NSW Waste Avoidance and Resource Recovery Strategy
Progress Report 2014–15

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Published by:

NSW Environment Protection Authority
59 Goulburn Street Sydney
PO Box A290
Sydney South NSW 1232

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ISBN 978-1-925688-07-8
EPA2017P0083

July 2017

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Overview

Introduction

This progress report summarises the improvements New South Wales has made towards meeting the targets set out in *NSW Waste Avoidance and Resource Recovery Strategy 2007* ('2007 WARR Strategy'). It also highlights any areas where more effort is needed. In this report, we are working towards the targets set for 2014.

This report outlines how much waste in NSW has been created, sent to landfill and recycled by waste stream and area. It covers the three main waste streams: municipal solid waste, commercial and industrial (C&I) waste and construction and demolition (C&D) waste.

The *Waste Avoidance and Resource Recovery Act 2001* ('WARR Act') requires the NSW Environment Protection Authority (EPA) to report every two years on progress towards meeting the WARR Strategy targets. This biannual report shows NSW waste and recycling compared with previous progress reports using the same methodology.

The new data in this report is from 2014–15. Please note that data about material recovery relies on voluntary reporting by companies in surveys conducted by consultants. Accordingly, figures showing changes in regional or material recycling rates must be treated with caution as there may be some variation in this reporting over time which is not accounted for in the data collection or analysis.

2007 WARR Strategy targets

This progress report is the first since the 2014 target year passed and as such is the first opportunity to measure the state's progress against the targets set in 2007.

Key result areas	Targets
Key area	**Target**
1. Increasing recovery and use of secondary resources	By 2014, increase recovery and use of materials from the **municipal** waste stream, from 26% in 2000 to 66% in 2014. By 2014, increase recovery and use of materials from the **commercial and industrial** waste stream, from 28% in 2000 to 63% in 2014. By 2014, increase recovery and use of materials from the **construction and demolition** sector, from 65% in 2000 to 76% in 2014.
2. Preventing and avoiding waste	Hold level the total waste generated for 5 years from the release of Waste Strategy 2003.
3. Reducing toxic substances in products and materials	By 2014, phase out priority substances in identified products as a first choice or, if not possible, achieve maximum recovery for re-use.
4. Reducing litter and illegal dumping	By 2014, reduce the total amount of **litter** reported yearly. By 2014, reduce the total tonnes of **illegally dumped** material reported by regulatory agencies and regional illegal dumping squads yearly.

Progress towards the 2007 WARR Strategy targets

Target 1: Increasing recovery and reuse of secondary resources

Significant progress has been made in recycling since 2002–03, despite a shortfall in meeting the 2014 targets.

2007 WARR Strategy target

By 2014, increase recovery and reuse of materials from:

- the municipal waste stream to 66%
- the commercial and industrial waste stream to 63%
- the construction and demolition sector to 76%.

Key findings

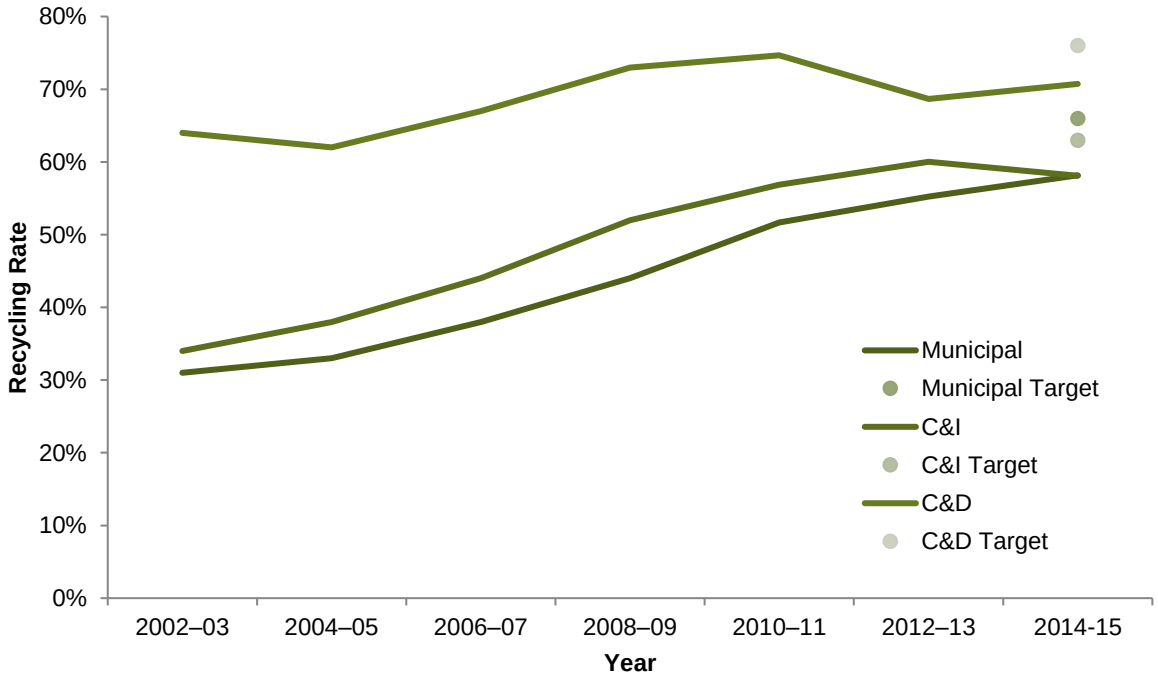
The community has made good progress in recycling and reusing waste since the original 2003 WARR Strategy was released and the 2014 targets were set in 2007. Table 1 and Figure 1 demonstrate the encouraging recycling performance of all three waste streams, particularly municipal and C&I. However, while recycling rates have climbed towards the 2014 targets in the WARR Strategy, all ultimately fell short of their respective targets.

Table 1: Progress towards the recycling targets by waste stream

	2002–03*	2004–05	2006–07	2008–09	2010–11	2012–13	2014-15	2014 target
Municipal	30%	33%	38%	44%	52%	55%	58%	66%
C&I	34%	38%	44%	52%	57%	60%	58%	63%
C&D	64%	61%	67%	73%	75%	69%	71%	76%
Overall	45%	46%	52%	59%	63%	62%	63%	

* First WARR Strategy established

Figure 1: Progress towards the recycling targets by waste stream



Since the last progress report, the recycling rate for the municipal and C&D waste streams improved 2.9% and 2.1% respectively but there was a fall of 1.9% for the C&I stream compared with 2012–13. The recycling rates for each waste sector in 2014–15 were 58.2% for municipal, 58.1% for C&I and 70.7% for C&D.

The overall recycling rate for NSW stood at 62.8% in 2014–15, equal to diverting 10.4 million tonnes of material from landfill. The recycling rate has grown 18% from the 45% recorded in 2002–03 and was up 0.7% from the last progress report in 2012–13.

Sector by sector:

- the municipal recycling rate has increased every year since 2002–03 and the sector would need to recycle an additional 425,000 tonnes to achieve the 66% target of 2014, based on current municipal waste generation
- the C&I sector would need to recycle an additional 244,000 tonnes to achieve the 63% target of 2014, based on current C&I waste generation
- the C&D sector would need to recycle an additional 326,000 tonnes to achieve the 76% target of 2014, based on current C&D waste generation

The 2007 targets were ambitious and partly based on an expectation that more AWT (alternative waste technology) facilities would come on stream. This, together with changes in regulation and restrictions on the application of waste to land rendered the modeled target figures overly high.

Other factors since 2007 included improvements in packaging with resultant lightweighting and a decrease in the use of print media in the digital age. The higher recycling rates achieved should not be underestimated, however as significant changes in regulations and greater investment in infrastructure have laid the platform for increased recycling in the future.

The return from investment in infrastructure projects through the *Waste Less, Recycle More* initiative is not reflected in this report as many of these projects are yet to be completed. More details on this major NSW waste funding initiative are provided later in this chapter and elsewhere in this report.

Target 2: Preventing and avoiding waste

Despite economic growth, total waste created per capita has fallen.

2007 WARR Strategy target

Hold the level of total waste generated for five years from the release of the 2003 Waste Strategy

Key findings

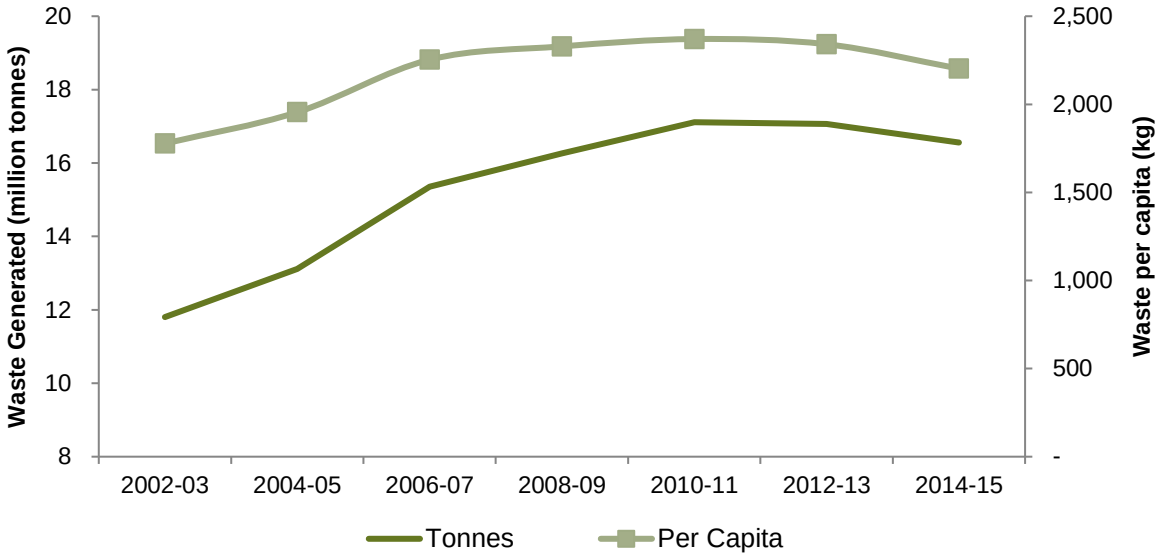
Waste generation calculations only include materials historically collected for this report, namely the amount of waste disposed to landfill plus the amount of recycling and these are totalled to equal waste generation.

Waste creation is generally linked to population growth and economic activity. Between 2012–13 and 2014–15, NSW gross state product grew from 1.8% to 2.4%,[1] while population increased from 7.4 to 7.5 million. Despite this, total waste generation fell from 17.1 million tonnes to 16.6 million tonnes, resulting in total waste produced per capita down significantly from 2,341 to 2,203 kilograms, as shown in Figure 2.

[1] http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/5220.0Main%20Features22012-13?opendocument&tabname=Summary&prodno=5220.0&issue=2012-13&num=&view

Overall, waste generated rose from 11.8 million tonnes in 2002–03 to a high of 17.11 million tonnes in 2010-11 and has fallen ever since. By 2014–15, this meant a decrease of 168 kg per capita from 2010–11.

Figure 2: Total waste generated and waste per capita in NSW – 2002–03 to 2014–15



As Figure 2 shows, total waste generated and waste per capita increased from 2002–03 to 2010–11, but since then, recorded levels have been in slow decline. In 2014–15, total waste generated was 550,000 tonnes less than in 2010-11 while waste per capita fell from the earlier 2,370 to 2,203 kilograms over the same period. Waste generation in this report includes 327,000 tonnes sent interstate for disposal and recycling. (260,000 t C&D, 45,000 t MSW, 22,000 t C&I)

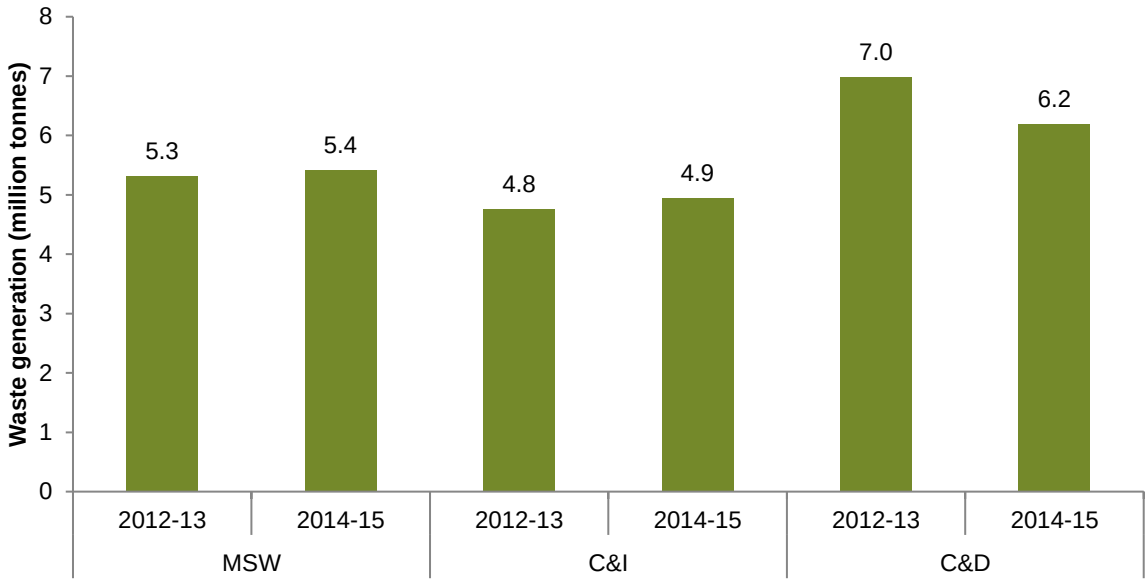
By holding the overall waste generation in 2014–15 to the 2010–11 level, NSW has achieved the target established in the 2007 WARR Strategy.

Figure 3 shows that, in 2014–15, total municipal waste generated increased by 106,500 tonnes from 2012–13, C&I total waste increased by 183,000 tonnes and C&D sector waste fell by 793,000 tonnes.

This represented a lower or steady per capita rate for each stream compared with 2012–13: municipal waste down from 730 to 721 kg; C&I steady at 658 kg (653 kg previously); and a fall from 958 to 823 kg per capita for C&D waste.

The main factors for reduced waste generation across the state in 2014–15 – a drop in C&D waste to landfill (375,000 tonnes) and less C&D recycling by 415,000 tonnes – down from a high in 2012-13 as a result of the Barangaroo and Darling Harbour developments.

Figure 3: Waste generated by waste stream – 2012–13 and 2014–15



Target 3: Reducing toxic substances in products and materials

Ongoing Household Chemical CleanOuts and a growing network of community recycling centres are recovering and managing problem waste.

2007 WARR Strategy target

By 2014, phase out priority substances in identified products as a first choice or, if not possible, achieve maximum recovery for reuse.

Key findings

The EPA is directly involved in the safe recovery and treatment of household problem waste products and materials through its Household Chemical CleanOut program (for high-toxicity wastes) and Community Recycling Centres Program (for low-toxicity wastes).

Between 2003 and 2014–15, the CleanOut program has supported over 360,000 NSW households with more than 13,900 tonnes of hazardous household waste been collected during the lifetime of the program. In 2014–15 alone, the service received more than 1,900 tonnes of toxic problem wastes through 148 collection events involving over 50,100 households.

To reduce problem wastes, NSW has worked with a range of bodies, including all governments from local to federal, as well as industry groups and the broader community. Key highlights since the last progress report have been:

- support for new and existing product stewardship initiatives and laws
- the opening of another 18 community recycling centres to help households manage their problem waste (with a total network of 101 centres planned).

Target 4: Reducing litter and illegal dumping

Litter and illegal dumping rose, but remained within a long-term downward trend.

2007 WARR Strategy targets

By 2014, reduce the total amount of litter reported yearly.

By 2014, reduce the total tonnes of illegally dumped material reported by regulatory agencies and regional illegal dumping squads yearly.

Key findings

Litter

The 2014–15 National Litter Index shows the number of littered items in NSW fell by 21% compared with 2012–13, and by 40% since 2005–06. The volume of litter was down 8% from 2012–13, while the national figure fell 6%. NSW litter volume is 38% lower than in 2005-06 compared with a national reduction 35% over the same period.

Through the *Waste Less Recycle More* initiative, $20 million in funding was committed by the NSW Government to revitalise litter reduction to 2017. Action has been focused on four 'pillars' of litter prevention which need to be delivered in an integrated program to achieve the most effective litter reduction:

1. ***Education and awareness***: In April 2014, the first *Hey Tosser!* statewide litter campaign went live, followed up in April 2015 by Phase 2 of the campaign. The campaign calling on the community to 'put it in the bin' and 'take your rubbish with you' was seen on TV, billboards in print and heard on radio. In 2015 a new message was added to 'report littering to the EPA'.

2. ***Enforcement:*** In February 2015, the EPA launched a new "Report to EPA" system inviting community members to report littering from vehicles. The EPA can issue fines based on community reports, contrasting with the previous system where the EPA could only issue warning letters. The new reporting avenue resulted in an immediate and enthusiastic take-up by the community. 7,111 people registered to report littering from vehicles between February and end fo June 2015 and the EPA had receiving 5,027 reports. As a result, the EPA issued 2848 littering from vehicles fines in 2014-15, compared with 492 fines in 2013-14.

   In October 2014 more than 30 EPA officers patrolled the roads leading to Bathurst during the Supercheap Auto Bathurst 1000 weekend, fining those who littered from their cars. The *Hey Tosser!* litter prevention message was used to raise awareness about litter as part of the enforcement campaign. The EPA issued 46 litter fines during this campaign and 141 advisory letters.

3. ***Infrastructure:*** The EPA awarded $2.29 million in grants to councils for litter prevention in 2014-15. These projects achieved an average 60% litter reduction in identified hot spots. Grants are used to fund better infrastructure including bins and signage as well as other activities.

4. ***Monitoring and evaluation:*** The EPA continues to monitor the performance of its litter programs across many levels including both litter counts on the ground and social research into litter attitudes and behaviours.

Illegal dumping

Illegal dumping rose from 2.44 litres of volume per 1,000 square metres in 2012–13 to 2.87 litres in 2014–15.

In May 2014, the NSW Government announced significant increases for penalty notice amounts for illegal dumping under the *Protection of the Environment Operations Act 1997*. The increased penalties are now the toughest in Australia for this type of offence, with fines up to $15,000. These measures will act as strong deterrents to illegal dumping and, together with the actions outlined in the *NSW Illegal Dumping Strategy*, will empower landowners, land managers and local communities to effectively combat illegal dumping.

