals have been rounded to the nearest whole number.

In NSW 131 councils reported a recycling collection service covering 87.4% of households in the State. The Sydney Metro region collected 54% of the total kerbside recyclables from 2.69 million households. The Extended Area collected a further 22% and the Regional Area and the Rest of State collected 13% and 11% respectively.

Table 4 shows the weight of dry recyclables collected from 2,684,655 NSW households by capita per region. SMA average, 252 kg/year of kerbside dry recyclables were collected from households with a recycling service in 2015–16. This amounts to a weekly average of 4.85kg per household or 1.8kg of recycling of the 9.4kg waste generated per person, per week. The Extended Area and Regional Area collected more kerbside dry recyclables per household over the year than the NSW average: 261kg and 278kg per household per year respectively.

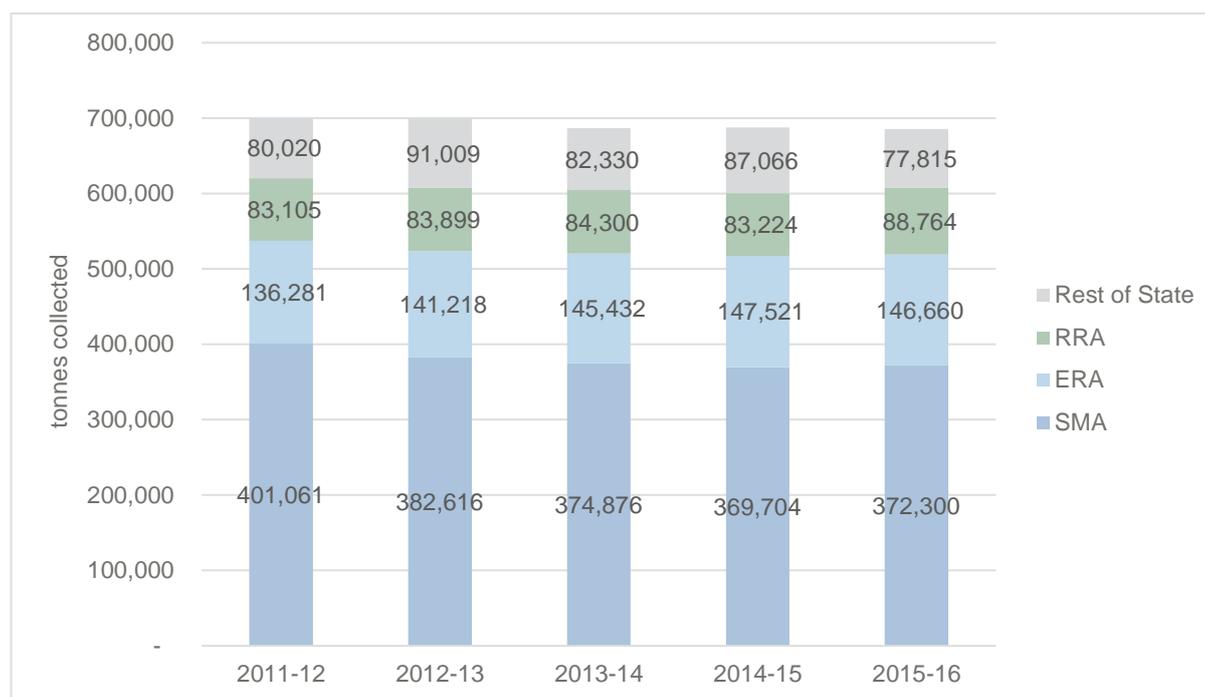
**Table 4: Dry recyclables collected per household/person by region 2015–16**

Region	No. households with Service	Annual average kg	Weekly average kg	Annual average kg	Weekly average kg
Extended Area	561,835	261.0	5.02	107.9	2.08
Rest of State	325,058	234.7	4.51	108.9	2.09

**Note:** Due to rounding and presentation of data to 1 decimal place, the multiplication of the weekly data by 52 weeks may not match the annual totals.

Graph 7 shows the weight of dry recyclables collected by kerbside collections within the four regions in comparison to the previous year. The Regional Area increased collection, however the overall NSW total remained broadly the same as the previous two years.

**Graph 7: Kerbside dry recyclables collected by region 2011–16 (tonnes)**



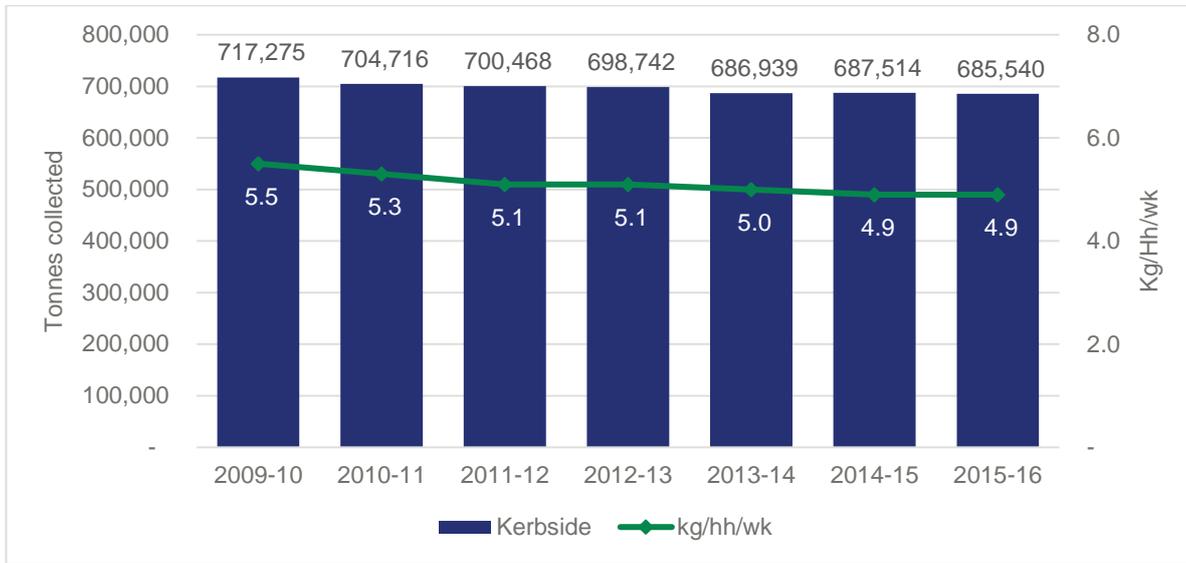
In 2015–16, the NSW dry recycling yield per household per week remained static compared to the previous year at 4.9 kg/hh/wk. However, household recycling has decreased since 2009-10, with levels reduced from 5.5 kg/hh/wk in 2009-10 compared to 4.9 kg/hh/wk in 2015-16. The main factor for the decreased weight on a household level is likely to be changes in the material streams such as reduced paper and newsprint, increased plastic packaging and light weighting of containers.

<sup>1</sup> The household average is based on the number of serviced households

<sup>2</sup> The person average is based on the total population in councils with kerbside recycling

The level of dry recyclables collected at the kerbside has held steady over the past five years as illustrated in Graph 8. Therefore any increases in overall recycling has come from non-kerbside collections, organic waste collections and AWT material recycled.