Supporting the WARR Strategy

A suite of policies and programs continue to promote better waste practices.

The NSW Government has a comprehensive suite of policies and programs to support the WARR Strategy, including legal, economic and funding initiatives. The main driver is the NSW Waste and Environment Levy, which raises the cost of sending waste to landfill and encourages recycling. Resource recovery exemptions also allow waste to be used as fuel or applied to land.

The NSW Government has allocated $802 million over nine years from 2012 under the *Waste Less, Recycle More* initiative. With funds from the Waste Levy, this is the largest program of its kind in Australia, funding local council initiatives, new and enhanced infrastructure, organics collections, problem waste management, business recycling, and illegal dumping and litter prevention. *Waste Less, Recycle More* is facilitating action at all stages of the waste management process to achieve the WARR Strategy targets.

2014 WARR Strategy targets

The NSW Government released a new Waste Avoidance and Resource Recovery Strategy in 2014 with targets for 2021–22.

Key result areas	Targets
1. Avoiding and reducing the amount of waste generated per person in NSW	By 2022, reduce the rate of waste generation per capita
2. Increase recycling rates	By 2022, increase recycling rates to: • 70% for municipal solid waste • 70% for commercial and industrial waste • 80% for construction and demolition waste
3. Reducing landfill	By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%
4. Managing problem wastes better	By 2014, phase out priority substances in identified products as a first choice or, if not possible, achieve maximum recovery for re-use.
5. Reducing litter	By 2017, reduce the total amount of **litter** by 40% (compared with 2012).
6. Reducing illegal dumping	By 2017, reduce **illegal dumping incidents** by 30% (compared with 2012).

The new strategy provides a clear framework for waste management to 2021–22 and provides an opportunity for NSW to continue to increase recycling across all waste streams.

1. Increasing recovery and reuse of secondary resources

2007 WARR Strategy target

By 2014, increase recovery and reuse of materials to:

- 66% of municipal waste
- 63% of commercial and industrial (C&I) waste
- 76% of construction and demolition (C&D) waste.

1.1 Statewide recycling

While recycling rates in general rose steadily between 2002–03 and 2014–15, the targets set in 2007 for achievement in 2014 were not met by all three waste streams.

Recycling rates for all waste streams have risen steadily since the WARR targets were set in 2002–03. Overall progress slowed slightly since the reporting of the 2010–11 data with recycling for C&D waste recovery falling and then partially recovering in that time and a slight reduction in C&I waste recovery in 2014–15 (see Table 2).

Overall recycling rates have still risen with the state recycling 62.8% of all waste in 2014–15, which is:

- up from 44.9% in 2002–03
- up from 62.1% in 2012–13.

Table 2: Progress towards the recycling targets by waste stream

	2002–03*	2004–05	2006–07	2008–09	2010–11	2012–13	2014-15	2014 target
Municipal	30%	33%	38%	44%	52%	55%	58%	66%
C&I	34%	38%	44%	52%	57%	60%	58%	63%
C&D	64%	61%	67%	73%	75%	69%	71%	76%
Overall	45%	46%	52%	59%	63%	62%	63%	

* First WARR Strategy established

1.2 Regional recycling

Recycling rates in the Regional Regulated Area and Rest of State improved overall from those recorded in 2012–13.

Table 3 shows the progress by NSW regions towards the recycling targets for the three waste streams.

These regional recycling rates should be treated with caution however for a number of reasons. Recycling data is mainly derived from individual industry surveys with the data obtained generally unable to be verified. This means it is less reliable in both the quantities shown and the sources of the material being recycled.

In the absence of regional and rest of state figures, calculations have been made using population by area and historical trend data. This methodology accords with previous data reports and while most figures are in line with trends, the breakdown of data by material in each region may not be completely accurate.

Table 3: Progress towards the recycling targets by region and waste stream

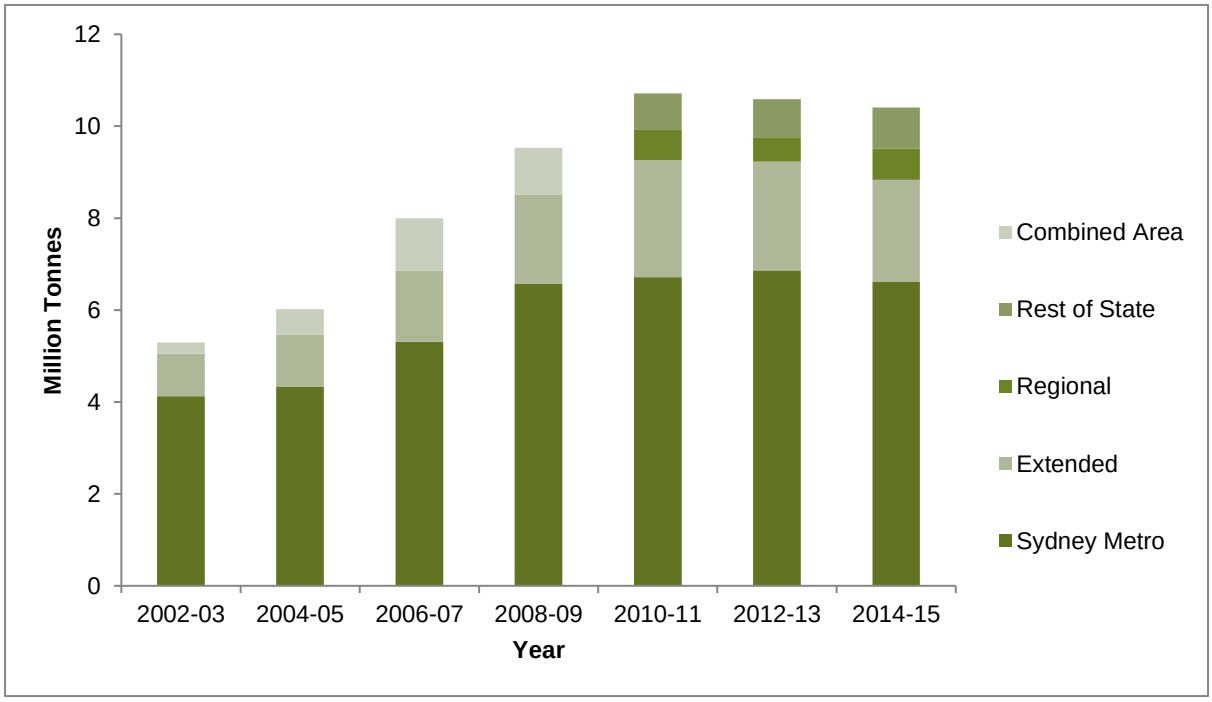
NSW								
	2002–03	**2004–05**	**2006–07**	**2008–09**	**2010–11**	**2012–13**	**2014–15**	**2014 target**
Municipal	30%	33%	38%	44%	52%	55%	58%	66%
C&I	34%	38%	44%	52%	57%	60%	58%	63%
C&D	64%	61%	67%	73%	75%	69%	71%	76%
Overall	45%	46%	52%	59%	63%	62%	63%	
Sydney Metro*								
Municipal	33%	37%	42%	51%	59%	59%	58%	
C&I	33%	35%	42%	49%	52%	59%	61%	
C&D	68%	66%	70%	77%	76%	67%	73%	
Overall	48%	49%	54%	62%	64%	63%	65%	
Extended Regulated Area								
Municipal	28%	33%	41%	43%	51%	56%	61%	
C&I	45%	53%	48%	60%	70%	68%	60%	
C&D	67%	65%	72%	68%	77%	80%	74%	
Overall	47%	50%	56%	59%	68%	69%	66%	
Combined Area (Regional Regulated Area + Rest of State)								
Municipal	25%	23%	29%	32%	38%	45%	56%	
C&I	22%	37%	48%	56%	61%	56%	46%	
C&D	1%	26%	48%	40%	55%	47%	53%	
Overall	18%	28%	40%	42%	50%	49%	52%	
Regional Regulated Area								
Municipal					45%	50%	56%	
C&I					71%	58%	42%	
C&D					54%	45%	47%	
Overall					57%	52%	50%	
Rest of State								
Municipal					33%	43%	56%	
C&I					55%	54%	50%	
C&D					56%	49%	57%	
Overall					45%	48%	54%	

* Only Sydney Metro had baseline recycling rates in 2000. This data was used to create the strategy targets.

The Regional Regulated Area was created in July 2009 and first reported in 2010–11, although the data then was not robust. Data quality has since improved, but caution needs to be taken on the separately reported Regional Area and Rest of State. To help compare old data with this year's results, we also report on the Regional Area and Rest of State information is reported together in the Combined Area category.

As is evident from Figure 4, the Sydney Metro region makes the largest contribution by far towards total tonnage recycled. Nonetheless, the volume of recycling from other regions increased steadily from 2002–03 to 2014–15.

Figure 4: Contributions of individual regions to overall recycling



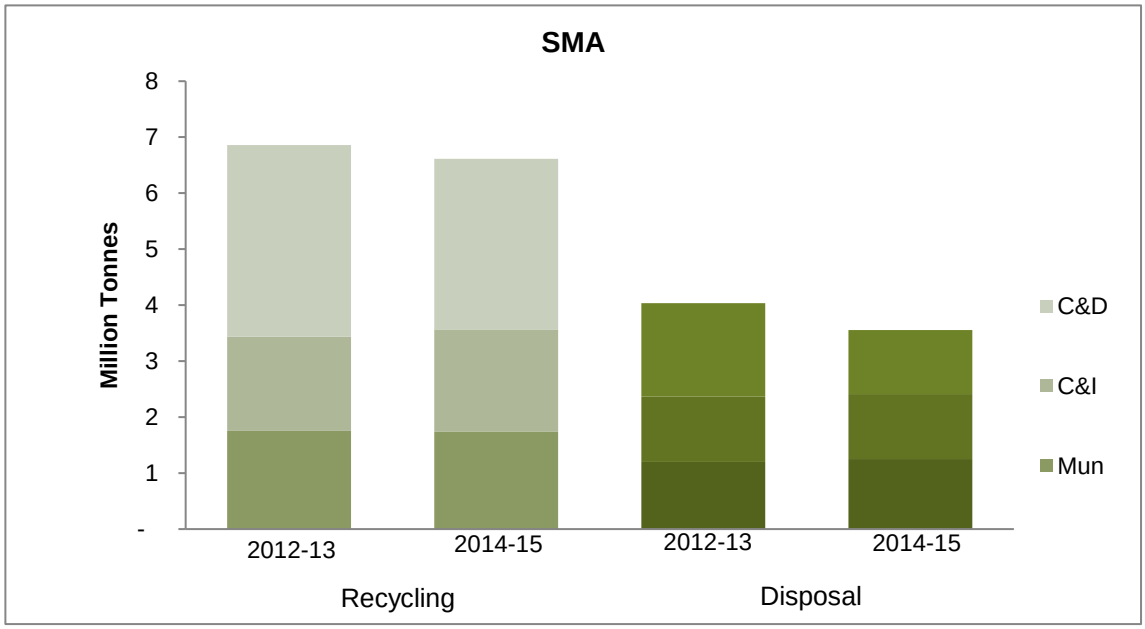
In 2002–03, Sydney Metro contributed 78% of the state's total recycling tonnage, but by 2014–15 this had fallen to 64% as contributions from the Combined Area (Regional Area plus Rest of State) rose from 5% in 2002–03 to 16% in 2014–15. The Extended Area's share rose from 18% to 21% over the same period.

Sydney Metro

Sydney Metro's 2014–15 recycling rate of 65% was a rise from the recorded 2012–13 rate of 63%. Compared with 2012–13, overall waste disposed to landfill fell by 475,000 tonnes, while recycling also decreased by 250,000 tonnes (Figure 5). This reflected a large fall in the generation of C&D waste compared with 2012-13. The 1.15 million tonnes C&D disposed of in 2014-15 is comparable to the 1.12 million tonnes in 2010-11. The decrease therefore reflects the tonnages from the Barangaroo and Darling Harbour developments in 2012-13.

Overall, 6.61 million tonnes were recovered from Sydney Metro, an increase of almost 2.5 million tonnes from the 4.12 million tonnes recovered in 2002–03.

Figure 5: Recycling and waste disposal in Sydney Metro Area – 2012–13 and 2014–15



As shown in Figure 6, Sydney Metro's recycled waste in 2014–15 comprised:

- 58.2% of the region's municipal waste, a 1.2% decrease from 59.4% in 2012–13.
- 61.2% of its C&I waste, up 2.2% from 59% in 2012–13.
- 72.7% of its C&D waste, up from 67.3% in 2012–13 and close to 75.9% in 2010–11.

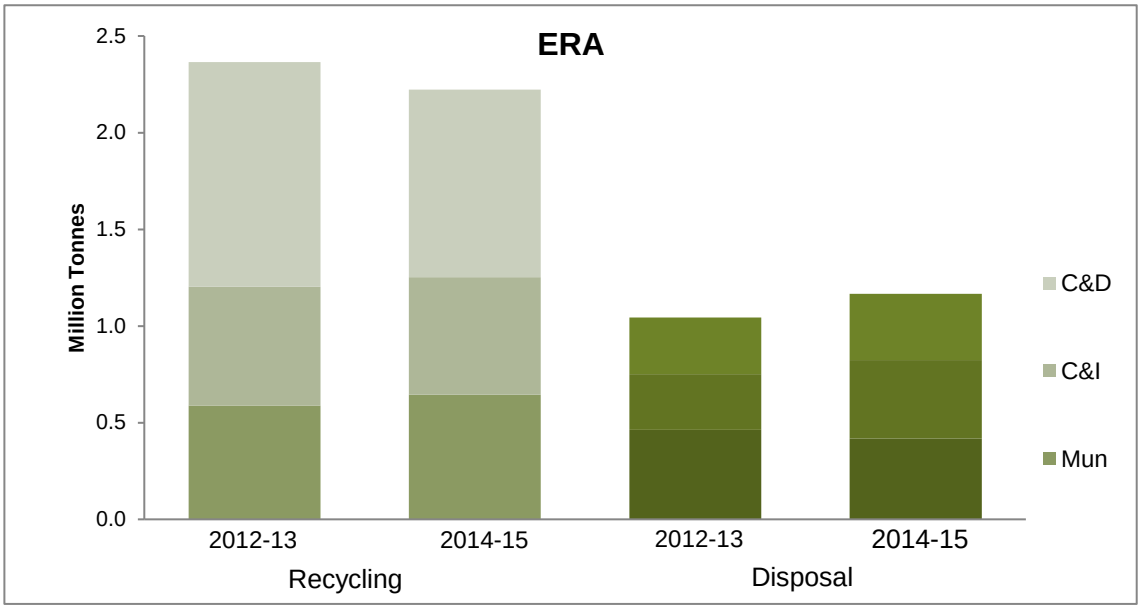
Figure 6: Recycling rates by waste stream in the Sydney Metro Area – 2014–15

Appendix B shows the waste creation, disposal and recycling tonnages for each waste stream regionally.

Extended Regulated Area

The recycling rate in the Extended Regulated Area rose from 47.3% in 2002–03 to 69.4% in 2012–13, but dropped to 65.6% in 2014–15. This was caused by a fall in recycling of 140,000 tonnes coupled with an increase in disposal of 120,000 tonnes (Figure 7).

Figure 7: Recycling and waste disposal in the Extended Regulated Area – 2012–13 and 2014–15

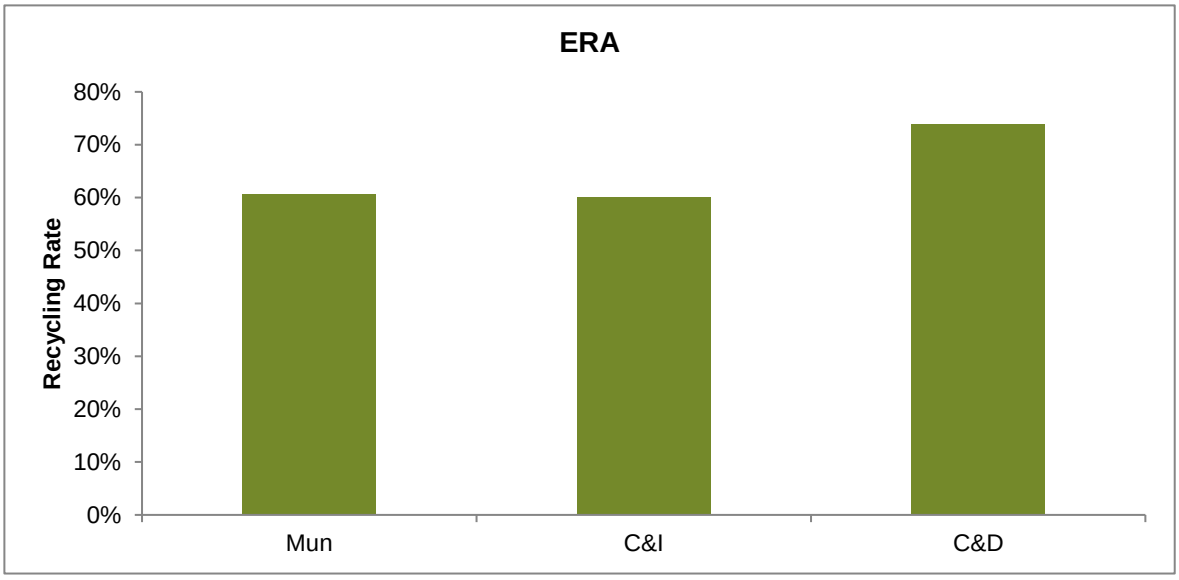


As shown in Figure 8, the Extended Area's recycling rate for each waste stream in 2014–15 comprised:

- 60.7% of the region's municipal waste, up from 56% in 2012–13
- 60% of its C&I waste, down from 68% in 2012–13
- 73.9% of its C&D waste, down from 79.9% in 2012–13.

The decreases in the C&I recycling rate was due to increased disposal of 116,000 tonnes and reduced recycling by 10,000 tonnes and, for C&D waste, disposal of an extra 50,000 tonnes and 190,000 less tonnes recycled.

Figure 8: Recycling rates by waste stream in the Extended Regulated Area – 2014–15



Appendix B shows the waste creation, disposal and recycling tonnages for each waste stream regionally.

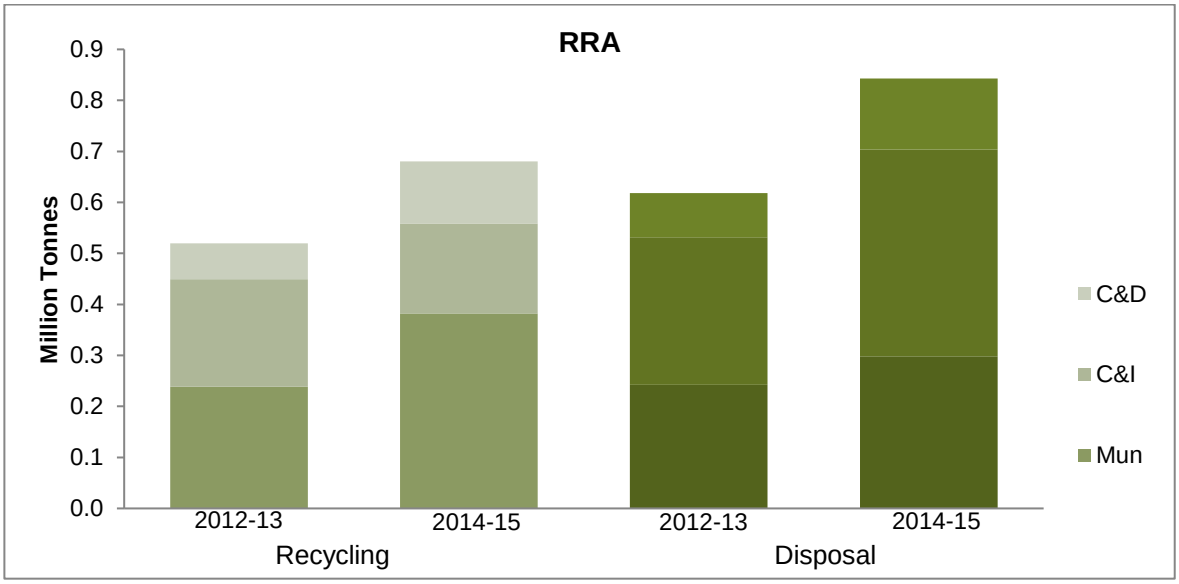
Regional Regulated Area

Disposal data is collected separately for this area and is now considered robust enough to be presented separately. However, the figures should still be treated with caution as recycling data is often extrapolated by population from state figures and regional data is not derived from waste material surveys.

The recycling rate for the Regional Area in 2014–15 was 50%, a decrease from 52% in 2012–13. The region saw an increase in recycling to 680,000 tonnes up from 520,000 tonnes in 2012–13, along with an increase in disposal of 200,000 tonnes. These can be attributed to a significant rise in the reporting of mixed waste along with more information from waste facilities and dispersion of overall recycling tonnes based on population.

Figure 9 shows municipal recycling has increased, this due to a rise in reported recycled garden and food organics in the region.

Figure 9: Recycling and waste disposal in the Regional Regulated Area – 2012–13 and 2014–15



As Figure 10 shows, the Regional Regulated Area's estimated recycling rates for each waste stream in 2014–15 were:

- 56.2% of the region's municipal waste, up from 49.6% in 2012–13
- 42% of its C&I waste, down from 58.3% in 2012–13
- 46.7% of its C&D waste, up from 45% in 2012–13.

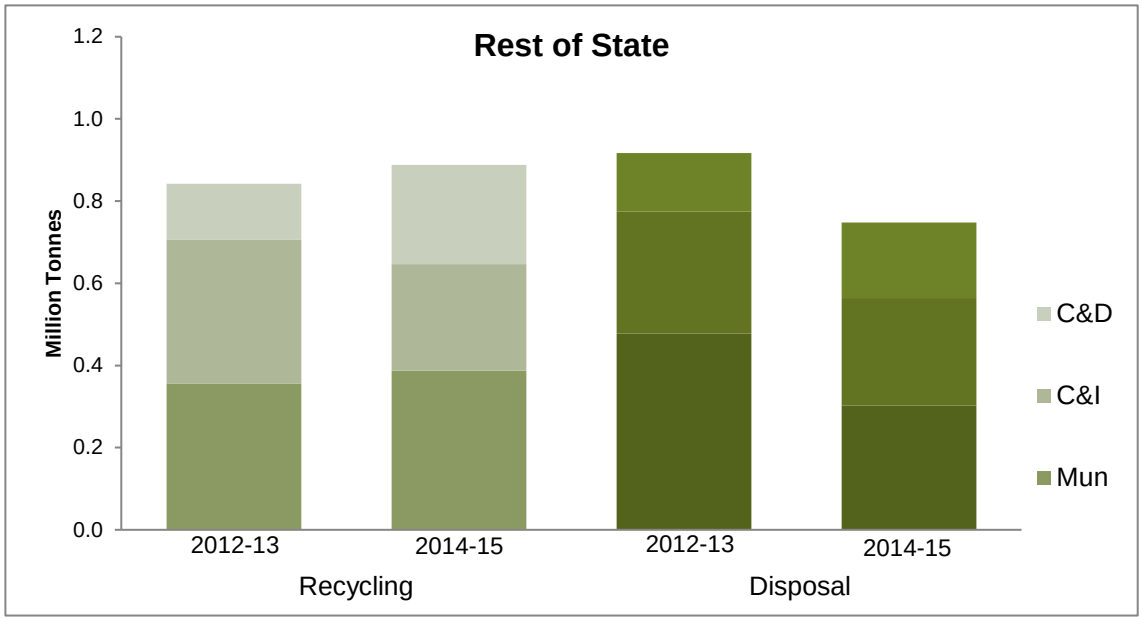
Figure 10: Recycling rates by waste stream in the Regional Regulated Area – 2014–15

Appendix B shows the waste creation, disposal and recycling tonnages for each waste stream regionally.

Rest of State

The 2014–15 recycling rate for Rest of State was 54.3%, up from 47.9% in 2012–13. This was due in large part to an increase in the amount of C&D waste reported and an additional 150,000 tonnes of recycling compared with 2012–13 (Figure 11). There was also decreased waste disposed to landfill in the municipal and C&I sectors.

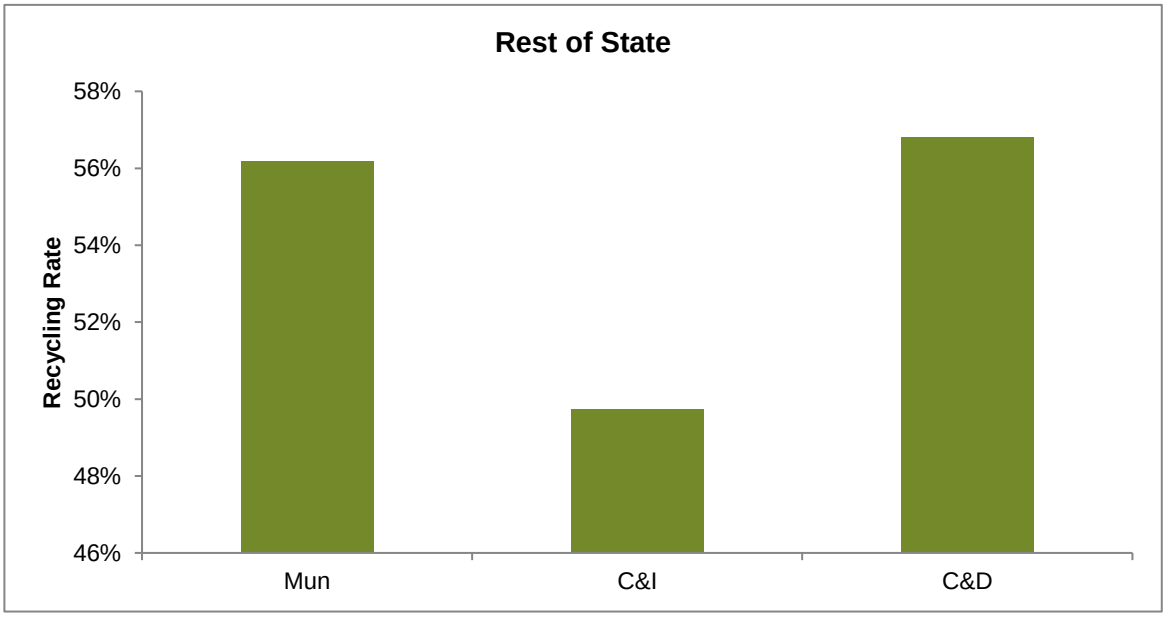
Figure 11: Recycling and waste disposal in Rest of State – 2012–13 and 2014–15



The recycling rate in 2014–15 in the Rest of State was 54.3% and, as shown in Figure 12, the estimated recycling rates for each of the waste streams was:

- 56.2% of the region's municipal waste, up from 42.7% in 2012–13
- 49.7% of its C&I waste, down from 54.1% in 2012–13
- 56.8% of its C&D waste, up from 48.8% in 2012–13.

Figure 12: Recycling rates by waste stream in the Rest of State – 2014–15



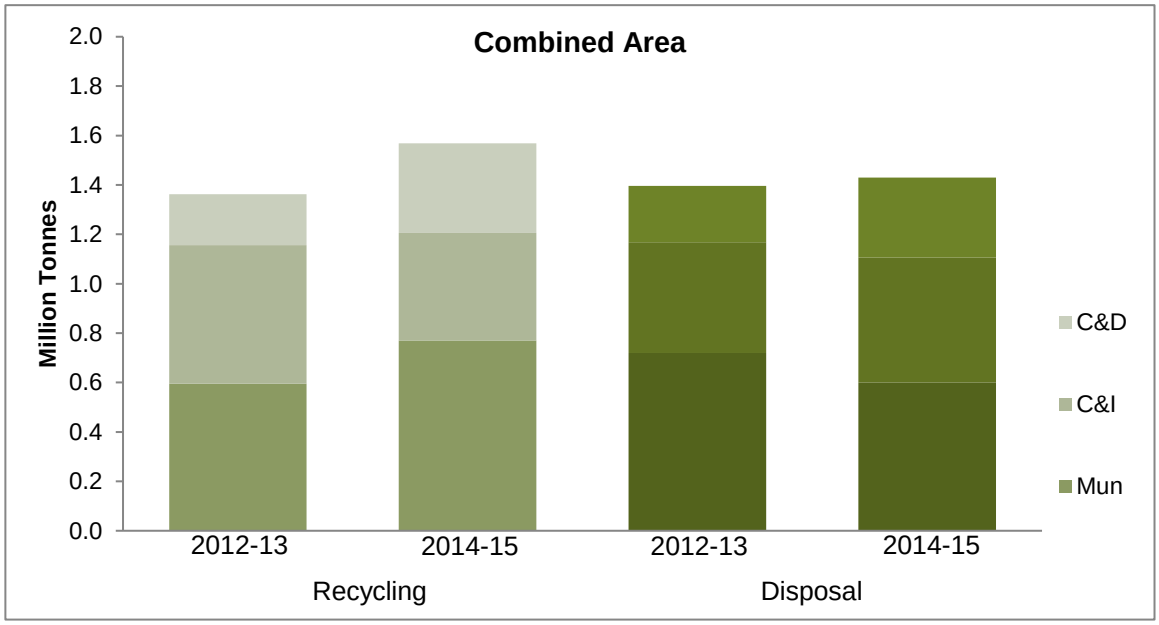
The increase in municipal waste recycling can be explained by a large fall in waste sent to landfill especially in food and garden organics from 477,000 tonnes in 2012–13 to 302,000 tonnes in 2014–15. The rise in the C&D recycling rate is the product of a jump in material being sent to recycling from 136,000 to 240,000 tonnes.

Appendix B shows the waste creation, disposal and recycling tonnages for each waste stream regionally.

Combined Area (Regional Regulated Area and Rest of State)

Data for the Combined Area shows an increase in recycling of 207,000 tonnes alongside an increase in disposal of 32,000 tonnes (Figure 13).

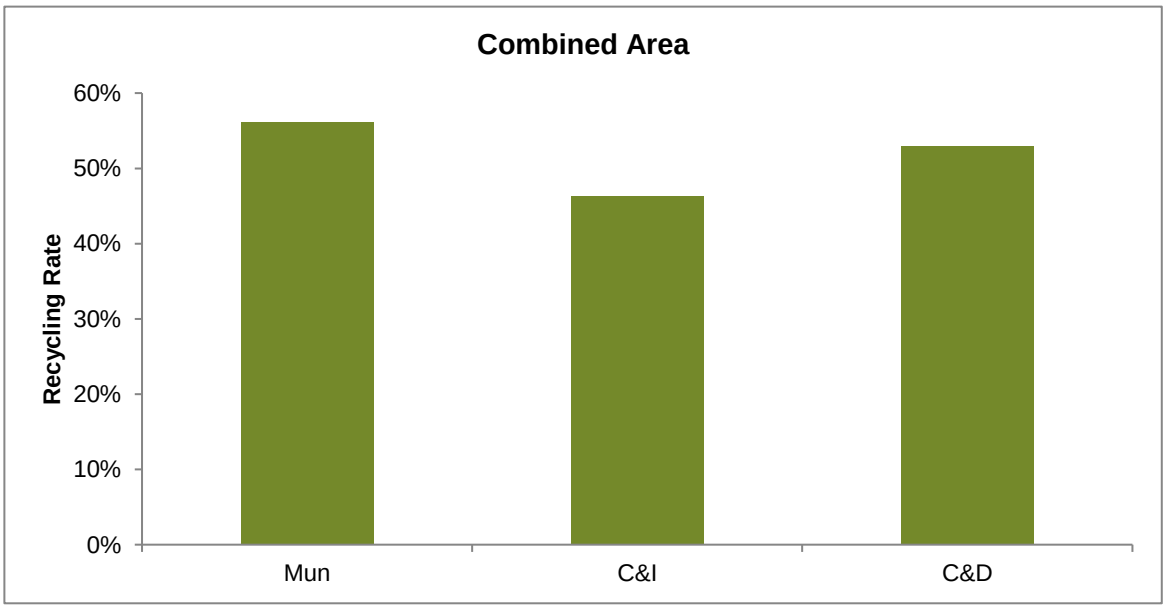
Figure 13: Recycling and waste disposal in the Combined Area – 2012–13 and 2014–15



The net result of these movements was an overall recycling rate of 52.3%, improving on 49.4% in 2012–13. For individual waste streams, this included (Figure 14):

- 56.2% of municipal waste, up from 45.2% in 2012–13
- 46.3% of C&I waste, down from 55.6% in 2012–13.
- 52.9% of C&D waste, up from 47.4% in 2012–13.

Figure 14: Recycling rates by waste stream in the Combined Area – 2014–15



Appendix B shows the waste creation, disposal and recycling tonnages for each waste stream regionally.

1.3 Waste stream recycling rates

Recycling rates rose for key material streams such as food waste in 2014–15.

Material recycling rates

Recycling data is collected from several sources. The EPA contracts industry bodies and consultants to obtain material-specific data from reprocessors. The annual local government survey along with audits of kerbside collections are the other main sources for material composition. Australian Bureau of Statistics (ABS) export trade data, company annual reports, IBIS and industry reports are also used to quantify and source material-specific data. An independent consultant has peer reviewed the data and calculations. Some extrapolations are made to calculate across areas where only statewide totals or no regional data is available by using population data taken from ABS updates. The methodology has been consistent with that used in previous progress reports.

Six broad material categories are responsible for over 80% of the waste produced in NSW by weight as shown in Figure 15. These are masonry (29% of total waste), organics (29%), metals (11%), paper and cardboard (8%), plastics (4%) and glass (2%). Combined, these materials produced 13.3 million tonnes in 2014–15.

Figure 15: Predominant material generated by tonnes in NSW – 2014–15

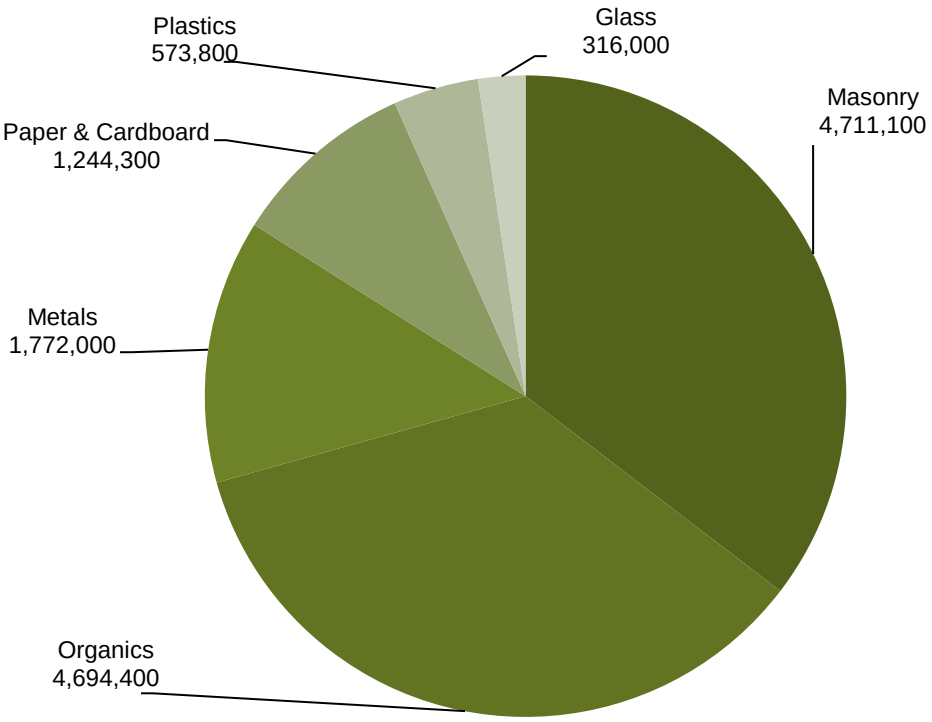
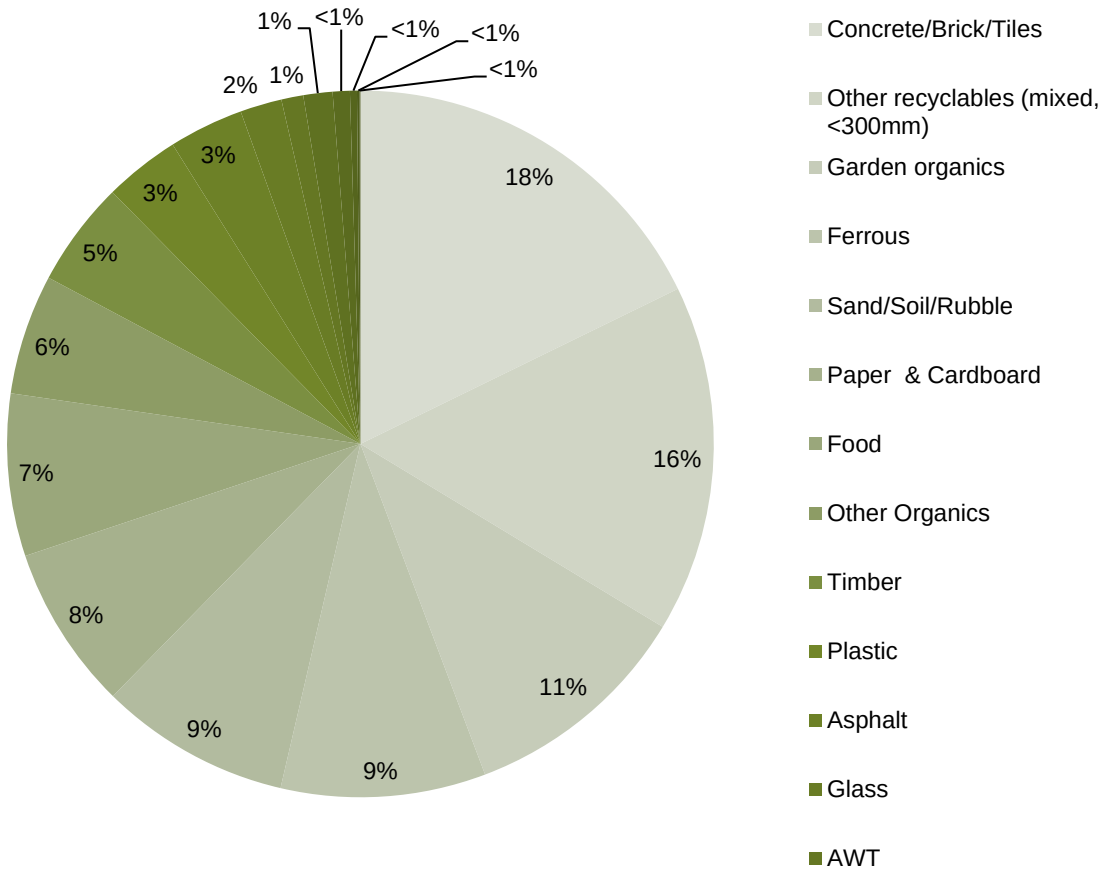