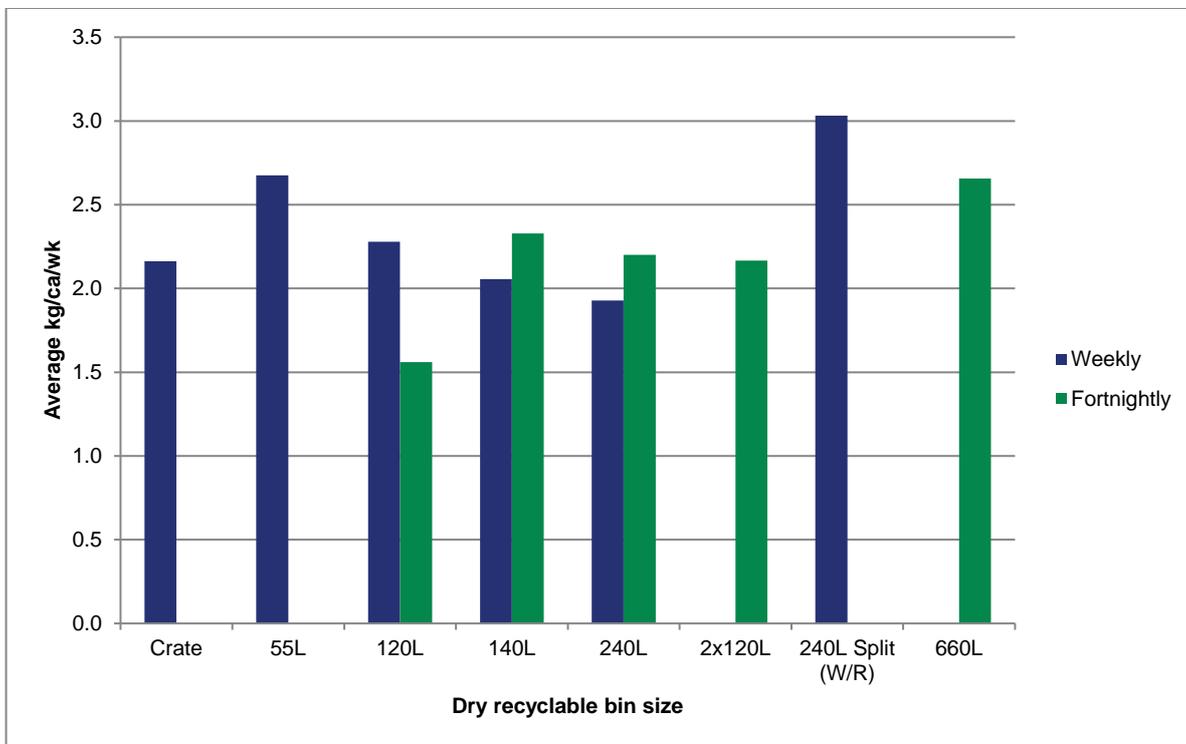
**Graph 8: Dry recyclables collected at the kerbside (total and average household yield per week) 2009–16 (tonnes)**



## 2.2. Recycling collection systems

In 2015–16 NSW councils used nine different recycling collection bin container sizes. There were 103 councils using a 240L fortnightly collection, or 79% of councils with a dry recycling collection service.

**Graph 9: Performance of recycling collection systems by size and frequency 2015–16**



Graph 9 shows the varying levels of performance reported by councils using different container sizes and frequencies. The provision of a larger container appears to contribute to a higher recycling kilograms per capita. Interestingly, recycling collected on a weekly basis per person are lower than the same size collected fortnightly, apart from the 120 litre weekly service.

Councils with a majority bin size of 660 litre per fortnight produced 2.7kg per capita per week, collection greater than the average 2.2kg per capita per week. Ten councils have a 240L weekly majority service collecting 1.9kg per capita per week, which is slightly below average.

The majority bin service per LGA is calculated from the bin system with the highest number of households using that size. Sometimes there is a difference in systems between Single Unit Dwellings (SUDs) and Multi Unit Dwellings (MUDs) and some councils have multiple different size bin options for residents. Appendix tab 7 shows each LGA average yield per household and capita.

## 2.3. Organics collected and recycled

Like dry recyclables, organics are collected through kerbside, drop-off and clean-up services. A total of 55 councils collect garden organics only and 27 councils collect food and garden organics with three councils trialling co-collecting food and garden organics (FOGO). Statewide, 67 councils did not collect organics. Household garden organics are mainly bark, leaves, twigs and lawn clippings, while the FOGO co-collection service also includes household food scraps.

Table 5 shows the organics collected at the kerbside in 2015–16. The total weight of organics collected at the kerbside increased by 16% from 476,440 in 2013–14 to 565,635 tonnes in 2015–16. From this amount, 98% was recovered, leaving only 2% of rejects and contaminants being sent to landfill. The 30 councils with collection systems accepting FOGO collected 120,002 tonnes in 2015–16, with only 3.8% contaminants sent to landfill.

**Table 5: Organics collected at the kerbside by method and by region 2015–16 (tonnes)**

	Sydney Metro	Extended Area	Regional Area	Rest of State	NSW
<b>Garden organics</b>					
Councils	28	9	7	11	55
Tonnes collected	274,571	123,041	24,920	23,102	445,633
<b>Food and garden organics</b>					
Councils	5	0	9	16	30
Tonnes collected	38,098	0	56,969	24,935	120,002
<b>Total organics</b>					
Councils	33	9	16	27	85
<b>Tonnes collected</b>	<b>312,669</b>	<b>123,041</b>	<b>81,889</b>	<b>48,037</b>	<b>565,635</b>

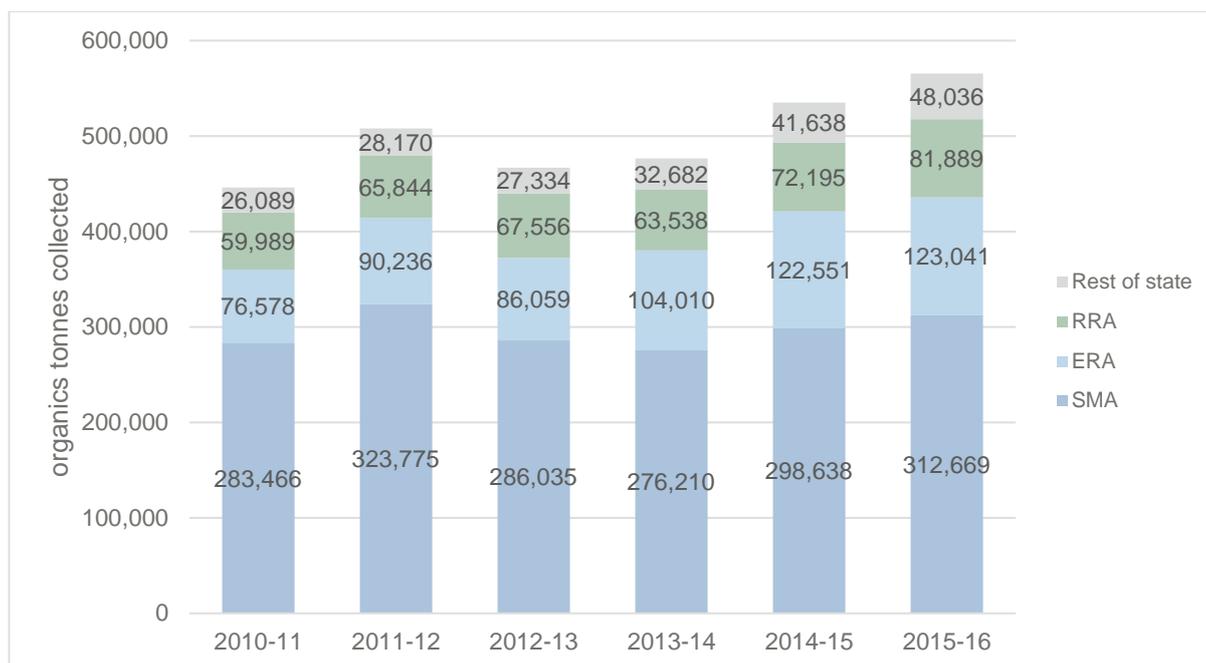


**More organics were collected from kerbside collections in 2015–16: 565,635 tonnes compared to 535,022 tonnes in 2014–15.**

Graph 10 below shows the steady increase in the organics collected by region over the past five years. There was a peak in 2011–12 for all areas, for reasons unknown. Kerbside organics collection increased by 6% (around 30,000 tonnes) compared to 2014–15. This is a rise of 11% (57,500 tonnes) compared to 2011–12.

There have been increases in all regions, with growth of 13% and 15% in the Regional Area and Rest of State respectively. Sydney Metro councils provided a kerbside service to 57.7% of all households for organics, and collected 55% (312,669 tonnes) of all kerbside organics collected in NSW. Extended Area councils provided a kerbside organics collection service to 68.7% of their households, with Regional Area at 58.7% and Rest of State at 42.4% in 2015–16.

**Graph 10: Organics collected at the kerbside by region 2010–16 (tonnes)**



**Note:** Figures are rounded to the nearest whole number

Table 6 shows the collected garden organics against the food and garden organics per household and capita weekly, at 5.93kg per household or 2.3kg per person. The Sydney Metro Area collected 6.17kg of organics per household weekly and the Regional Area collected 6.01kg, which were both higher than the State average. The Extended Area and the Rest of State was at 5.87kg and 4.23kg per household weekly respectively.

FOGO collected per household average was 7.2kg per week. Sydney Metro producing 9kg, Regional Area 8kg and Rest of State 4.6kg per household per week. The number of councils using FOGO systems has been increasing over the past four years and proving to provide a greater yield per household and capita than the regular garden organics.



**In 2015-16 there were eight more councils with FOGO collections. FOGO collected increased by 22% from 98,000 tonnes in 2014-15 to 120,000 tonnes in 2015-16.**

**Table 6: Organics collected per household<sup>3</sup> / person<sup>4</sup> by region 2015–16 (kilograms)**

Region	No. LGA	No. LGA	Household		Person	
	Organics service	FOGO service	Organics average kg/week	Fogo average kg/week	Organics average kg/week	Fogo average kg/week
Sydney Metro	28	2 + 3 trials	6.17	8.99	2.25	3.44
Extended Area	9	-	5.87		2.35	
Regional Area	7	9	6.01	8.08	2.93	3.65
Rest of State	11	16	4.23	4.64	1.95	2.12
NSW	55	27 + 3 trials	5.93	7.20	2.29	3.12

Table 7 shows 77% of kerbside organics are collected from the Sydney Metro and Extended Area. The amount of material which was sent to landfill as reject or contamination was on average 2% in NSW.

**Table 7: Organics including FOGO collected at the kerbside by region 2015–16 (tonnes)**

Region	Councils	Collected	Recycled	Disposed
Sydney Metro	33	312,669	306,380	6,289
Extended Area	9	123,041	121,941	1,100
Regional Area	16	81,889	80,068	1,821
Rest of State	27	48,036	47,104	993
<b>NSW</b>	<b>85</b>	<b>565,635</b>	<b>555,493</b>	<b>10,203</b>

## 2.4. Organics collection systems

Overall, organics-only collected decreased by 1% (7,700 tonnes) in comparison to 2014–15. Kerbside collections rose by 5.7% (30,500 tonnes), drop-off organics decreased by 17.2% (31,500 tonnes) and collections from clean-up services decreased by 19.4% or 7,700 tonnes in 2015–16.

Table 8 shows how organics were collected across NSW, with the majority by kerbside collection. In the Rest of State, the main weight of organics collected was via drop-off, probably reflective of the more limited kerbside provision in this area. In all, 745,642 tonnes of organics were collected from kerbside, drop-off and clean-up services. Of this, 120,002 tonnes were collected from FOGO services. Drop-off facilities collected 20% (151,646 tonnes) and 4% (28,361 tonnes) by clean-up services.

<sup>3</sup> The household average is based on the actual number of serviced households

<sup>4</sup> The person average is based on the households with a service pro rata to population

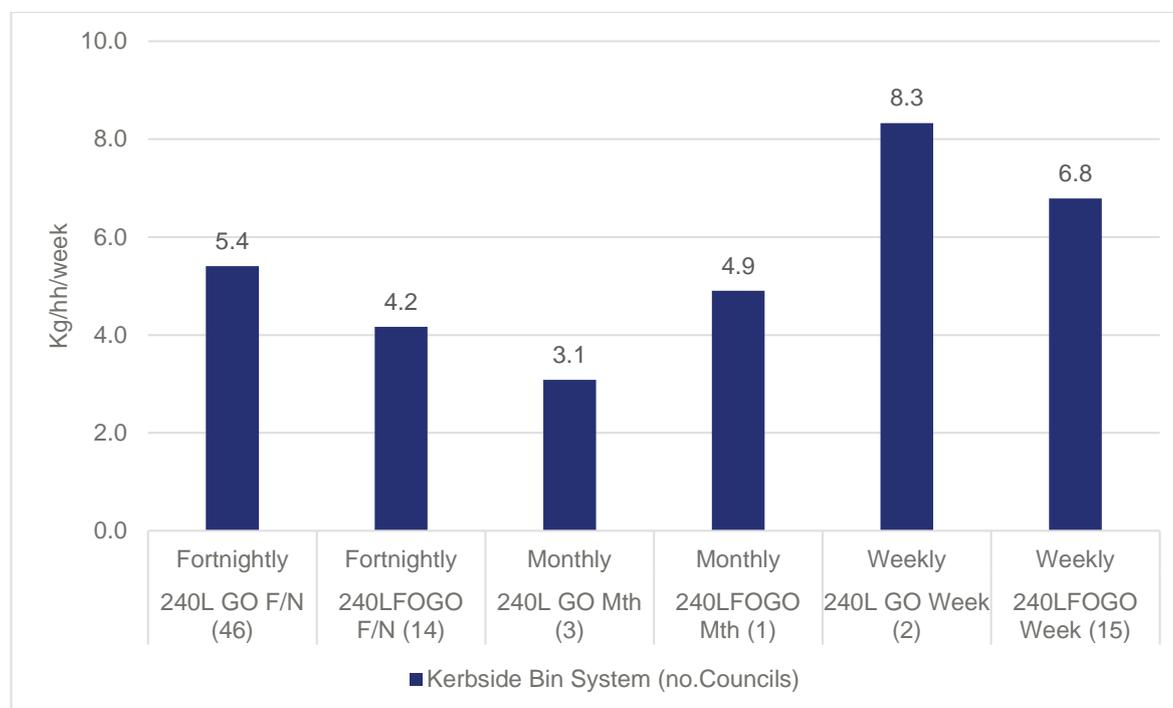
**Table 8: Organics collected by method and region 2015–16 (tonnes)**

	Sydney Metro	Extended Area	Regional Area	Rest of State	NSW
Kerbside	312,669	123,041	81,889	48,037	565,635
Drop-off	16,693	36,251	43,097	55,604	151,646
Clean-up	11,510	11,266	4,082	1,504	28,361
<b>Total tonnes</b>	<b>340,872</b>	<b>170,558</b>	<b>129,068</b>	<b>105,145</b>	<b>745,642</b>

In 81 councils the majority bin size was the 240 litre bin. Many councils use various bin sizes with varying collection frequencies to collect garden organics and FOGO. Forty-six councils use a 240 litre bin with a fortnightly garden organics collection. The average collected yield for a 240 litre fortnight garden organics collection system is 5.4kg per household per week.

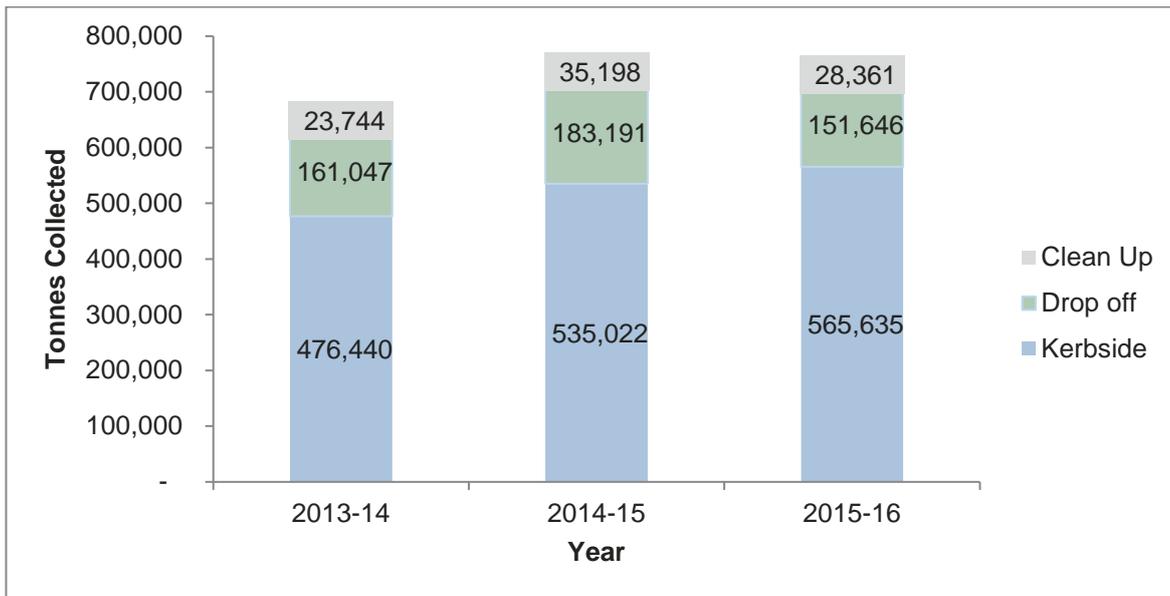
Councils with a FOGO 240 litre weekly service collected an average of 6.8kg per week per household.

**Graph 11: Collection systems average yield per household per week 2015–16 (kilograms)**



Graph 12 shows the amount organics collected across all collection methods. The most notable increase is in kerbside collections.