Figure 16 shows the individual material categories for NSW waste generated in 2014–15 by weight. Concrete/brick/tiles (17% of the total), other materials (mixed fines < 300 mm) (16%) and garden organics (11%) have the largest proportion by weight.

Figure 16: Composition of NSW waste generation material by weight – 2014–15

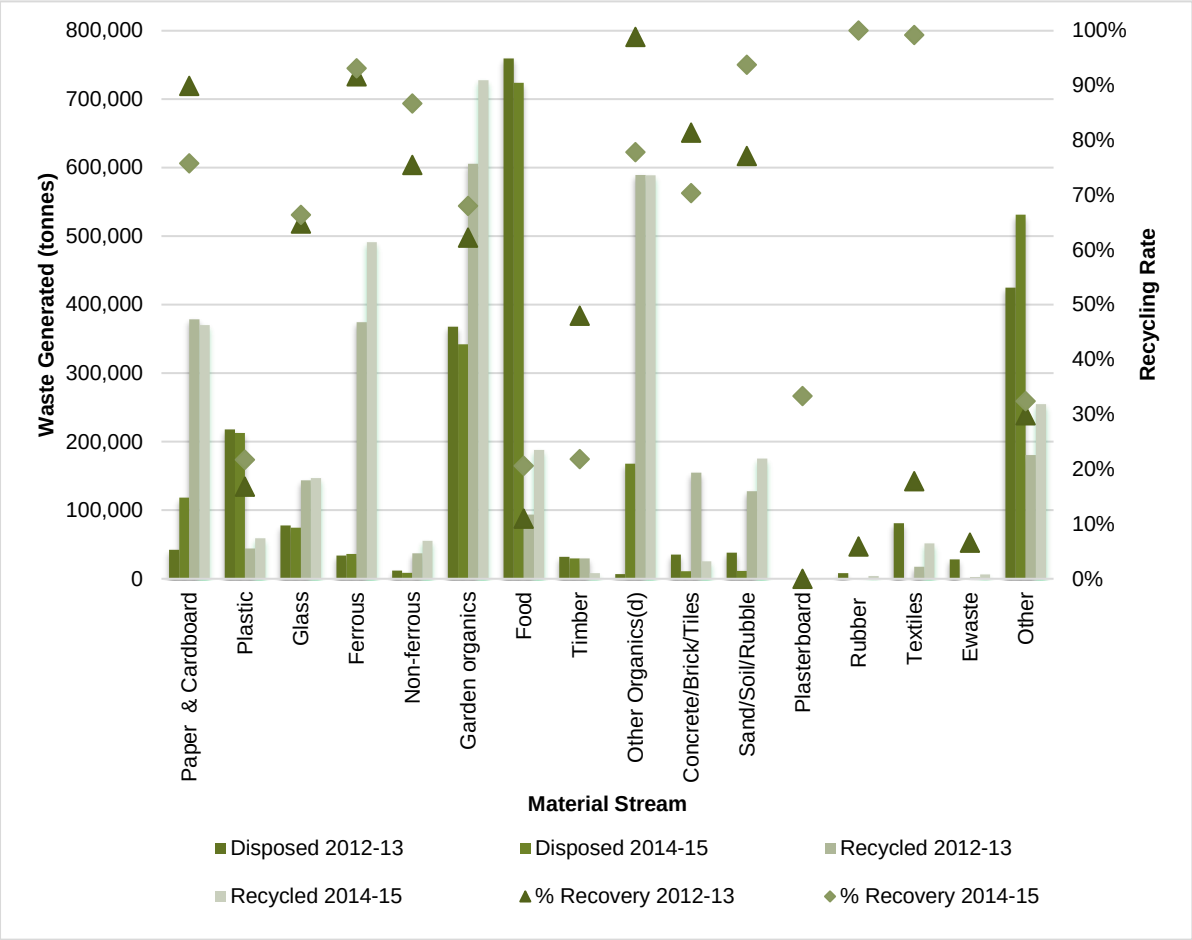


Accurate data about recycling rates for different materials is difficult to obtain. Data about the amount of waste recycled in NSW can vary because of:

- different response rates to industry surveys
- difficulty identifying the source (waste stream or location) of materials
- changes in commodity prices resulting in the transport of waste for treatment in other states or countries
- the availability of source material and markets
- one-off events such as large construction projects or natural disasters.

Figure 17 shows the data on recycling and disposal of individual materials collected in 2012–13 and 2014–15, using the same data collection methods as in previous years to maximise accuracy and comparability.

Figure 17: Recycling and waste disposal by individual material – 2012–13 and 2014–15



Notes:
Other organics: biosolids, manures, oils, grease trap, sludges, municipal waste organic fraction.
Other: Other recyclables: mattresses, batteries, mixed recyclables from landfill (generally mixed fines <300 mm), AWT recovered fraction Other waste all unquantifiable non-recyclable or potentially recyclable materials, AWT residual.

Although recycling rates vary across most streams each year, the main differences between 2012–13 and 2014–15 were:

- organics recycling at 54.5% was up from 51% in 2012–13
- the food recycling rate rose from 11% to 25%
- timber recycling increased from 33% to 41%
- paper and cardboard recycling fell from 76% to 64%.

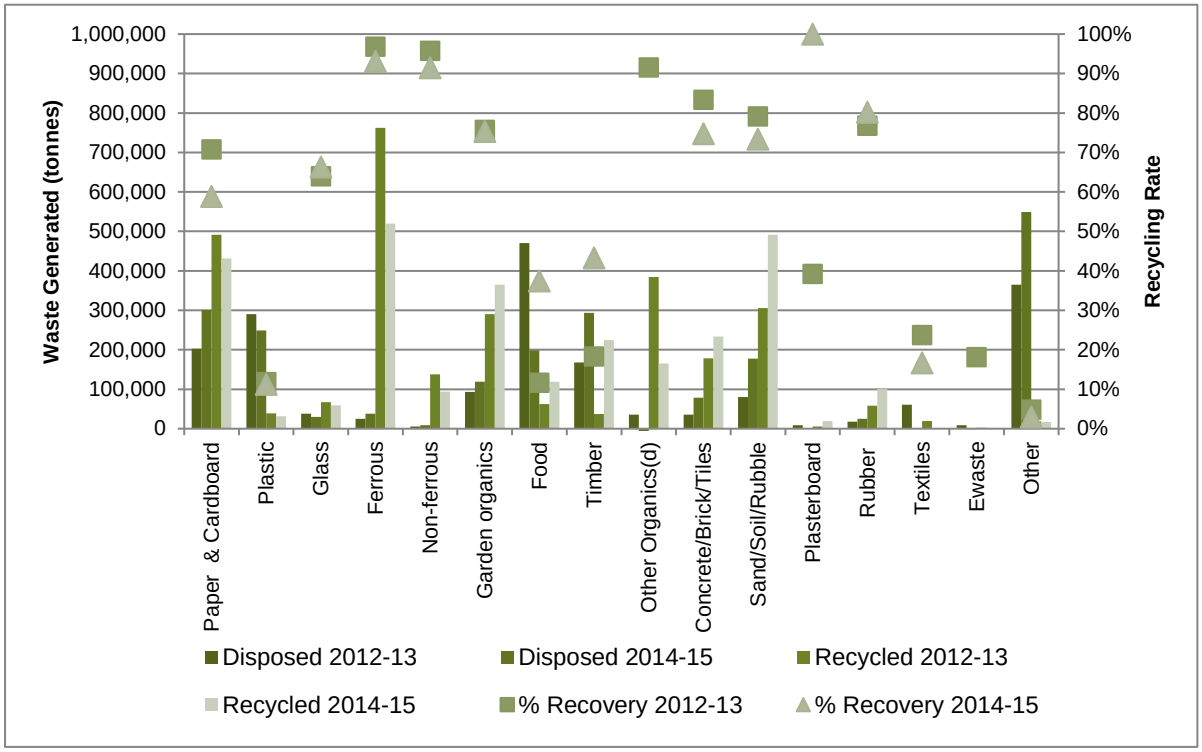
Municipal waste stream

In 2014–15, recycling of the municipal waste stream rose by 3% to 58.2% from 2012-13. Recycling increased 220,000 tonnes to 3.15 million in 2014-15 and 2.27 million tonnes of the municipal waste was disposed to landfill.

As Figure 18 shows, large amounts of some materials are being recovered from the municipal waste stream. In 2014–15, these included:

- garden organics – 728,000 tonnes recycled, up 122,000 tonnes from 2012–13
- food – 188,000 tonnes, up from 94,000 tonnes
- steel – 491,000 tonnes, up by 117,000 tonnes
- paper and cardboard – 370,000 tonnes, down by 8,000 tonnes

Figure 18: Recycling and waste disposal by individual material for the municipal waste stream – 2012–13 and 2014–15

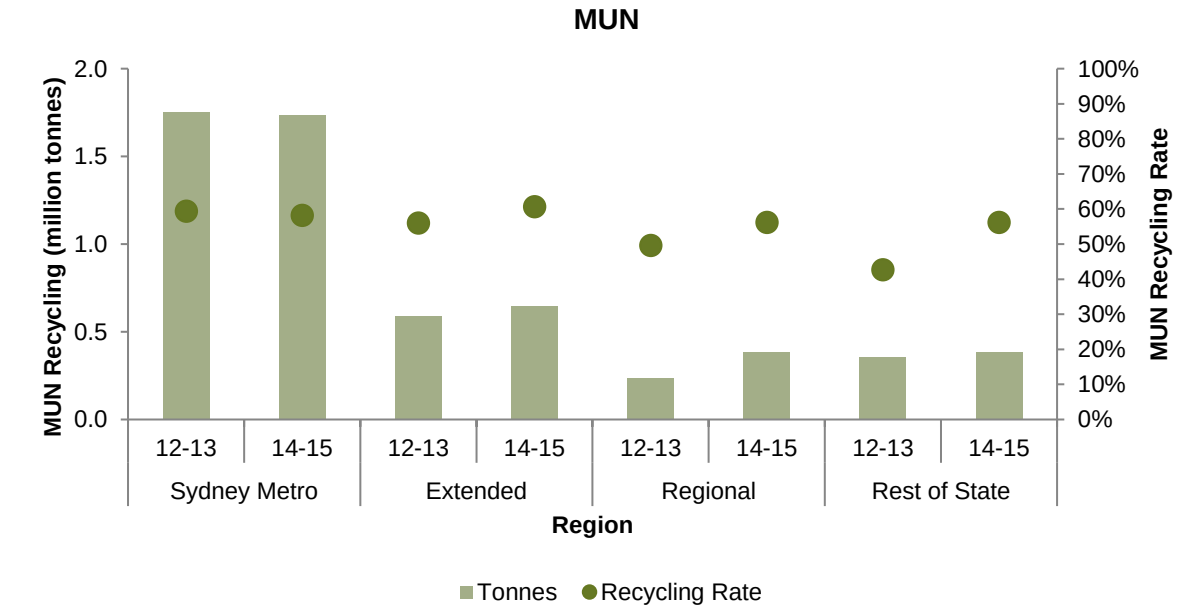


Notes:
Other organics: biosolids, manures, oils, grease trap, sludges, municipal waste organic fraction.
Other: Other recyclables: mattresses, batteries, mixed recyclables from landfill (generally mixed fines <300 mm), AWT recovered fraction Other waste all unquantifiable non-recyclable or potentially recyclable materials, AWT residual.

See Appendix C for a full breakdown of all waste streams by material.

Figure 19 shows recycling rate slightly drop in the SMA but increases in ERA, RRA and Rest of State, with recycling tonnes increasing in RRA but remain consistent elsewhere.

Figure 19: Recycling tonnages and recycling rates by region for the municipal waste stream – 2012–13 and 2014–15



Commercial and industrial (C&I) waste stream

The generation of C&I waste per capita has been consistent, however the overall recycling rate in 2014–15 fell to 58.1% from 60% in 2012–13.

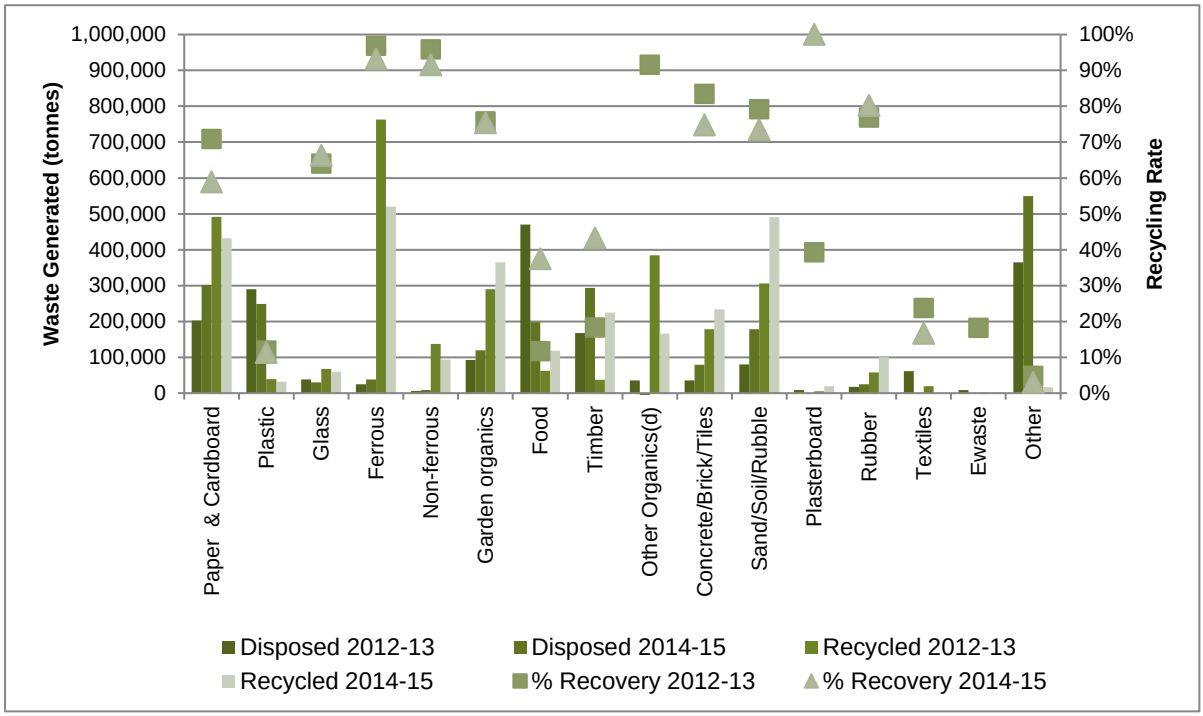
The lower overall C&I recycling rate of 58.1% in 2014–15 was mainly due to an increase in disposal by 169,000 tonnes compared with 2012–13. However strong recovery of some C&I materials continued (Figure 20), especially:

- steel and non-ferrous metals
- garden organics
- food

The recycling rates for some C&I categories changed in some categories from 2012–13 to 2014–15:

- timber recycling increased by 25%, from 18% in 2012–13 to 43% in 2014–15
- food organics recycling increased by 25% to 37% in 2014–15
- the tonnage of sand/soil/rubble recycled and disposed of both increased.

Figure 20: Recycling and waste disposal by individual material for the C&I waste stream – 2012–13 and 2014–15

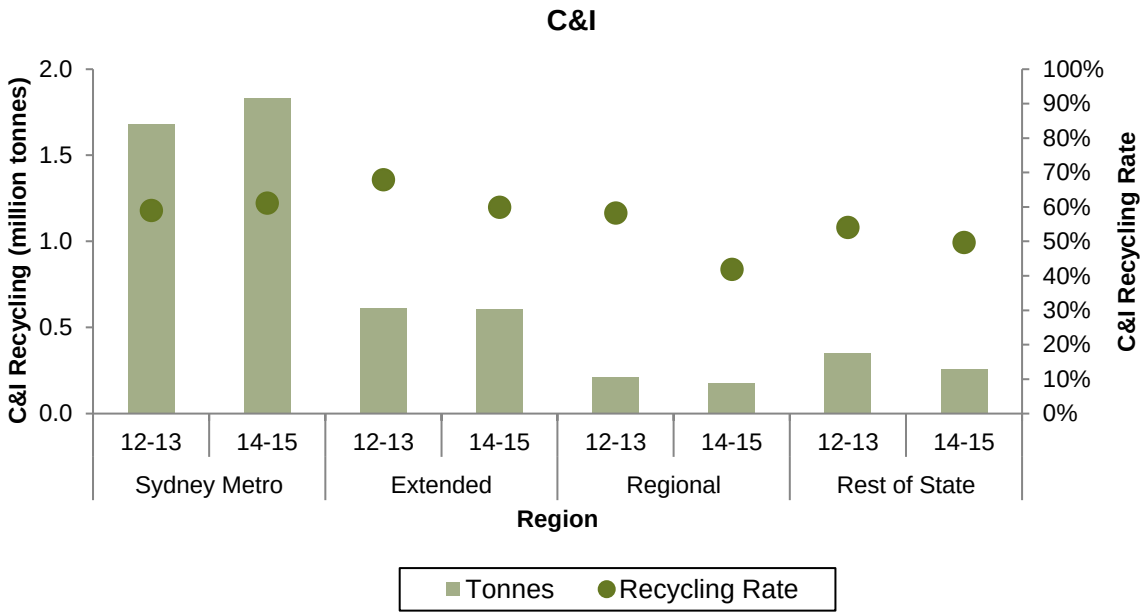


Notes:
Other organics: biosolids, manures, oils, grease trap, sludges, municipal waste organic fraction.
Other: Other recyclables: mattresses, batteries, mixed recyclables from landfill (generally mixed fines <300 mm), AWT recovered fraction Other waste all unquantifiable non-recyclable or potentially recyclable materials, AWT residual.

As shown in Figure 21, the Sydney Metro area increased its C&I recycling rate between 2012–13 and 2014–15 by 2.2% to 61.2%. The C&I waste generated in Sydney increased by 142,000 tonnes from 2012–13 and much of this contributed to the increase in recycling. For the first time, the Sydney Metro C&I recycling rate exceeded the state average and was the highest of any region.

The Extended Area C&I recycling rate dropped from 68% in 2012–13 to 60% in 2014–15. The amount of C&I material sent to landfill rose by 116,000 tonnes, while recycling decreased by 8,000 tonnes.

Figure 21: Recycling tonnages and recycling rates by region for the C&I waste stream – 2012–13 and 2014–15



The Regional Area saw C&I recycling rates fall from 58% to 42% between 2012–13 and 2014–15. This was due to a 93,000 tonne rise in landfill and 34,000 tonne fall in recycling in the C&I stream. The net result was a rise in C&I waste generation to 59,000 tonnes.

Finally, the Rest of State C&I recycling rates fell from 54.1% to 49.7% between 2012–13 and 2014–15. This was due to decreases in landfilling of 35,000 tonnes as well as recycling of 90,000 tonnes.

Several factors are used to calculate the recycling and disposal data by area, including population and reports received from industry sector surveys. While data reporting and accuracy is improving, caution needs to be taken when using these figures as many extrapolations are used across the material streams to allow splitting by regions.

Construction and demolition (C&D) waste stream

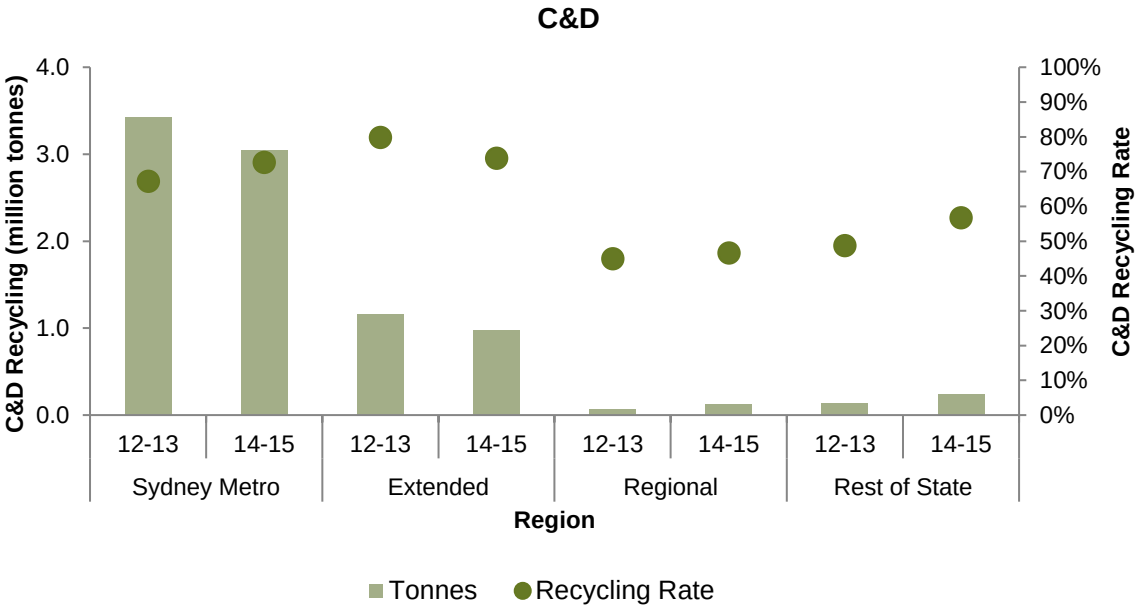
C&D recycling rates improved, despite a reduction in recycling tonnes.

In 2014–15, C&D activities created the most waste in NSW – 37% of the state total generation and 42% of the state recycling tonnage. The overall C&D recycling rate was 70.7%, a 2.1% rise from 2012–13. The main reasons for this increase were:

- a rise in metal recycling rates, from 87% to 93% for ferrous metals and from 69% to 86% for non-ferrous metals
- a decrease in disposal of concrete, sand/soil/rubble and timber
- a fall in the generation of other non-recyclable waste, a category that includes hazardous wastes and other non-recyclable materials.

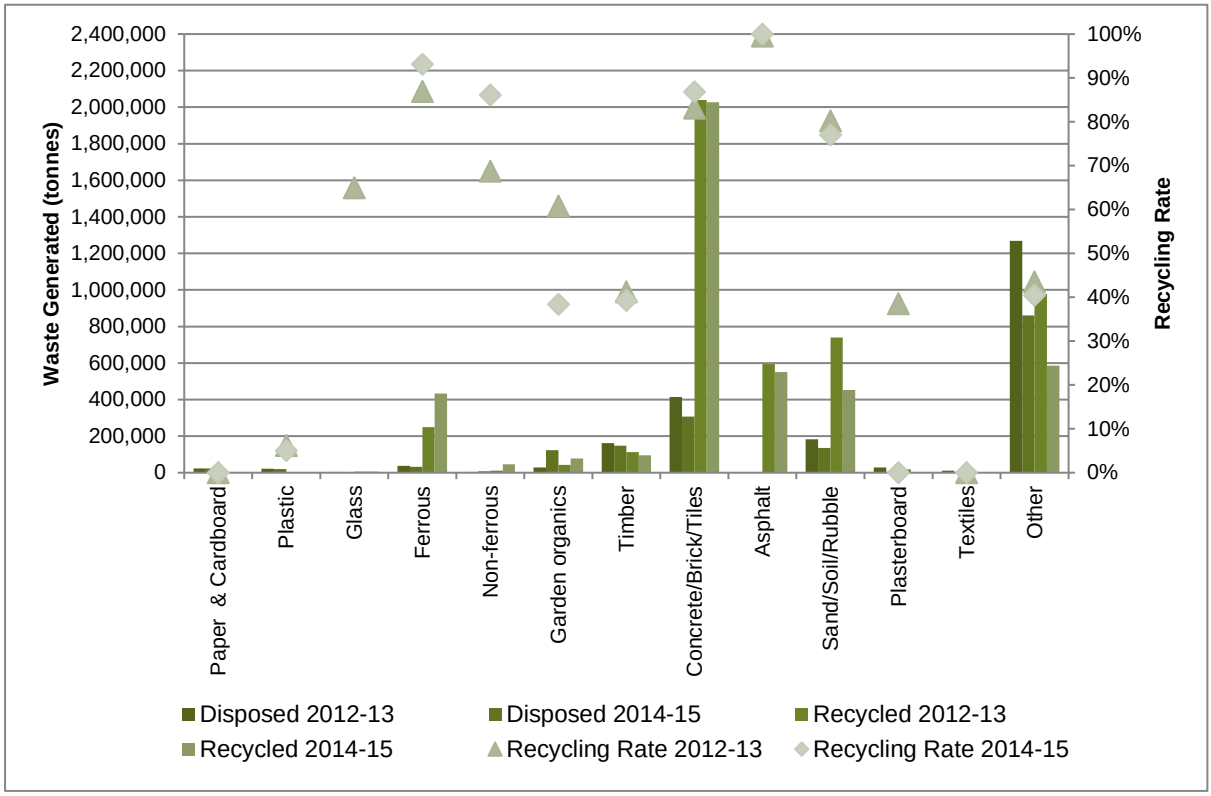
As shown in Figure 22, rises in the recycling rates for C&D waste in the Sydney Metro, Regional Area and Rest of State were partially offset by a fall in the rate in the Extended Area.

Figure 22: Recycling tonnages and recycling rates by region for the C&D waste stream – 2012–13 and 2014–15



As Figure 23 shows, the types of materials in the C&D waste stream fall largely into a few material categories: mainly masonry (asphalt, concrete/brick/tiles and sand/soil/rubble) and metals (ferrous and non-ferrous). All of these streams had a recycling rate of over 80%.

Figure 23: Recycling and waste disposal by individual material for the C&D waste stream – 2012–13 and 2014–15



Notes:
Other: Other recyclables: mattresses, batteries, mixed recyclables from landfill (generally mixed fines <300 mm), AWT recovered fraction Other waste all unquantifiable non-recyclable or potentially recyclable materials, AWT residual.

In terms of tonnages, significantly less C&D waste was reported in 2014–15 compared with 2012–13 (as shown in Figure 3). A major factor in explaining this may be the movement of C&D waste being sent interstate unreported. This report has included for generation tonnes and per capita purposes the reported 260,000 tonnes of waste and recycling sent to Queensland, as reported by the Department of Environment and Heritage Protection in the *State of Waste and Recycling in Queensland 2015*.[2]

Another factor which may explain the comparatively low C&D waste generated was the one off large amount of contaminated soil created in the 2012–13 reporting period by the Barangaroo development in Sydney. This development created 384,000 tonnes of unrecyclable waste in 2012–13 which equates to more than the 377,000 tonnes less C&D waste disposed of in 2014–15.

[2] *https://www.ehp.qld.gov.au/waste/state-of-waste-report.html*

2. Preventing and avoiding waste

2007 WARR Strategy target

Hold the level of total waste generated for five years from the release of the 2003 Waste Strategy

2.1 Statewide and regional waste prevention

The tonnes of waste generated fell again in 2014–15, 3% less that 2012–13 and 3.2% lower than 2010–11.

The 2007 target to hold the level the total waste generated steady for five years was achieved in 2014–15 despite waste generation increasing from 16.26 million tonnes in 2008–09 to peak at 17.12 million tonnes in 2010–11.

The amount of total waste created (materials recycled plus waste sent to landfill) fell from 17.06 million tonnes in 2012–13 to 16.56 million tonnes in 2014–15. This is the second reporting period in a row where total waste generated has fallen and represents a reduction from 2,341 kilograms per capita in 2012–13 to 2,203 kg in 2014–15.

Sydney Metro and the Extended Regulated Area created less total waste, while the Combined Area's total increased slightly, although this could be associated with improved data reporting from that region. Figure 24 shows the total waste created for each region.

Figure 24: Waste created (disposed and recycled) by region and year

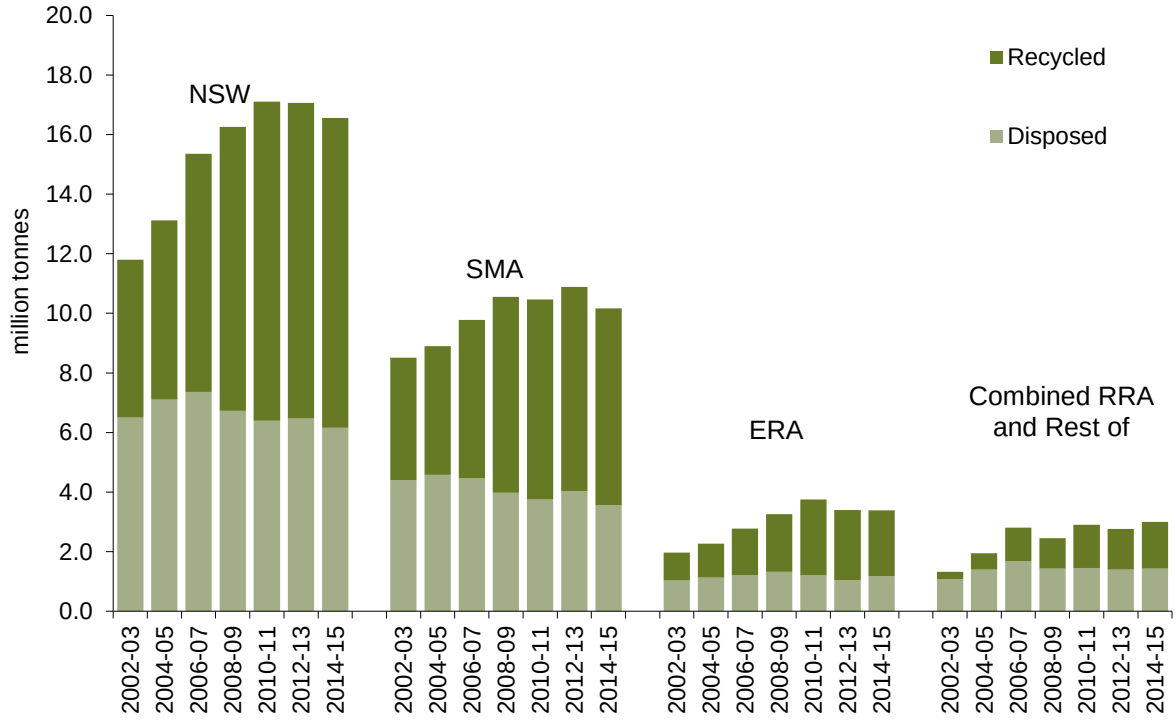
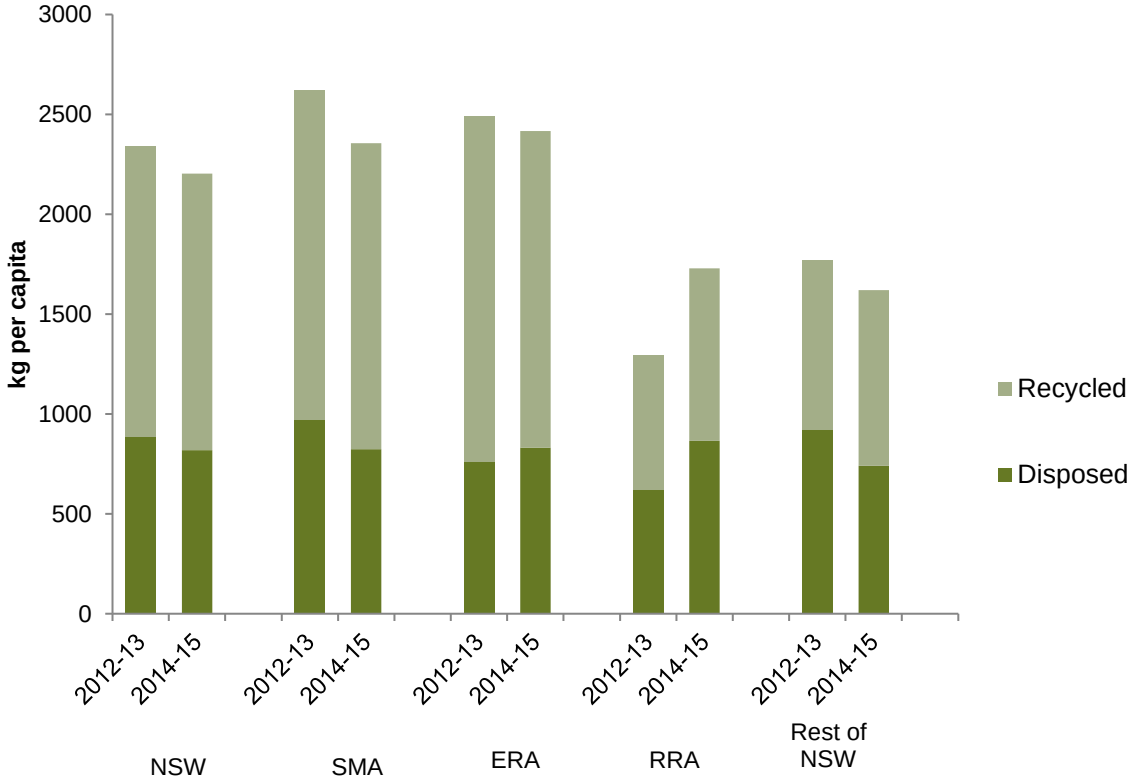


Figure 25 shows a slight fall in waste per capita across NSW except in the Regional Regulated Area, which is attributed to greater disposal and recycling (in the C&I and C&D sectors).

Figure 25: Waste generated per capita by region – 2012–13 and 2014–15



2.2 Waste stream and material-specific waste prevention

The waste generated per capita fell by 138kg per capita per year between 2012–13 and 2014–15.

All disposal data is now robust enough to measure the composition and sources of each waste stream. For example, regular audits of kerbside collections and landfills show the composition of the waste and the EPA also now collects disposal data from:

- monthly online reports of levied landfills and recyclers in the Sydney Metro and Extended and Regional Areas (WARRP)
- yearly reports of non-levied landfills in Rest of State.
- The annual Local Government Waste and Resource Recovery survey

Figure 26 shows per capita waste and recycling data by stream between 2012–13 and 2014–15.