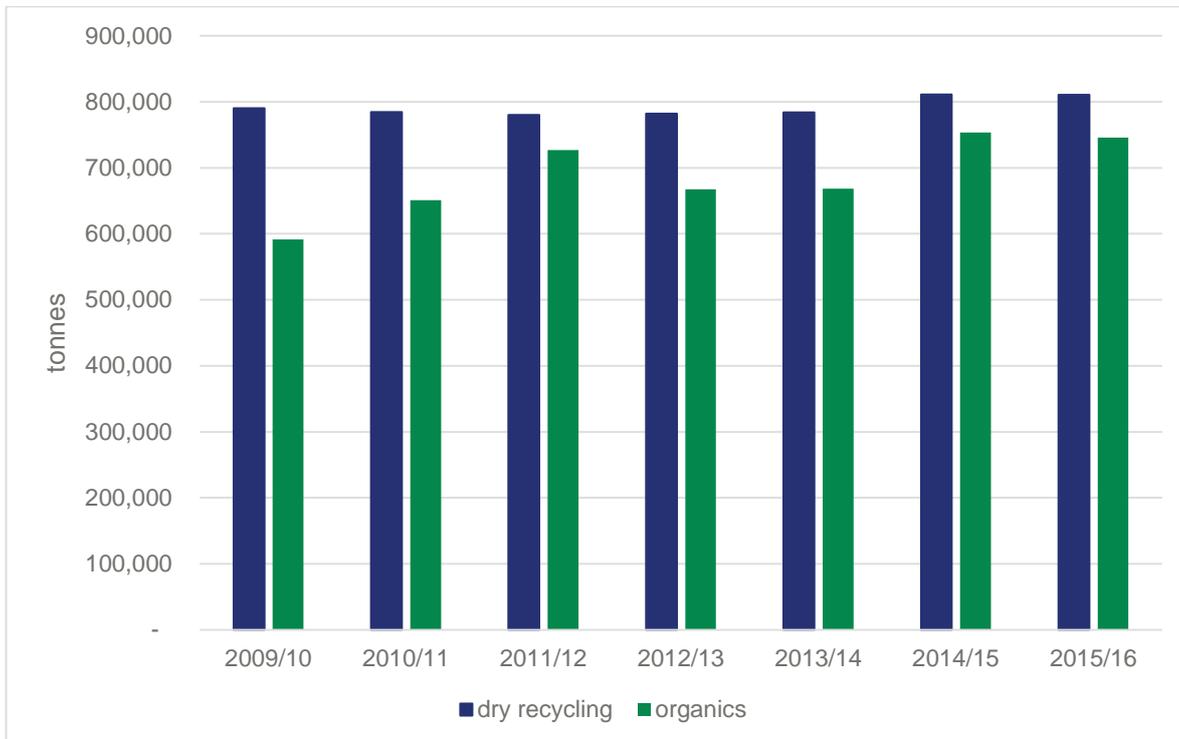
**Graph 12: Kerbside organic collected by method 2013–16 (tonnes)**



**Note:** Figures are rounded to the nearest whole number

Graph 13 shows that the amount of dry recyclables collected year-on-year is stable but there is a linear increase over time in the quantity of organics collected.

**Graph 13: Dry recyclables and organics collected by year 2009–16 (tonnes)**



# 3. Residual waste

Residual waste is the remaining waste 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 AWT facility before disposal, or
- sent directly to landfill.

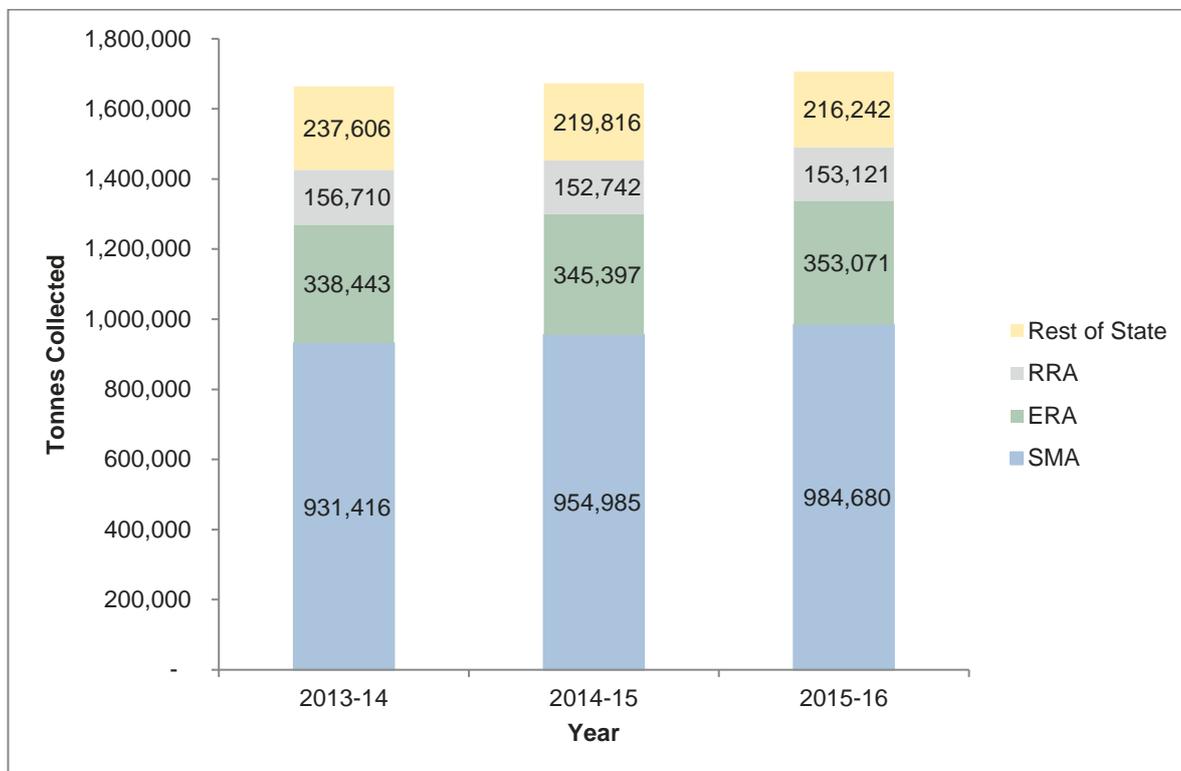
NSW residents disposed of 1,945,006 million tonnes of residual waste to landfill. This figure includes:

- residual waste collected at the kerbside and sent direct to landfill (1,199,862 tonnes)
- residual waste from drop-off centres (229,515 tonnes)
- residual waste, recycling and organics from clean-up collections (178,667 tonnes)
- rejects from AWT sent to landfill (247,732 tonnes)
- rejects from dry recyclables sent to landfill from kerbside and drop-off methods (67,221 tonnes)
- rejects from organics sent to landfill from kerbside and drop-off methods (22,009 tonnes)

## 3.1. Kerbside residual waste collected and recycled

In 2015–16 the total amount of waste collected from kerbside residual waste collections increased by 2% from the previous year to 1,707,115 tonnes. This figure includes 1,199,862 tonnes sent directly to landfill and 507,253 tonnes sent to AWT facilities. Graph 14 shows that the decreases were in the Sydney Metro and Extended Area, with Regional Area and Rest of State increasing slightly.

Graph 14: Kerbside residual waste collected by region 2013–16 (tonnes)



**Note:** Figures are rounded to the nearest whole number

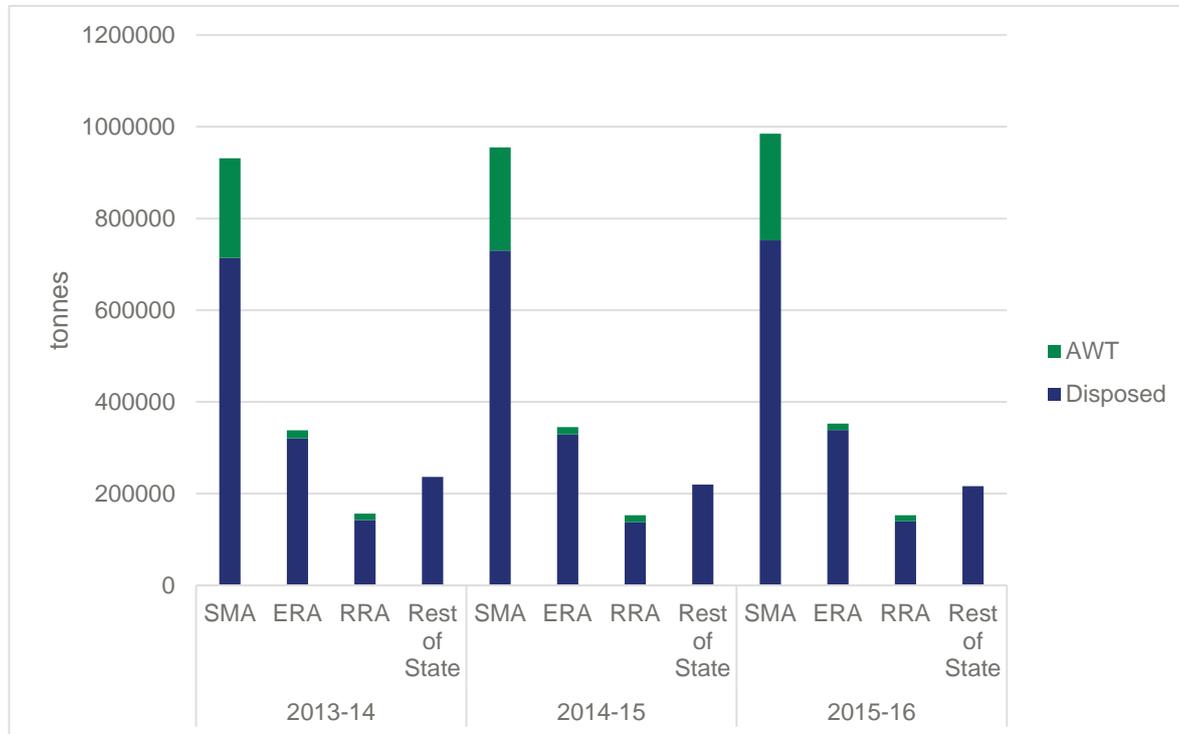
In Sydney Metro, 38 councils provide kerbside collection services to 99% of the total households. The Extended Area serves 96% of its households, the Regional Area 88%, and Rest of State 86%.