Figure 26: Waste generated per capita by stream – 2012–13 to 2014–15

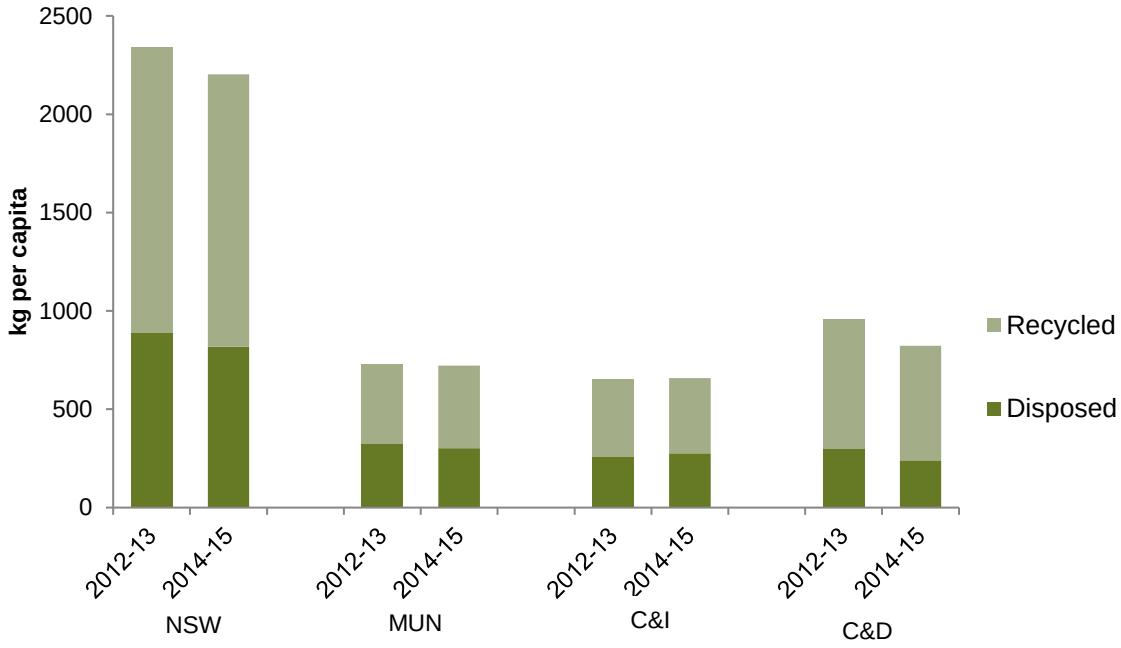
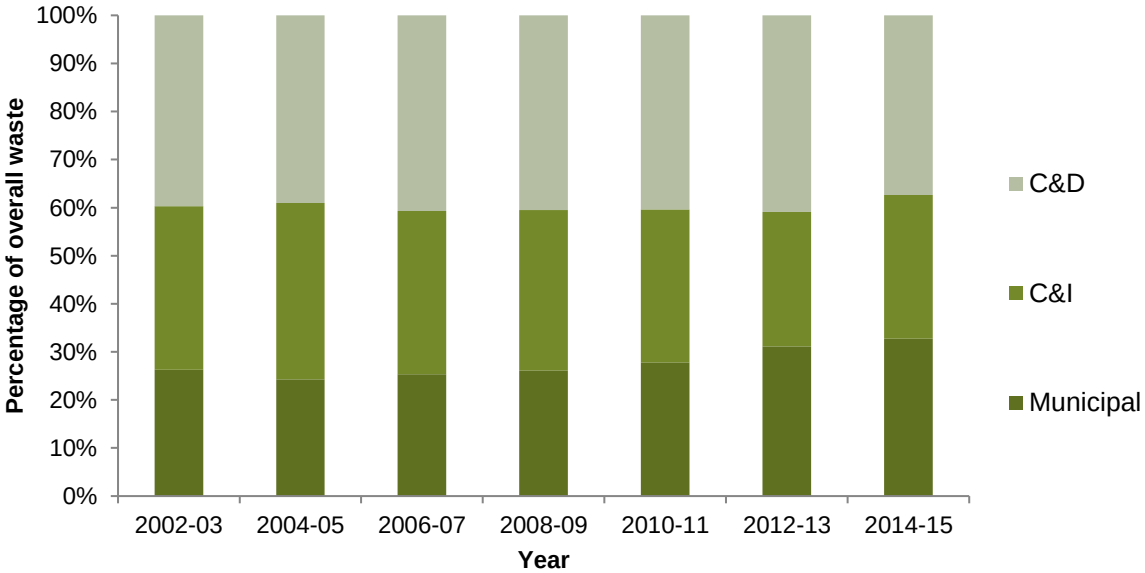


Figure 27 shows the changing composition of NSW waste between 2002–03 and 2014–15.

Municipal waste has grown from a 26% share in 2002-03 period to 33% in 2014–15; C&I has fallen from 34% to 30% over the same time; and C&D held steady at 40% until 2014–15 where a drop to 37% occurred.

Figure 27: Composition of NSW waste by stream – 2002–03 to 2014–15



Municipal waste

The key results for municipal waste in 2014–15 were:

- the waste stream made up 33% of the total waste generated by the state
- total municipal waste created increased from 5.32 million tonnes in 2012–13 to 5.42 million tonnes in 2014–15.

Some materials in the municipal waste stream saw large rises or falls in generation between 2012–13 and 2014–15 including:

- food waste – despite an increase of 60,000 tonnes in municipal food waste being produced in 2014–15 compared with 2012–13, disposal fell by 5% from 759,500 to 724,000 tonnes and recycling doubled from 94,000 to 188,000 tonnes. This significantly increased the recycling rate from 11% to 21%, a great result for Organics programs delivered by the EPA from *Waste Less, Recycle More* funding.
- Other, other recycling including C&D mixed fines <300mm – increased both disposal and recycling however we are unable to allocate to specific material, overall increase by 181,000 tonnes in 2014–15.

Overall municipal waste generation increased by 2% or 106,000 tonnes between 2012–13 and 2014–15. Despite population growth, this represented a fall from 730 to 721 kg per capita per year. This suggests that waste generation has been held steady and even reduced over the period, possibly indicating an uncoupling of waste generation from economic growth.

Municipal waste represented slightly more of the state's totals than in 2012–13 in line with the waste stream's ever-increasing proportion of the state's total waste since the initial 2003 WARR Strategy.

C&I waste

In 2014–15, the C&I waste disposed made up 34% of the state total and 2.8 million tonnes or 28% of the state's recycling total – both increases on the 2012–13 figures.

Overall, 4.95 million tonnes of C&I waste were created, an increase of 183,000 tonnes over 2012–13 and comprising 169,000 tonnes in disposal and 13,000 tonnes of recycling. Total generation levels remained lower than the 2010–11 reporting period.

Significantly less waste was produced in several categories:

- ferrous metal recycling fell by 229,000 tonnes from 762,500 tonnes in 2012–13 to 520,000 tonnes in 2014–15
- food generation decreased from 532,500 to 317,000 tonnes
- other organics from 420,000 to 147,000 tonnes.

However, significantly more waste was produced in other categories:

- garden organics waste generated rose by 101,000 tonnes from 2012–13 to 484,000 tonnes in 2014–15, though still with a recycling rate of 75%
- timber disposal and recycling both increased overall by 313,000 tonnes
- sand/soil/rubble waste grew by 282,000 tonnes from 387,000 to 669,000 tonnes
- 205,000 additional tonnes of 'other' waste (such as hazardous or other non-recyclable waste) was produced and disposed of in 2014–15 compared with 2012–13.

C&D waste

The C&D waste stream is the largest contributor to waste created in the state. In 2014–15, 6.19 million tonnes of C&D waste were created, making up 37% of the state total. This stream also created the most recycling: 4.38 million tonnes or 42% of the total 10.4 million tonnes of waste recycled.

Between 2012–13 and 2014–15, the C&D waste generated fell by 793,000 tonnes. This was due to a 416,000 tonne fall in recycling and a 377,000 tonne fall in landfilling of C&D waste. As a result, the recycling rate for C&D waste rose from 68.7% to 70.7%.

Overall

Figure 28 shows the change in generation by waste stream between 2012–13 and 2014–15. As can be seen, there were large increases in materials such as garden organics, timber, paper and ferrous as opposed to falls in the generation of food, other organics, concrete/bricks/tiles and textiles.

Figure 28: Changes in waste generation by material across NSW – 2012–13 to 2014–15

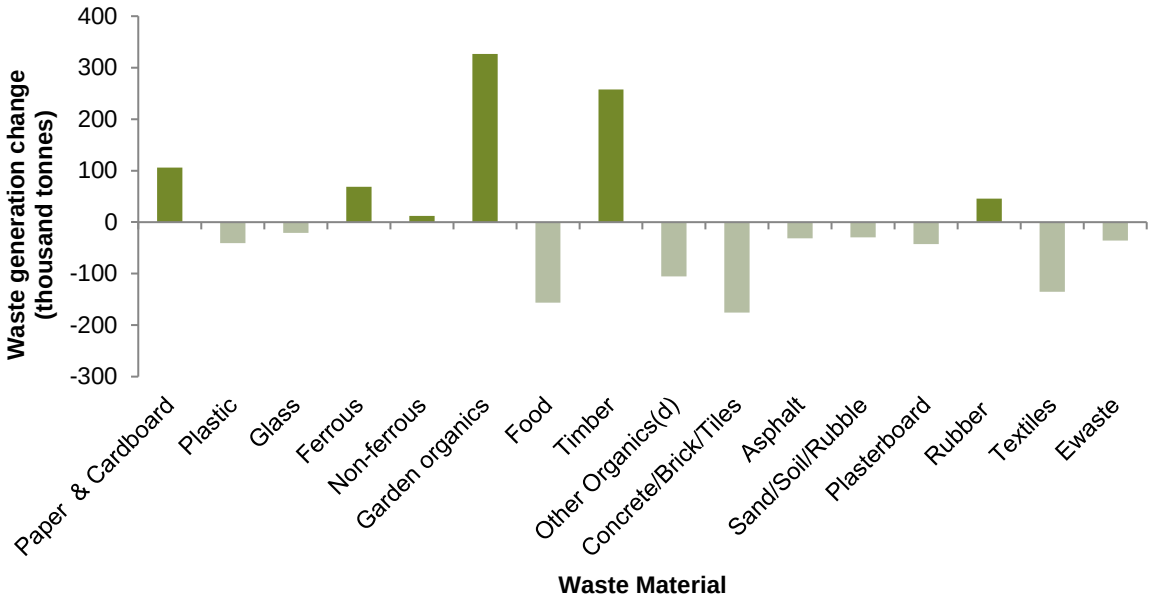
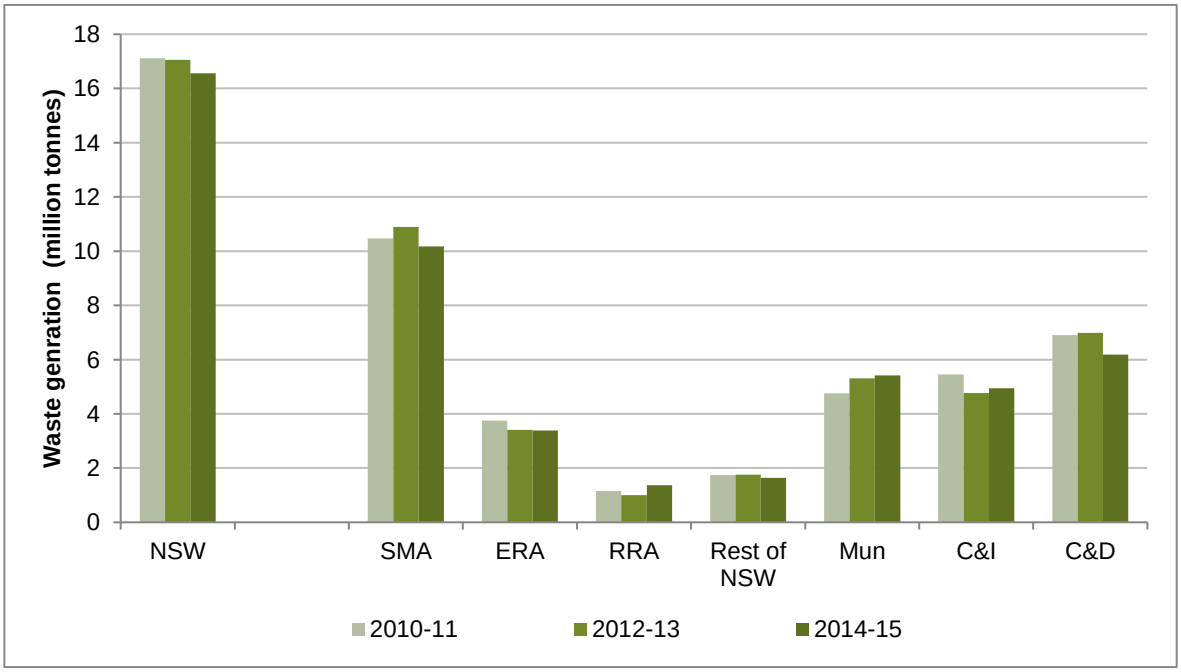


Figure 29 shows waste generation by regions and waste stream over a five-year period. It shows that overall waste generation has generally held or declined across the period as per the 2007 WARR Strategy target.

Figure 29: Waste generation by region and stream – 2010–11 to 2014–15



3. Reducing toxic substances in products and materials

2007 WARR Strategy target

By 2014, phase out priority substances in identified products as a first choice or, if not possible, achieve maximum recovery for reuse.

NSW is keen to control the use of toxic substances in products and reduce the disposal of problem wastes. However national market needs limit how Australian states can deal with the content of many products. Thus, NSW works closely with several groups to create coordinated and consistent national action including as the following:

- the Australian Government
- other state and territory governments
- local government
- industry
- the broader community.

New guidelines and stewardship schemes are reducing toxic materials in products.

3.1 Product content limits

One example of product content control is NSW support for the Australian Government setting mandatory limits on mercury in fluorescent lamps.

The EPA is also working with the PVC industry through the Vinyl Council of Australia (VCA) to phase out heavy metals in additives by a range of dates. Through this initiative:

- cadmium stabilisers were phased out in 2004
- lead stabiliser has been effectively phased out by VCA members with a 99% drop in its use since 2002.

The PVC industry is also making good progress in planning for the phase-out of lead, cadmium and hexavalent chrome pigments when this becomes technically possible and alternatives are available.

3.2 Product stewardship

Product stewardship schemes aim to properly manage and, if possible, recycle waste products that contain toxic substances. These fall under federal product stewardship framework legislation which came into effect in August 2011.

NSW has worked nationally to help develop a new scheme for televisions and computers. The state also continues to work with a number of existing schemes to make sure they are used effectively and these include:

- ChemClear and DrumMuster for agricultural and veterinary chemicals and chemical containers
- MobileMuster for mobile phones
- Fluorocycle for mercury-containing lamps used in the commercial sector, which is responsible for an estimated 90% of this type of mercury
- the Product Stewardship for Oil Program for used motor oil.

3.3 Toxic household waste

A total of 1,900 tonnes of toxic waste was collected in 2014–15 and an additional 18 new recycling centres opened to help households safely dispose of problem waste.

The EPA is directly involved in the safe recovery and treatment of household problem waste products and materials through its Household Chemical CleanOut program for highly toxic wastes and Community Recycling Centres program for low-toxicity wastes.

Household Chemical CleanOut program

Since 2003, the Household Chemical CleanOut program has given householders a safe and environmentally appropriate way to dispose of potentially hazardous household waste. The program is run by the EPA and local governments in the Sydney, Hunter and Illawarra regions and funds similar local government programs in regional NSW.

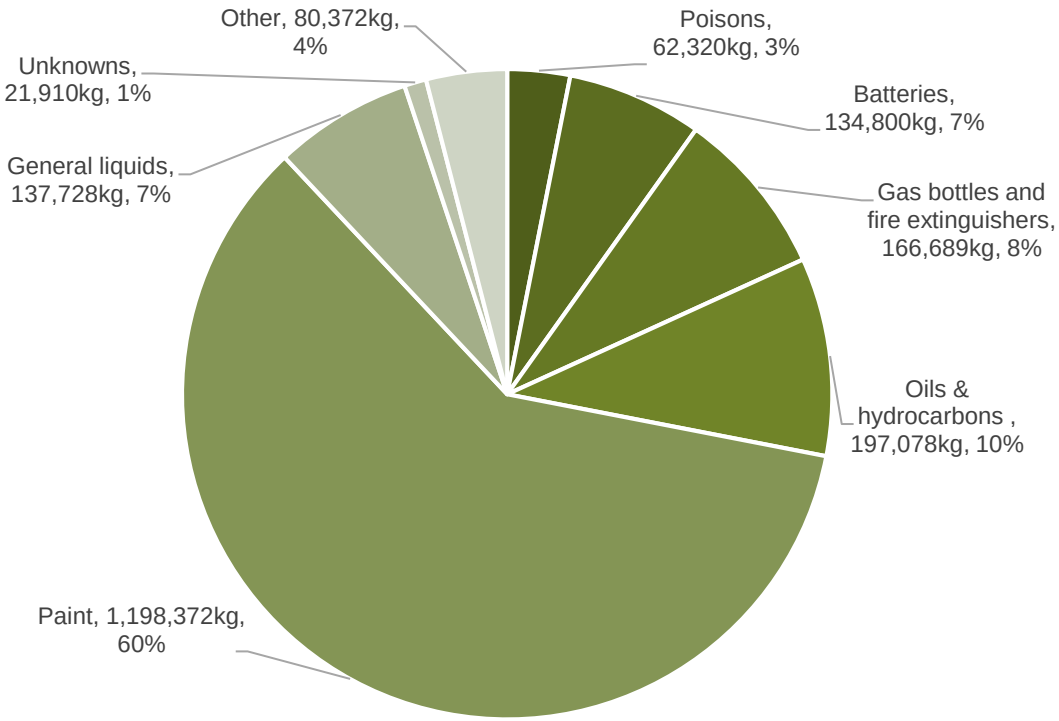
Between 2003 and 2014–15, the CleanOut program has supported over 360,000 NSW households with more than 13,900 tonnes of hazardous household waste collected during the lifetime of the program. In 2014–15 alone, the service received more than 1,900 tonnes of toxic problem wastes through 148 collection events involving over 50,100 households.

Of the materials collected, more than 85% (by weight) came from four products:

- paint (60%)
- motor oils (10%)
- gas bottles and fire extinguishers 8%
- batteries (7%).

The remainder comprised low-volume, high-toxicity items, including poisons and pesticides.

Figure 30: Materials collected in Household Chemical CleanOut and regional events – 2014–15



Community Recycling Centres

Community Recycling Centres (CRCs) are fixed sites that accept low-toxic, high-volume wastes such as paint, oil, gas bottles, batteries, fluorescent globes and old smoke detectors all year round. CRCs make it easier for householders to recycle and remove problem waste from bins and complement the Household Chemical CleanOut mobile events.

In 2014–15, the following new CRCs became operational, bringing the total in NSW to 21:

- Bathurst
- Blue Mountains
- Bungendore
- Casino
- Coffs Harbour
- Gilgandra
- Grafton
- Kempsey
- Kyogle
- Lake Macquarie
- Lismore
- Liverpool
- Maclean
- Nambucca
- Port Macquarie
- Salamander Bay
- Taree
- Uralla

In 2014–15, $5.2 million in grant funding was awarded and the plan is to expand the CRC network to 101 centres. Since the start of the program in 2012 a total of 72 grant recipients have been awarded funding.

4. Reducing litter and illegal dumping

The 2007 WARR Strategy sets annual reduction targets for litter and illegal dumping. Also, Section 146D of the *Protection of the Environment Operations Act 1997* (POEO Act) requires the EPA to report regularly on litter quantities and types, as well as places that have significant littering.

The EPA sources its data from the Keep Australia Beautiful (KAB) National Litter Index survey, which has been running since 2005–06. The survey covers both litter and illegal dumping.

4.1 Litter

2007 WARR Strategy target

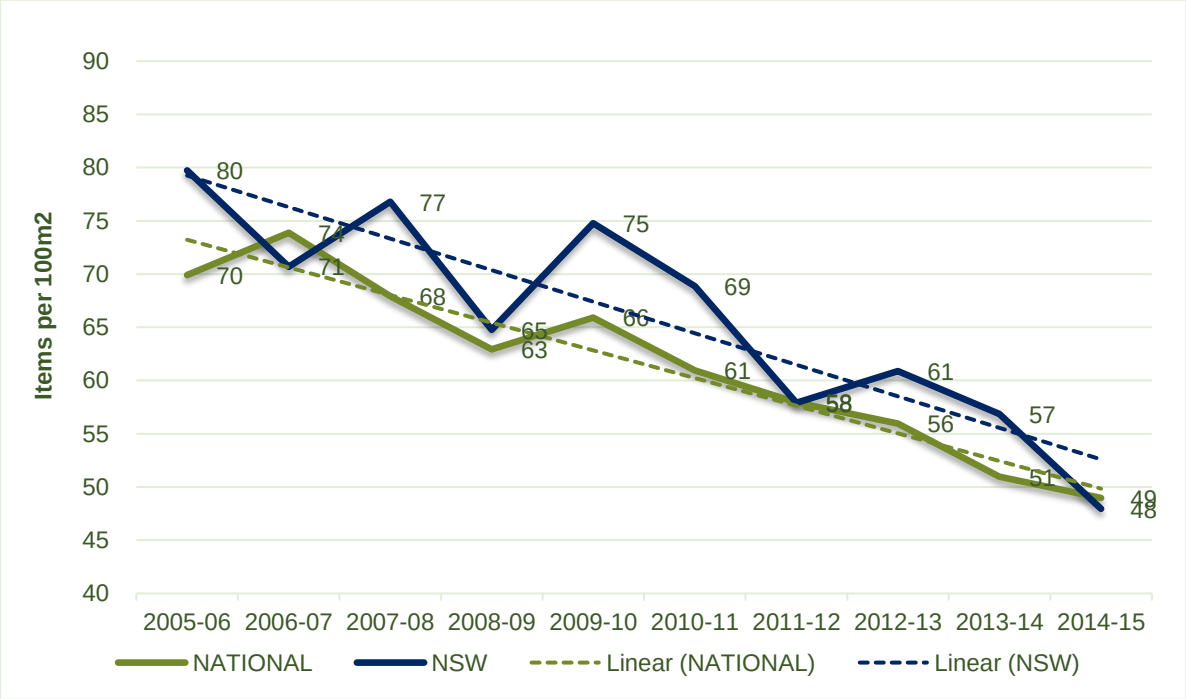
By 2014, reduce the total amount of litter reported yearly.

The downward trend for litter continues, although there was a small rise in 2012–13.

Since the first KAB litter survey in 2005–06, NSW has reduced the number of items littered by 66%. While there have been yearly ups and downs, the data shows a clear downward trend. In 2012–13, litter increased slightly from the previous year but declined again thereafter to be 21% lower in 2014–15 than 2012–13.

The number of litter items fell from 80 per 1,000 square metres in 2005–06 to 48 items in 2014–15, putting NSW below the national average for the first time since 2006–07 (see Figure 31).

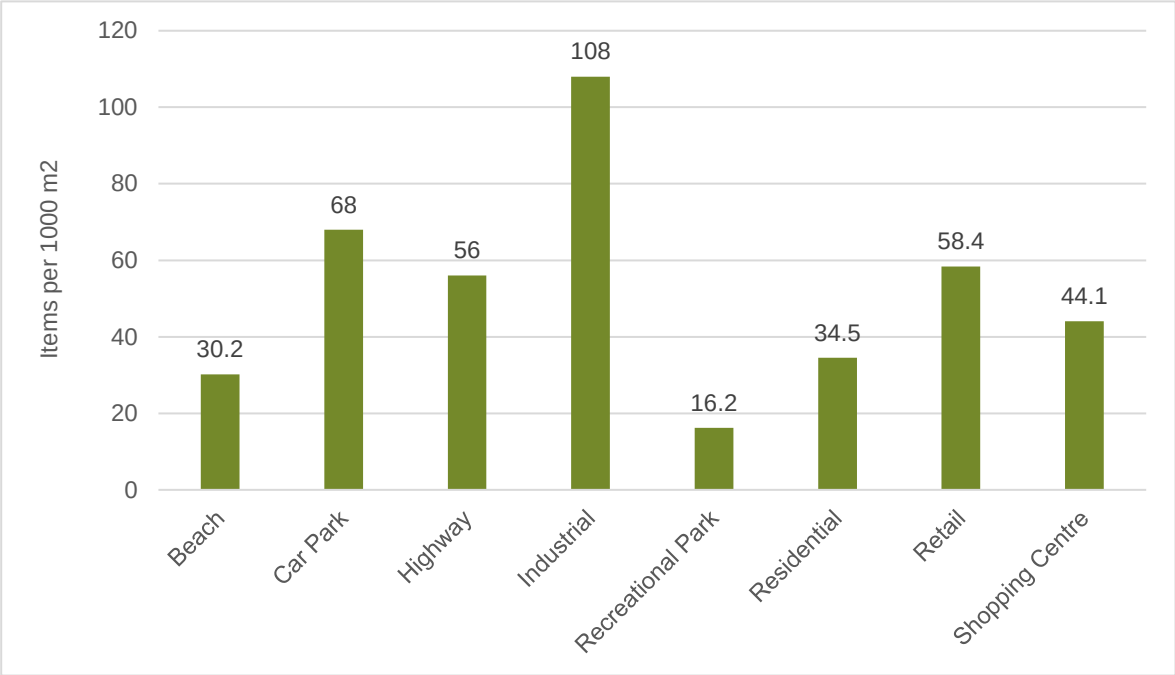
Figure 31: State and national litter items per 1,000 m^2 – 2005–06 to 2014–15



Source: Keep Australia Beautiful National Litter Index 2014–15.

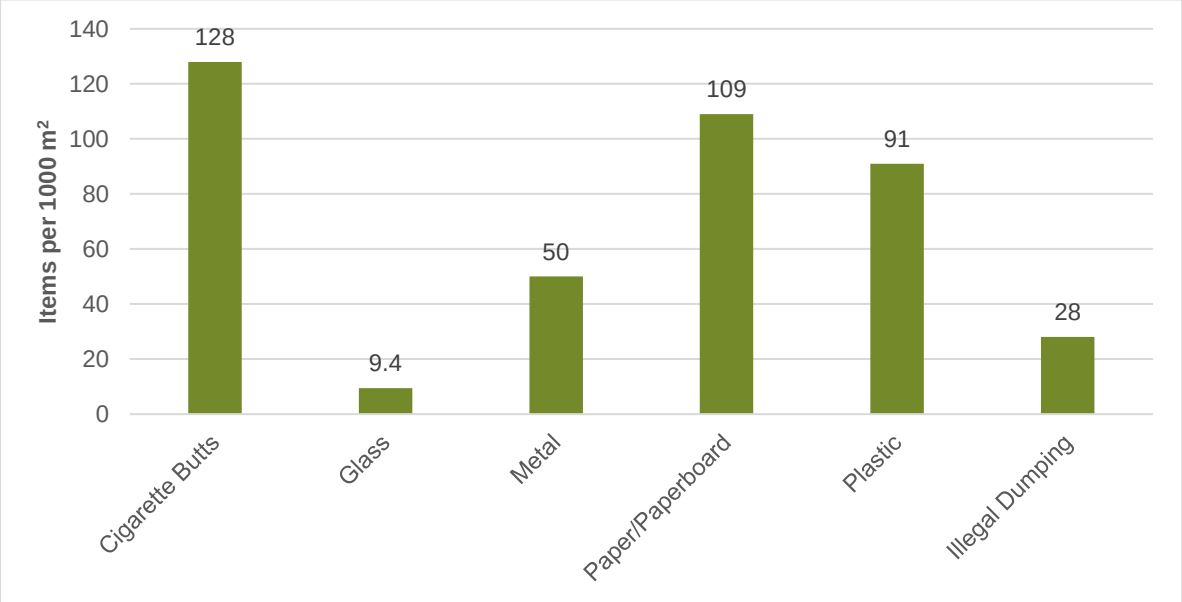
The amount of litter varies according to location. More littering occurs in industrial sites, car parks and retail sites, but less at beaches, residential places and recreational parks. Litter on highways was around the average. Figure 32 shows the breakdown.

Figure 32: Litter items per 1,000 m² by site type – 2014–15



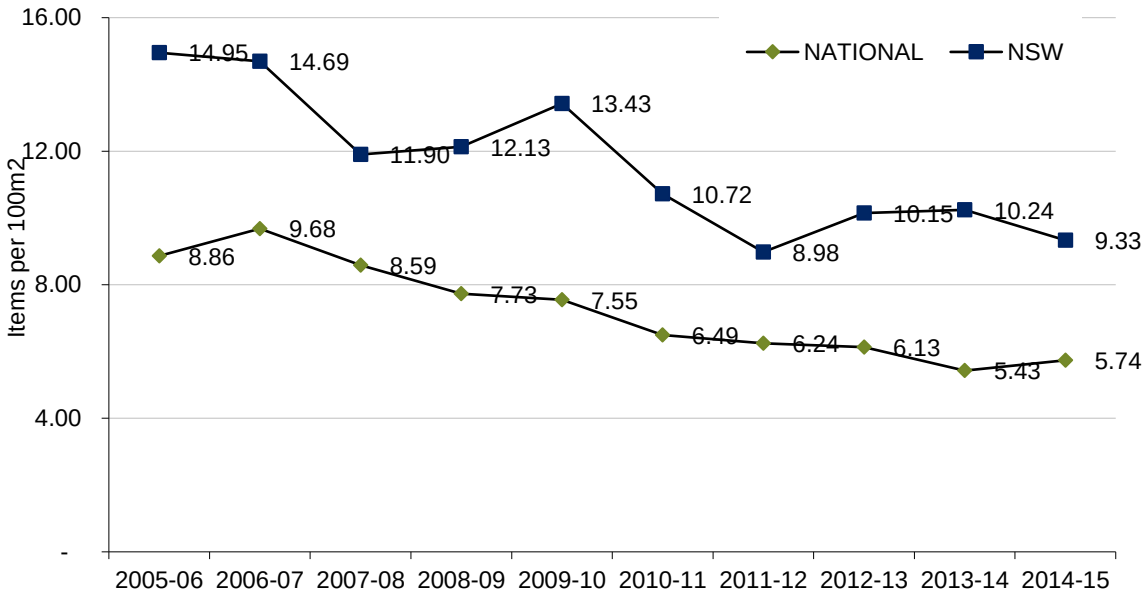
The litter survey found that cigarette butts were the most frequently littered item in 2014–15, with 128 butts per 1,000 square metres. Paper/paperboard and plastic items were the second and third most littered items (see Figure 33).

Figure 33: Most common litter items per 1,000 m² by site type – 2014–15



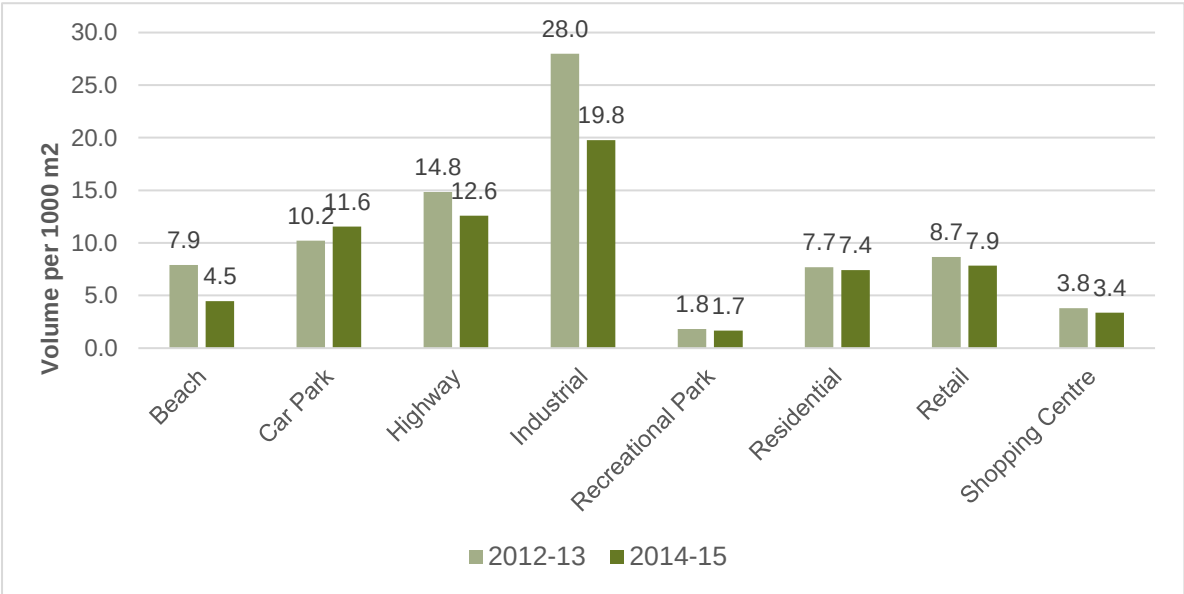
Litter can also be analysed by volume instead of number. The KAB index uses standard calculations for each item counted to estimate the overall volume. In 2014–15, the volume of litter decreased by 8% from 2012-13 (see Figure 34).

Figure 34: Estimated litter volume per 1,000 m² by type – 2005–06 to 2014–15



Litter volume was highest in industrial sites, followed by highways and car parks (Figure 35). Both industrial sites and highways had significantly less litter than 2012-13, while the rise in car parks was minimal. Recreational parks, shopping centres and beaches continue to be the least littered sites by volume.

Figure 35: Estimated litter volume per 1,000 m² by site type – 2012–13 – 2014-15



State and local government continued strongly enforce anti-littering behaviour. In April 2014, the first *Hey Tosser!* statewide litter campaign went live, followed up in April 2015 by Phase 2 of the campaign.

4.2 Illegal dumping

NSW Illegal Dumping Strategy

The *NSW Illegal Dumping Strategy 2014–16* aims to deliver an integrated approach to combat illegal dumping. The EPA is leading the work to deliver the strategy by coordinating the efforts of many stakeholders working to combat illegal dumping and managing the funding for that work.

As part of the *Waste Less, Recycle More* initiative, the NSW Government allocated $58 million over five years to support initiatives across NSW.

The strategy targets five priority waste types:

- asbestos waste
- construction and demolition waste
- household waste
- end-of-life tyres
- garden waste.

Nature and extent of illegal dumping in NSW

Building accurate information on the nature and extent of illegal dumping is difficult because the intent behind this dumping is to keep it out of sight, undetected and anonymous. As a result, information about illegal dumping in NSW is limited. Local government and other land managers collect information relating to the clean-up of illegally dumped waste, but the data is insufficient to provide a realistic assessment.

As part of the strategy, a statewide illegal dumping database is being developed.

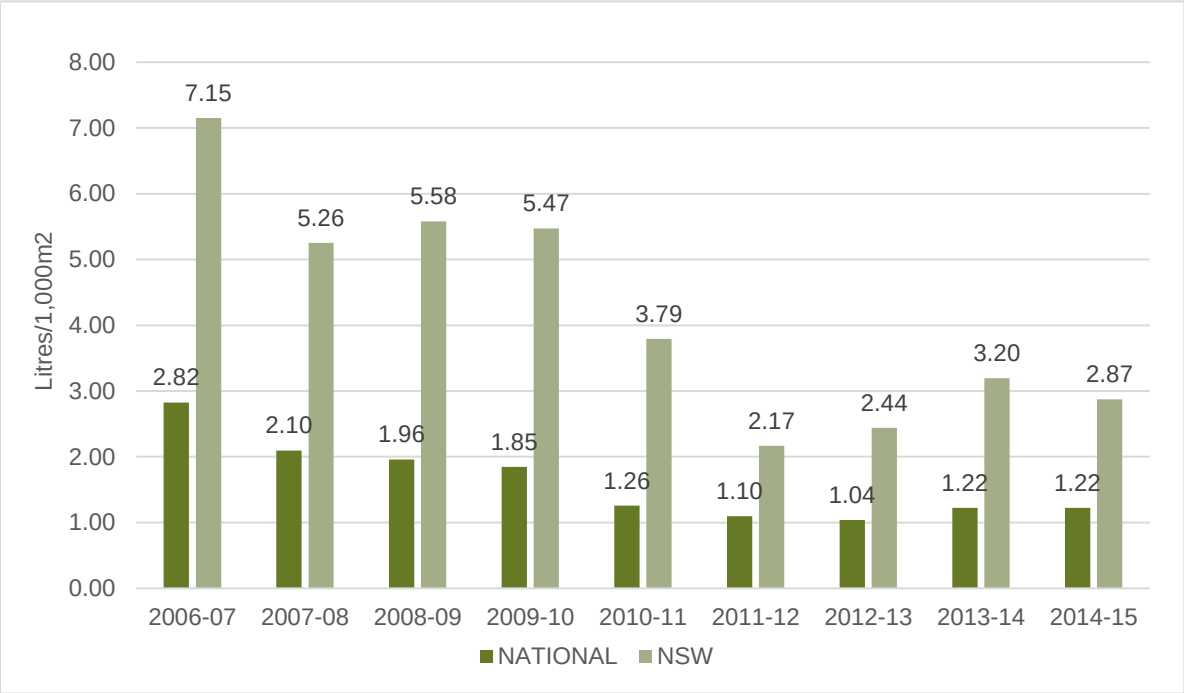
Preventing illegal dumping

Under the Illegal Dumping Coordination program, a total of $4,569,792 in payments were made in 2014–15 which included:

- $1.56 million for public land managers to run 15 clean-up and prevention projects under round one of the Combatting Illegal Dumping Clean-up and Prevention Program
- $15,439 awarded to fund a pilot program to reduce illegal dumping at charitable recyclers
- $781,000 for 23 NSW councils to trial a 12-month asbestos disposal scheme for residents from July 2014
- $1.96 million in ongoing funding for the four Regional Illegal Dumping (RID) Squads now in operation – the Hunter Central Coast RID Squad, Western Sydney RID Squad, Southern Councils Group RID Program and Inner West RID Squad
- $253,353 awarded to eight projects to clean up and prevent illegal dumping on Aboriginal-owned land.