**Twenty councils sent 507,000 tonnes of kerbside residual waste to an AWT facility where 51.2% was processed to be recycled and 48.8% was sent as reject.**

Graph 15 shows the residual waste collected by region and the amount sent to an AWT facility. The SMA generated 57% of the NSW tonnes disposed.

**Graph 15: Kerbside residual waste by end destination by region 2013–16 (tonnes)**



The average created by each household increased by 0.2kg to 11.9kg weekly in 2015–16. Of the 151 councils with residual waste collection services, 20 sent some or all of their kerbside residual waste to an AWT facility. From the created waste, 259,520 tonnes (51.2%) were recovered by AWT (see Appendix 9 for more detail).

**Table 9: Kerbside residual waste collected per household/person by region 2015–2016 (kilograms)**

Region	Councils	Household		Person	
		Average annual kg	Average weekly kg	Average annual kg	Average weekly kg
Sydney Metro	38	655.7	12.6	241.7	4.6
Extended Area	13	634.0	12.2	261.6	5.0
Regional Area	21	480.7	9.2	221.9	4.3
Rest of State	79	568.3	10.9	267.2	5.1

The total amount of kerbside residual waste generated was 1,707,115 tonnes in 2015–16, up by around 34,000 tonnes in comparison to 2014–15. In the Rest of State, the amount of residual waste generated per person and amount generated per household each week decreased from 2014-15, despite the slight rise in generation.

The number of households with kerbside waste services was 2.76 million, covering 90% of households in NSW, 92% in Sydney Metro, 95% in ERA, 87% Regional Area and 77% in Rest of State. The Sydney Metro collects 58% of residual waste, ERA 20% and with remaining 22% combined Regional Area and Rest of State.



**Avoid and reduce waste generation: per household average residual waste has held level since 2010-11.**

## 3.2. Collection systems

Councils report using one of eight different residual waste collection systems. In total 72 councils used 120-litre or 140-litre bins, collected weekly. A total of 60 councils used 240-litre bins, collected weekly, with 44 of the 60 councils in the Rest of State area. Table 10 shows the different systems used, based on the main wheeled bin size and most common collection frequency in each council area.

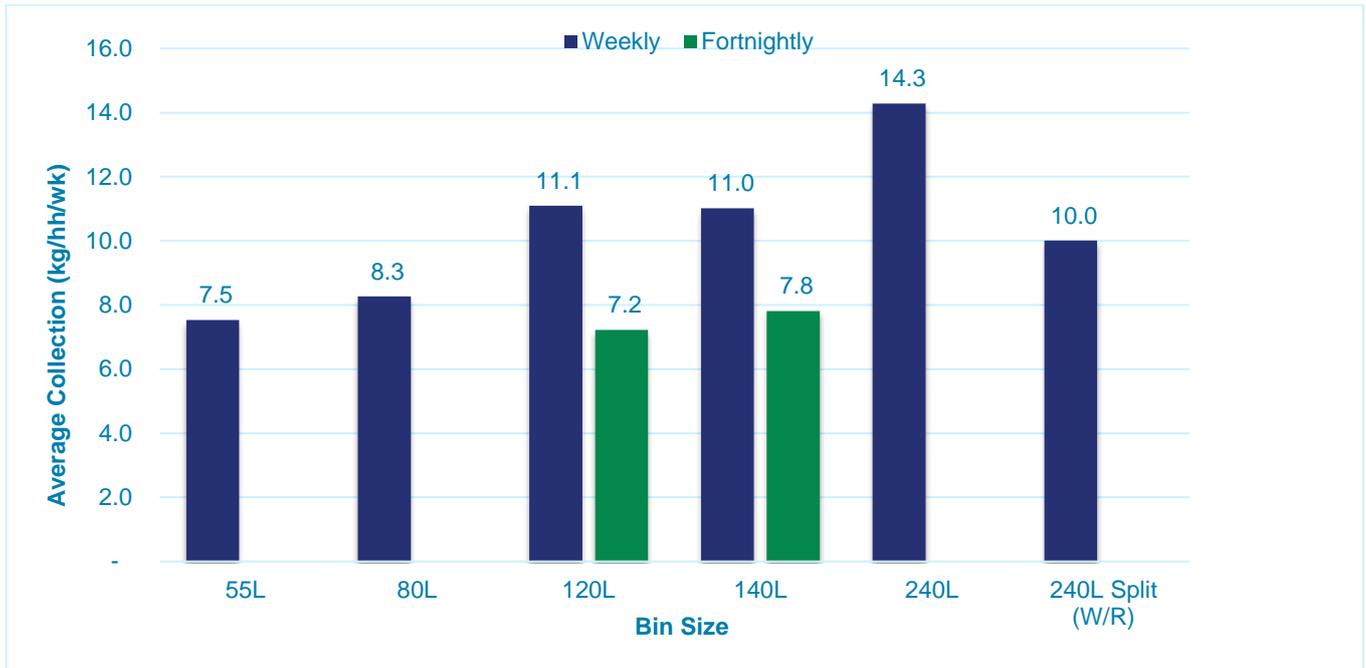
The results in Table 10 show that the larger bin and more frequent collection the more residual waste is generated. The 240-litre bin collected weekly produced 14.3kg per household, 2.4kg per week more than the State average of 11.9kg. This is mainly used in the Rest of State, where there are fewer recycling or organics kerbside collection systems in place. Across NSW 40% of councils use a 240-litre bin weekly as their predominant system.

**Table 10: Councils/kerbside residual waste collection systems by region 2015–16 (kilograms)**

Bin size	Frequency	Sydney Metro	Extended Area	Regional Area	Rest of State	NSW	Average kg per household	
No. Councils							Year	Week
55 L	Week	1	-	-	-	1	392	7.5
80 L	Week	4	1	-	1	6	430	8.3
120 L	Week	16	3	1	10	30	577	11.1
140 L	Week	11	3	6	22	42	573	11.0
240 L	Week	5	5	6	44	60	743	14.3
240 LSplit	W/R week	-	-	1	-	1	521	10.0
140 L	Fortnight	1	-	2	1	4	375	7.2
240 L	Fortnight	-	1	5	1	7	406	7.8
No service		-	-	-	1	1		
<b>Total</b>	<b>Avg. Weekly</b>	<b>12.6</b>	<b>12.2</b>	<b>9.3</b>	<b>10.3</b>	<b>151</b>	<b>619</b>	<b>11.9</b>

Graph 16 shows the correlation between bin size and residual waste generation, with a reasonably clear pattern that a larger bin and more frequent collection results in a larger amount of residual waste.

**Graph 16: Average residual waste collected by collection system 2015–16 (kilograms)**

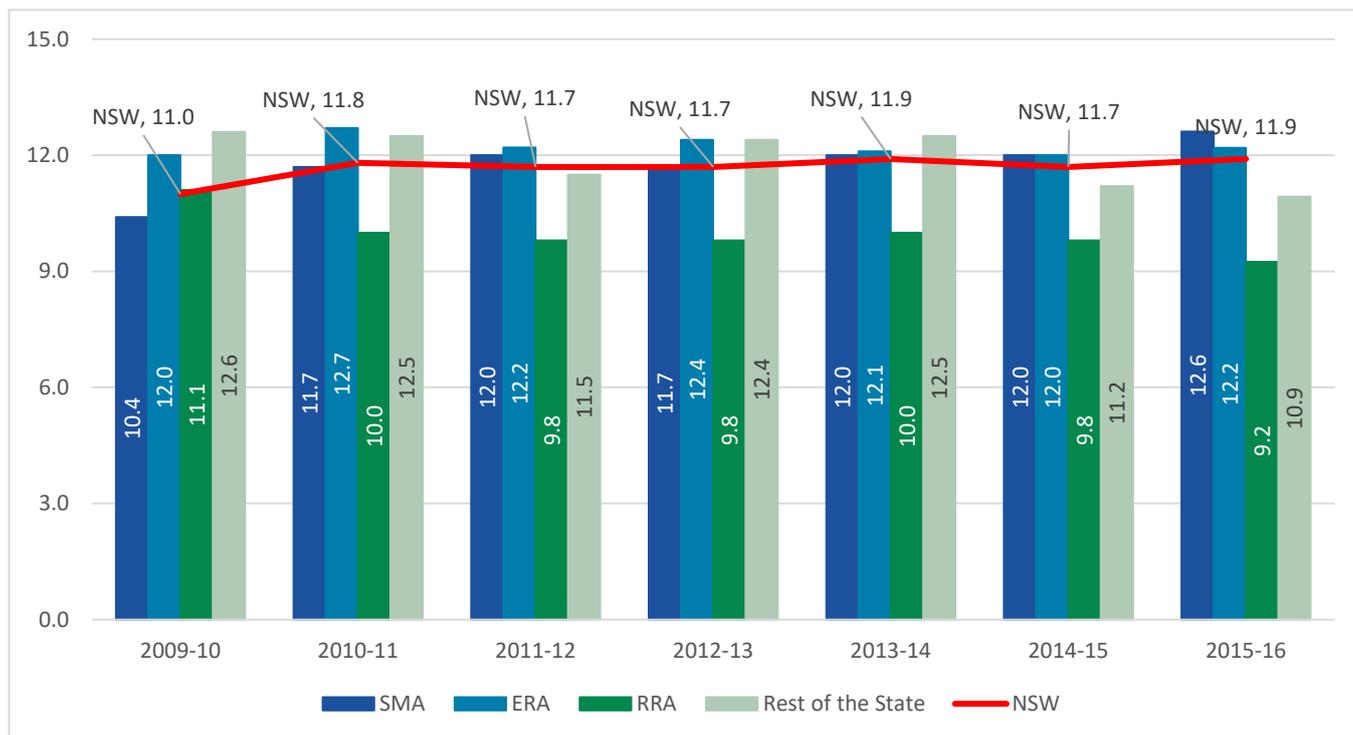


The amount of residual waste generated by households each week has been broadly the same over the past five years, as illustrated in Graph 17.

There have been some consistent patterns observed, such as the Sydney Metro and Extended Regional Area producing slightly above the State average of 11.9, at 12.6 and 12.2kg per household per week respectively.

The average weekly residual waste per household has remained level since 2010–11, rising slightly to 11.9kg in 2015–16. This equates to an average of 4.7kg per person per week in 2015–16 across NSW. The Regional Area continued to create the least amount of residual waste in the State, 9.2kg per household weekly.

Graph 17: Average household weekly residual waste by region 2010–16 (kilograms)



# 4. Disposal to landfill

## 4.1. Waste streams

As set out in section 3, waste sent to landfill can come from a variety of collection methods. It can be sent there directly from the residual waste collections from kerbside, drop-off or clean-up; or, the rejects from the recycling systems offered alongside each of these systems. Alternatively, it can arrive as rejects from AWT facilities, which processes the kerbside collected residual waste first to recover a proportion of recyclable material before continuing to landfill.

In 2015-16, NSW residents sent 1,945,006 tonnes of domestic waste to landfill. This is a 1.4% increase from 2014-15 total of 1,917,965 tonnes. The Sydney Metro councils sent 47.4% of this (922,359 tonnes) to landfill, followed by the Extended Area councils who sent 449,790 tonnes (23.1%).

Although the tonnage has increased Graph 18 shows the average per household per week has stayed fairly level from 2010-11.

Graph 18 shows the breakdown of where the material sent to landfill originated from.

Graph 18: Tonnes sent to landfill from waste stream/collection method by region 2015-16

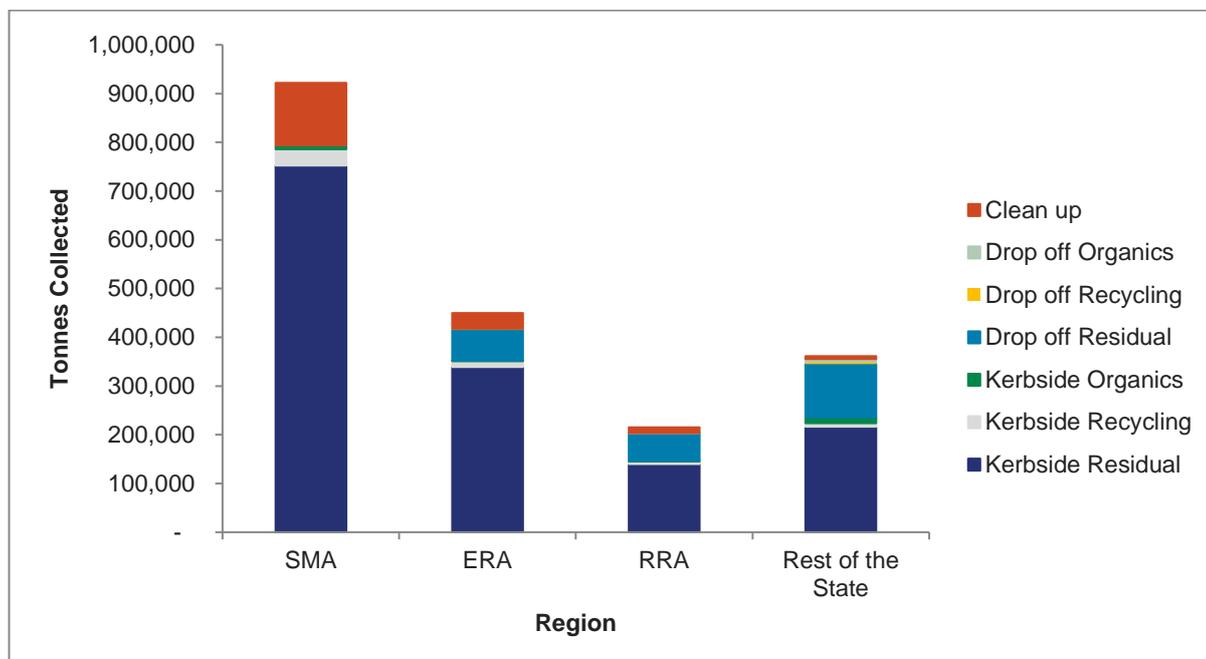
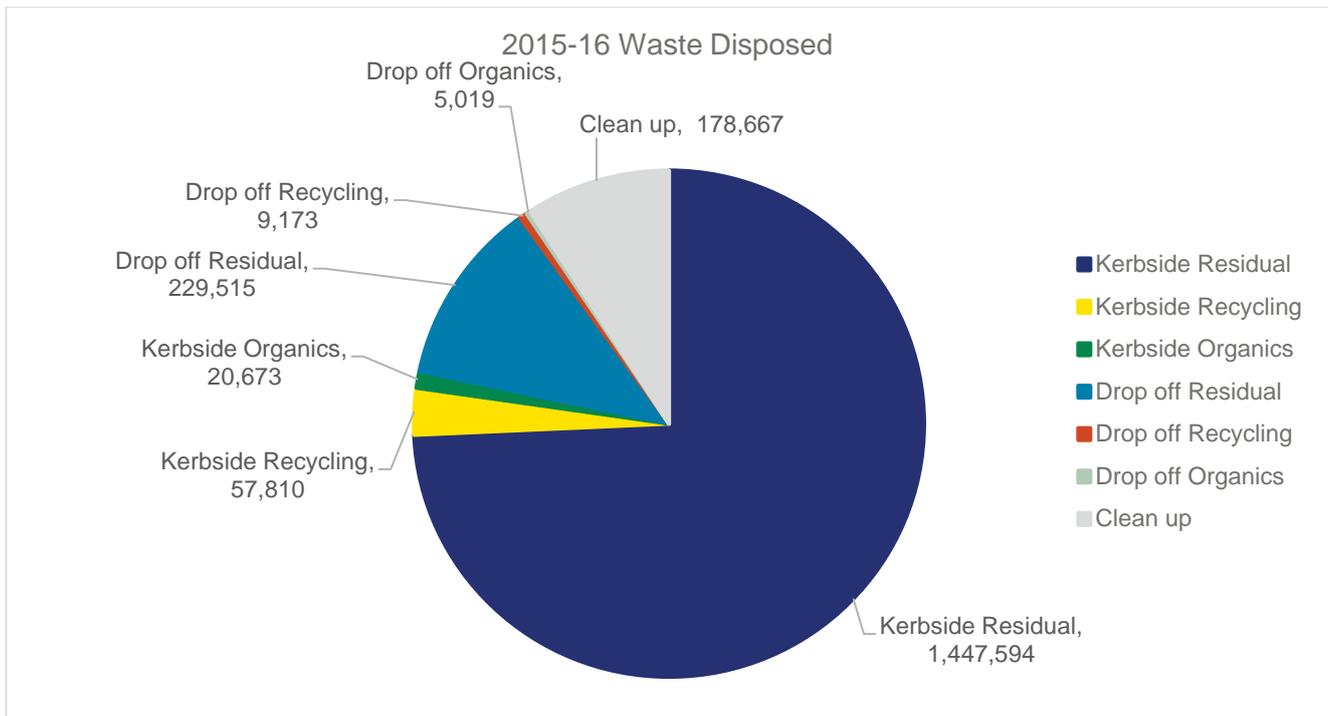


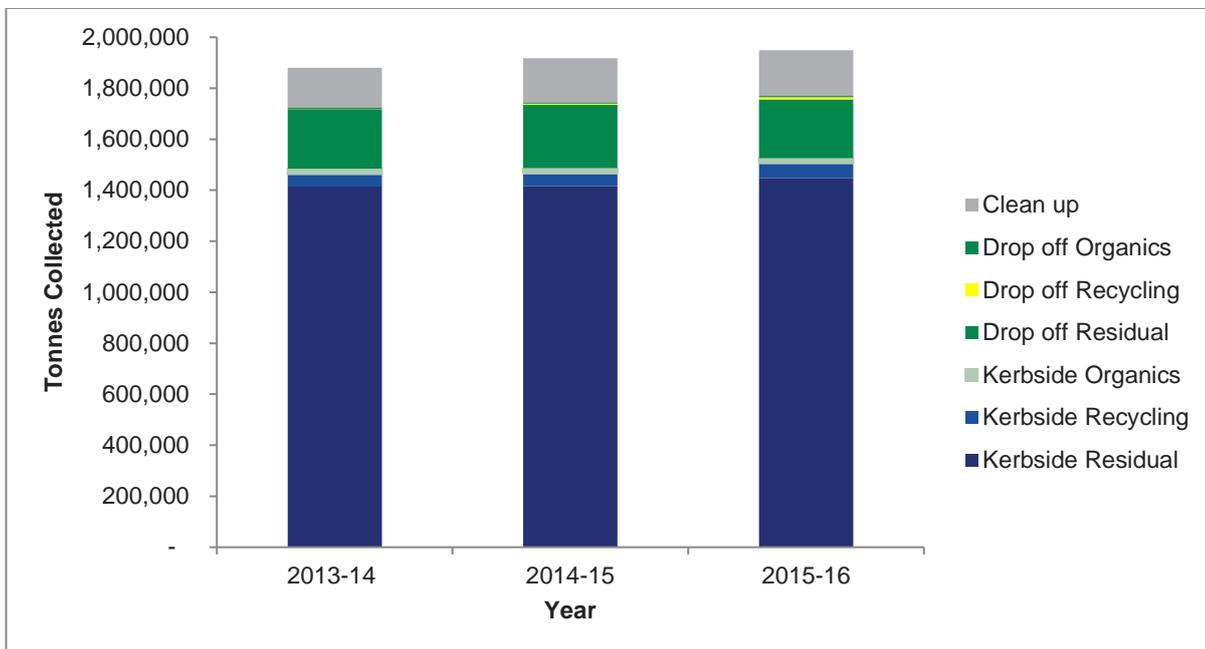
Diagram 1 shows the amount of residual waste disposed to landfill, including AWT disposal plus rejects from recycling and organic process. Contaminants from dry recycling and organics, collected at kerbside make up 3.8% (74,846 tonnes) of the total. Drop off contaminants make up 12.5% (243,899 tonnes). Clean up contaminants make up 9.2% (178,667). Clean-up waste disposed includes primarily bulky goods and hard waste.

**Diagram 1: Total domestic waste sent to landfill by collection/waste stream 2015–16 (tonnes)**



Graph 19 shows there has been only marginal changes in the amount and proportion of residual waste sent to landfill by collection method and stream since 2013, although there is an increase in the total weight of material sent to landfill. Kerbside residual and contaminants from kerbside and drop-off recycling increased in 2015-16.

**Graph 19: Domestic waste disposed to landfill by collection method/waste stream (tonnes)**

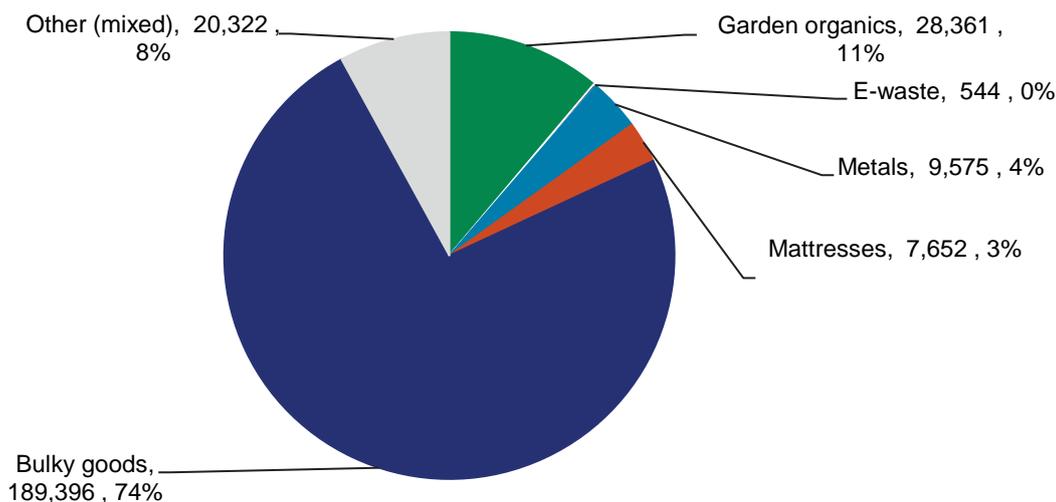


# 5. Clean-up services

## 5.1. Waste collected by clean-up services offered by councils

In 2015–16, 255,850 tonnes were collected from council kerbside clean-up services. Bulky goods made up 74% (189,396 tonnes), mixed other goods made up 8% (20,322), followed by garden organics at 11% (28,361 tonnes). The remaining 7% were dry recyclables, e-waste, white goods, mattresses and metals (17,771 tonnes).

Diagram 2: Kerbside clean-up waste by material type



Across NSW, 90 councils provided kerbside clean-up services but access to the services varied:

- 38 councils or 100% of all councils in the Sydney Metro Area
- 11 councils or 85% of all councils in the Extended Area
- 15 councils or 71% of all councils in the Regional Area
- 26 councils or 33% of all councils in the Rest of State area.



**30% of the 255,850 tonnes collected by clean-up services were recycled.**

Table 11 shows the weight of source-separated material collected separately from residual waste. Of the 255,850 tonnes collected from kerbside clean-up services, 77,183 tonnes were recycled and 178,667 tonnes went to landfill. The recycling rate from kerbside clean-up services was 30% in 2015–16.

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

**Table 11: Tonnes of source separated clean-up materials by type 2015–16**

Material type	Collected	Recycled	Disposed	Recycled <sup>5</sup>
Garden organics	28,361	28,286	75	99.7%
E-waste	544	544	0	100%
Metals	9,575	9,465	110	98.9%
Mattresses	7,652	7,606	46	99.4%
Bulky goods	189,396	25,137	164,259	13.3%
Other (mixed)	20,322	6,145	14,177	30.2%
<b>Total</b>	<b>255,850</b>	<b>77,183</b>	<b>178,667</b>	<b>30.2%</b>

**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.



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

Table 12 shows a significant variation between regions in the weight of material collected 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 24.8% was recycled. Conversely, the Rest of State collected the least weight, but proportionally recycled the greatest proportion of the material collected.

**Table 12: Tonnes of bulk waste clean-up materials by area 2015–16**

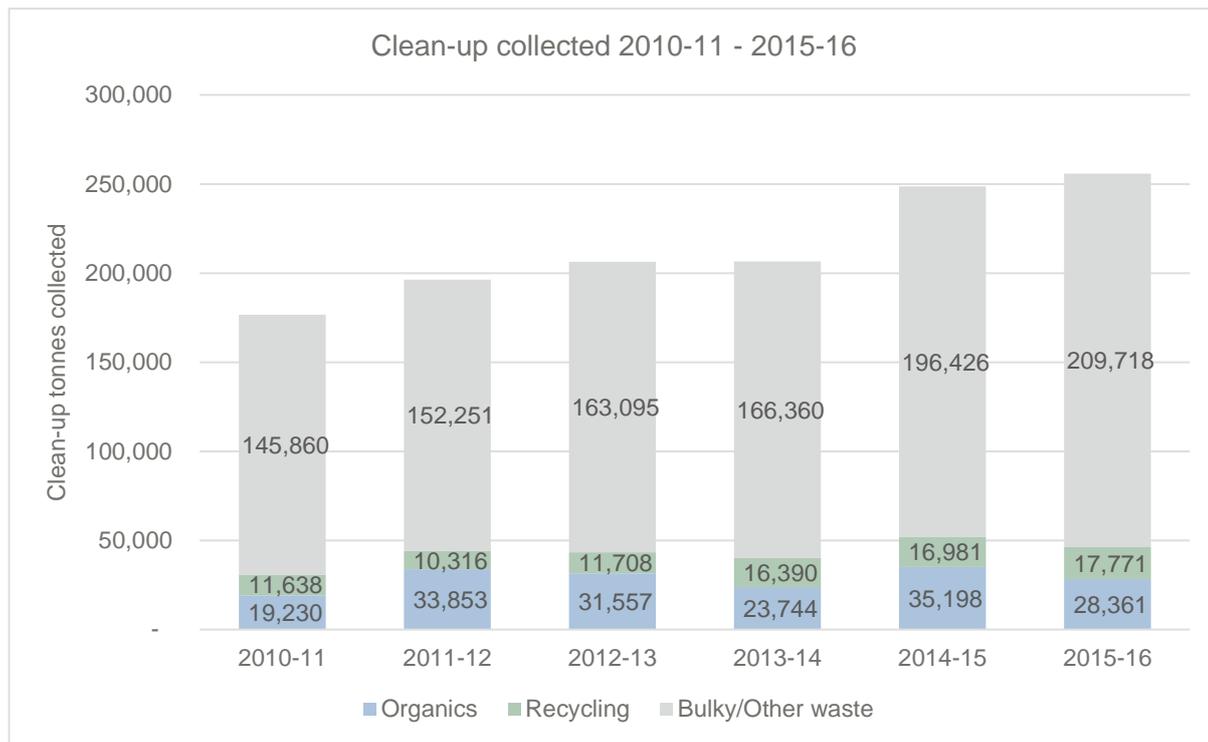
Region	Councils	Collected	Recycled	Disposed	% Recycled
Sydney Metro	38	171,406	42,457	128,949	24.8%
Extended Area	11	57,991	25,758	32,233	44.4%
Regional Area	15	17,650	6,148	11,502	34.8%
Rest of State	26	8,803	2,820	5,983	32.0%
<b>NSW</b>	<b>90</b>	<b>255,850</b>	<b>77,183</b>	<b>178,667</b>	<b>30.2%</b>

The 38 Sydney Metro councils collected 67% of the State's total material from clean-up services (171,406 tonnes), but only recovered 24.8% of it (42,457 tonnes). Clean-up tonnes had a 3% increase from last year and recycled 1% more.

Graph 20 shows the steady increase in garden organics, bulky goods and other (mixed waste) since 2010.

<sup>5</sup> Due to the low weight in the disposed column in comparison to the weight of total waste collected, the percentage recycled in some instances is rounded up to 100%, even though a small amount of the material is disposed.

**Graph 20: Kerbside clean-up majority waste materials 2010–16 (tonnes)**



**Note:** Figures are rounded to the nearest whole number

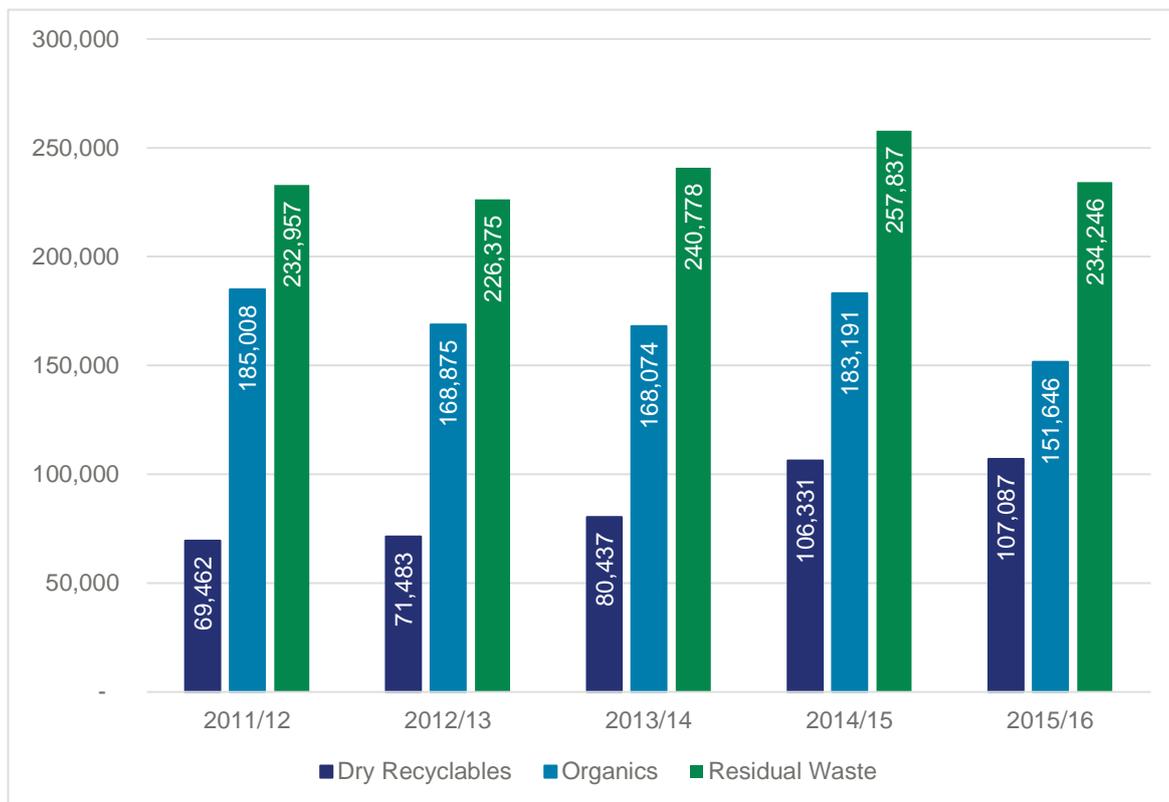
# 6. Drop-off facilities

## 6.1. Waste dropped off at a facility by residents

Graph 21 shows that residents took 492,979 tonnes of material to drop-off facilities in 2015–16. Across NSW, 123 council areas offered some sort of drop-off facility for residents. Graph 21 shows residual waste collected was 234,246 tonnes and organics 151,646 tonnes. Both amounts were less than the previous two years. Dry recyclables continue to increase, at 107,087 tonnes in 2015-16. Overall there was 10% less material collected at drop-off centres in NSW.

The community Recycling Centres (CRC's) collected 599 tonnes of problem waste material. This was across 29 councils with an 88.4% recycling rate.

Graph 21: Drop-off received by waste stream 2011–16 (tonnes)



Graph 22: Drop-off material received by waste stream 2015–16 (tonnes)



Table 13: Drop-off service provisions by region 2015–16 (tonnes)

Region	Councils	Collected	Recovered	Disposed	%Recycled
Sydney Metro	25	21,564	20,237	1,327	93.8%
Extended Area	13	128,259	62,584	65,675	48.8%
Regional Area	21	134,354	77,330	57,024	57.6%
Rest of State	64	208,802	88,929	119,873	42.6%
<b>NSW</b>	<b>123</b>	<b>492,979</b>	<b>249,080</b>	<b>243,899</b>	<b>50.5%</b>

# Terms

## **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

## **Recyclables**

Dry recyclable and organic waste material which is not residual waste

## **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.

## **Waste stream**

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

## **Recycling rates**

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

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

## **Dry recyclables**

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.

## **Residual waste**

Waste created by domestic activity, less recyclables and organics.