The KAB survey showed a slight increase in illegal dumping from the estimated low of 2.17 litres per 1,000 square metres in 2011–12 to 3.2 litres in 2013–14 and then a reduction in 2014–15 to 2.87 litres (Figure 36). The national average of 1.22 litres per 1,000 square metres remained the same over the past two years (Figure 36).

Figure 36: NSW and national illegal dumping volume per 1,000 m² – 2006–07 to 2014–15



5. Supporting the WARR Strategy

The NSW Government has a comprehensive framework of policies and programs to help achieve the WARR Strategy's objectives and targets. This includes a mix of legislative and economic tools and policies, as well as education programs and grants.

5.1 Legal framework

The regulatory framework for waste is provided by the following legislation:

- *Protection of the Environment Operations Act 1997* (POEO Act)
- *Waste Avoidance and Resource Recovery Act 2001* (WARR Act)
- Protection of the Environment Operations (Waste) Regulation 2005.

These key laws set out the requirements for managing, storing, transporting, processing, recovering and disposing of waste.

They include resource recovery exemptions that allow waste materials to be reused as fuel or applied to land. These exceptions are genuine, effective and pose minimal risk of harm to the environment or human health. Since 2008, 31 general and 150 specific exemptions have been issued. This has allowed over 2.6 million tonnes of waste to be beneficially reused.

The POEO Act is the state's main environment protection law. It also includes the government's key economic instrument for driving waste avoidance and greater resource recovery: The Waste and Environment Levy. This levy applies to waste at licensed waste disposal facilities. By increasing the cost of waste disposal, it makes avoidance and recovery more viable and stimulates investment and innovation in recovery technology.

5.2 Waste Less, Recycle More

In January 2012, the then Minister for the Environment announced an independent review of the NSW Waste and Environment Levy. This review included consideration about how to fund programs to create more investment in recycling infrastructure and resource recovery.

In response to the review's recommendations, the NSW Government announced the five-year $465.7 million *Waste Less, Recycle More* initiative in February 2013. The NSW Government has since allocated an additional $337 over four years to 2021, bringing the total funding to $802 million over nine years from 2012.

Waste Less, Recycle More (2012-2017) is a mix of programs and grants to comprehensively improve the management of waste materials through the NSW economy and has the following funding components:

- $250 million Waste and Recycling Infrastructure Package, including:
    - Organics Infrastructure Fund ($70 million)
    - Community Recycling Centre Fund ($70 million)
    - Waste and Recycling Infrastructure Fund ($60 million)
    - Business Recycling Fund ($35 million)
    - Recycling Innovation Fund ($15 million)
- $137.7 million Supporting Local Communities Fund, including:
    - Waste and Sustainability Improvement Payment Transition Fund ($38.7 million)
    - Local Government Waste and Resource Recovery Fund ($70 million)
    - Regional Local Government Fund ($13 million)
    - Regional Waste Avoidance and Resource Recovery Strategy Fund ($9 million)
    - Regional Landfill Consolidation Fund ($7 million)
- $58 million Illegal Dumping Fund

- $20 million Litter Fund.

The *Waste Less, Recycle More* initiative supports action at all stages of the waste management process to help achieve the WARR Strategy targets. This includes:

- waste avoidance
- source separation and collection
- infrastructure and processing
- end-markets for recovered materials
- litter and illegal dumping.

The data in this report, along with wide consultation, is helping develop grants and programs under the initiative. For more information, please visit www.epa.nsw.gov.au/waste/WasteLess.htm

5.3 Litter Prevention Program 2014–2015

A comprehensive new strategy will help the community reduce litter.

Litter

Through the *Waste Less, Recycle More* initiative, $20 million in funding was committed by the NSW Government to revitalise litter reduction programs to 2017. Action has been focused on four 'pillars' of litter prevention which need to be delivered in an integrated program to achieve the most effective litter reduction:

1. ***Education and awareness***: In April 2014, the first *Hey Tosser!* statewide litter campaign went live, followed in April 2015 by Phase 2 of the campaign. The campaign calling on the community to 'put it in the bin' and 'take your rubbish with you' was seen on TV, billboards, in print and heard on radio. In 2015, a new message was added to 'report littering to the EPA'.

2. ***Enforcement:*** In February 2015, the EPA launched a new Report to EPA system, inviting community members to report littering from vehicles. The EPA can issue fines based on community reports, contrasting with the previous system where the EPA could only issue warning letters. The new reporting avenue resulted in an immediate and enthusiastic take-up by the community with 7,111 people registering to report littering from vehicles between February and the end of June 2015 and the EPA receiving 5,027 reports. As a result, the EPA issued 2,848 littering from vehicles fines in 2014–15, compared with 492 fines in 2013–14.

3. ***Infrastructure:*** The EPA awarded $2.29 million in grants to councils for litter prevention in 2014–15. These projects achieved an average 60% litter reduction in identified hot spots. Grants are used to fund better infrastructure, including bins and signage as well as other activities.

4. ***Monitoring and evaluation:*** The EPA continues to monitor the performance of its litter programs across many levels, including both litter counts on the ground and social research into litter attitudes and behaviours.

Acronyms and terms

AWT	Alternative waste technologies
C&D	Construction and demolition waste
C&I	Commercial and industrial waste
Combined Area	The Regional Regulated Area plus Rest of State
EPA	Environment Protection Authority NSW
Extended Regulated Area (ERA)	Extended Regulated Area, including the Hunter, Central Coast and Illawarra regions
Organics	Mainly bark, leaves, twigs and lawn clippings. Food and garden organics (FOGO) also includes household food scraps.
Recyclables	Household recyclables are collected from three sources: • Kerbside collection picks up mixed paper, newspaper, magazines, cardboards, plastic films and bottles, steel and aluminium cans and glass bottles. • Drop-off facilities accept electronic waste (e-waste), batteries, gas bottles and oils. • Clean-up services collect large metals and bulky goods.
Recycling rate	The percentage of all waste that is recycled, calculated as: $\frac{\text{total recycled}}{\text{total collected}} \times 100$
Regional Regulated Area (RRA)	The Regional Regulated Area includes Ballina, Bellingen, Blue Mountains, Byron, Clarence Valley, Coffs Harbour, Dungog, Gloucester, Great Lakes, Greater Taree, Kempsey, Kyogle, Lismore, Muswellbrook, Nambucca, Port Macquarie–Hastings, Richmond Valley, Singleton, Tweed, Upper Hunter, Wollondilly LGAs.
Reprocessor	A recycling plant that processes recyclables into usable forms
Residual waste	Waste to be disposed at landfill, less recyclables and organics
Rest of State	Everywhere in NSW except for the Sydney Metro, Extended Regulated Area and Regional Regulated Area.
RID	Regional illegal dumping
Sydney Metro (SMA)	Sydney metropolitan area
WARR Strategy	Waste Avoidance and Resource Recovery Strategy

Appendix A: Data collection and calculations

Data sources

This report is based on 2014–15 data gathered from many sources. The main sources are:

- council reports on the amount and composition of materials disposed of and recovered, based on an annual survey and kerbside bin audits
- a survey of C&D reprocessors by MRA Consulting for the EPA
- a survey of organics reprocessors by Australian Organics Recycling Association for the EPA
- a survey of glass reprocessors by MS2 for the EPA
- a national survey of plastics reprocessors by the Plastics and Chemicals Industries Association for the EPA, other states and territories and the plastics industry
- a survey of paper reprocessors by IndustryEdge for the EPA
- mandatory monthly reports on disposal and recovery tonnages at disposal facilities that pay the Waste and Environment Levy
- mandatory annual reports on waste disposal tonnages at waste facilities in the rest of the state
- information on hazardous materials and products from the Household Chemical CleanOut Program
- reports from product stewardship initiatives such as the ChemClear program
- reports on litter and illegal dumping from:
    - the Keep Australia Beautiful survey (supported by the EPA)
    - the Regional Illegal Dumping (RID) squads (co-funded by the EPA)
    - calculations based on penalty infringement notices.

Resource recovery data

Resource recovery figures are extrapolated from data supplied by local government and reprocessors. High-quality disposal data is drawn from weighbridge records in the regulated areas: Sydney Metro and the Extended Regulated Area.

In July 2009, a new regulated area was formed: the Regional Regulated Area. This includes 18 councils from the north-east coast plus the Upper Hunter, Blue Mountains and Wollondilly councils. Although disposal data is collected for the Regional Area, the systems are not yet robust and this data is only included along with the Rest of State results in some cases.

Limits to the data

Some data sources and measurement methods affect the results. For example, recycling is estimated based on material passing through reprocessors. This means that materials reused without going through a reprocessor are not measured and so the actual recycling rate is being underestimated. Examples of unreported recycling are:

- demolition material used on site for road base or fill
- demolition material transported by a construction company for reuse off site
- commercial and industrial materials sent directly from one business to another for reuse
- organic waste composted at home.

Appendix B: Waste data by region

Total tonnes

	Created	Disposed	Recycled	% Recycled
NSW 2014–15	16,558,000	6,154,000	10,404,000	63%
NSW 2012–13	17,062,000	6,473,000	10,589,000	62%
NSW 2010–11	17,112,000	6,400,000	10,713,000	63%
NSW 2008–09	16,262,000	6,733,000	9,529,000	59%
NSW 2006–07	15,359,000	7,365,000	7,995,000	52%
NSW 2004–05	13,118,000	7,100,000	6,019,000	46%
NSW 2002–03	11,804,000	6,507,000	5,297,000	45%
Sydney Metro 2014–15	10,171,000	3,557,000	6,614,000	65%
Sydney Metro 2012–13	10,895,000	4,033,000	6,862,000	63%
Sydney Metro 2010–11	10,466,000	3,747,000	6,719,000	64%
Sydney Metro 2008–09	10,557,000	3,980,000	6,577,000	62%
Sydney Metro 2006–07	9,774,000	4,467,000	5,308,000	54%
Sydney Metro 2004–05	8,901,000	4,574,000	4,328,000	49%
Sydney Metro 2002–03	8,514,000	4,392,000	4,122,000	48%
Extended Area 2014–15	3,389,000	1,167,000	2,222,000	66%
Extended Area 2012–13	3,408,000	1,044,000	2,364,000	69%
Extended Area 2010–11	3,747,000	1,199,000	2,548,000	68%
Extended Area 2008–09	3,255,000	1,325,000	1,931,000	59%
Extended Area 2006–07	2,774,000	1,217,000	1,557,000	56%
Extended Area 2004–05	2,269,000	1,124,000	1,144,000	50%
Extended Area 2002–03	1,969,000	1,037,000	932,000	47%
Regional Area 2014–15	1,362,000	681,000	681,000	50%
Regional Area 2012–13	999,000	479,000	520,000	52%
Regional Area 2010–11	1,152,000	498,000	654,000	57%
Rest of State 2014–15	1,636,000	748,000	888,000	54%
Rest of State 2012–13	1,760,000	917,000	843,000	48%
Rest of State 2010–11	1,747,000	956,000	792,000	45%
Combined Area 2014–15	2,998,000	1,429,000	1,569,000	52%
Combined Area 2012–13	2,759,000	1,397,000	1,362,000	49%
Combined Area 2010–11	2,900,000	1,454,000	1,446,000	50%
Combined Area 2008–09	2,449,000	1,428,000	1,021,000	42%
Combined Area 2006–07	2,811,000	1,681,000	1,130,000	40%
Combined Area 2004–05	1,948,000	1,402,000	547,000	28%
Combined Area 2002–03	1,322,000	1,079,000	243,000	18%

* Tonnage figures have been rounded.
# Before 2010–11, 'Rest of State' included all areas outside the regulated areas, including those areas now in the Regional (Regulated) Area. In 2010–11, 2012–13 and 2014–15, Rest of State includes the non-regulated area only. 'Combined Area' includes the Regional (Regulated) Area and all remaining areas outside the regulated area. It is reported separately here for direct comparison with previous progress reports.

Municipal tonnes

	Created	Disposed	Recycled	% Recycled
NSW 2014–15	5,422,000	2,269,000	3,154,000	58%
NSW 2012–13	5,316,000	2,380,000	2,936,000	55%
NSW 2010–11	4,755,000	2,298,000	2,457,000	52%
NSW 2008–09	4,248,000	2,385,000	1,864,000	44%
NSW 2006–07	3,890,000	2,408,000	1,482,000	38%
NSW 2004–05	3,181,000	2,144,000	1,038,000	33%
NSW 2002–03	3,102,000	2,156,000	946,000	30%
Sydney Metro 2014–15	2,988,000	1,250,000	1,738,000	58%
Sydney Metro 2012–13	2,950,000	1,198,000	1,752,000	59%
Sydney Metro 2010–11	2,454,000	1,000,000	1,455,000	59%
Sydney Metro 2008–09	2,126,000	1,050,000	1,076,000	51%
Sydney Metro 2006–07	1,895,000	1,094,000	801,000	42%
Sydney Metro 2004–05	1,626,000	1,021,000	605,000	37%
Sydney Metro 2002–03	1,782,000	1,186,000	596,000	33%
Extended Area 2014–15	1,064,000	418,000	645,000	61%
Extended Area 2012–13	1,051,000	463,000	588,000	56%
Extended Area 2010–11	1,020,000	502,000	518,000	51%
Extended Area 2008–09	896,000	506,000	389,000	43%
Extended Area 2006–07	858,000	507,000	351,000	41%
Extended Area 2004–05	724,000	485,000	239,000	33%
Extended Area 2002–03	669,000	480,000	190,000	28%
Regional Area 2014–15	681,000	298,000	383,000	56%
Regional Area 2012–13	482,000	243,000	239,000	50%
Regional Area 2010–11	502,000	274,000	228,000	45%
Rest of State 2014–15	689,000	302,000	387,000	56%
Rest of State 2012–13	833,000	477,000	356,000	43%
Rest of State 2010–11	780,000	522,000	258,000	33%
Combined Area 2014–15	1,370,000	600,000	770,000	56%
Combined Area 2012–13	1,315,000	720,000	595,000	45%
Combined Area 2010–11	1,281,000	796,000	485,000	38%
Combined Area 2008–09	1,227,000	828,000	398,000	32%
Combined Area 2006–07	1,138,000	808,000	330,000	29%
Combined Area 2004–05	831,000	638,000	193,000	23%
Combined Area 2002–03	652,000	491,000	161,000	25%

* Tonnage figures have been rounded.
# Before 2010–11, 'Rest of State' included all areas outside the regulated areas, including those areas now in the Regional (Regulated) Area. In 2010–11, 2012–13 and 2014–15, Rest of State includes the non-regulated area only. 'Combined Area' includes the Regional (Regulated) Area and all remaining areas outside the regulated area. It is reported separately here for direct comparison with previous progress reports.

C&I tonnes

	Created	Disposed	Recycled	% Recycled
NSW 2014–15	4,946,000	2,073,000	2,872,000	58%
NSW 2012–13	4,763,000	1,904,000	2,859,000	60%
NSW 2010–11	5,452,000	2,352,000	3,100,000	57%
NSW 2008–09	5,425,000	2,589,000	2,836,000	52%
NSW 2006–07	5,218,000	2,921,000	2,297,000	44%
NSW 2004–05	4,819,000	2,984,000	1,835,000	38%
NSW 2002–03	4,014,000	2,643,000	1,371,000	34%
Sydney Metro 2014–15	2,992,000	1,162,000	1,830,000	61%
Sydney Metro 2012–13	2,850,000	1,167,000	1,682,000	59%
Sydney Metro 2010–11	3,358,000	1,627,000	1,732,000	52%
Sydney Metro 2008–09	3,671,000	1,854,000	1,817,000	49%
Sydney Metro 2006–07	3,615,000	2,087,000	1,528,000	42%
Sydney Metro 2004–05	3,461,000	2,246,000	1,215,000	35%
Sydney Metro 2002–03	3,051,000	2,030,000	1,022,000	33%
Extended Area 2014–15	1,012,000	405,000	607,000	60%
Extended Area 2012–13	904,000	289,000	615,000	68%
Extended Area 2010–11	953,000	283,000	670,000	70%
Extended Area 2008–09	905,000	358,000	547,000	60%
Extended Area 2006–07	737,000	383,000	354,000	48%
Extended Area 2004–05	763,000	362,000	401,000	53%
Extended Area 2002–03	595,000	325,000	270,000	45%
Regional Area 2014–15	420,000	244,000	176,000	42%
Regional Area 2012–13	361,000	150,000	210,000	58%
Regional Area 2010–11	444,000	128,000	316,000	71%
Rest of State 2014–15	522,000	262,000	259,000	50%
Rest of State 2012–13	648,000	297,000	351,000	54%
Rest of State 2010–11	696,000	314,000	381,000	55%
Combined Area 2014–15	942,000	506,000	436,000	46%
Combined Area 2012–13	1,009,000	448,000	561,000	56%
Combined Area 2010–11	1,140,000	442,000	697,000	61%
Combined Area 2008–09	849,000	376,000	473,000	56%
Combined Area 2006–07	866,000	451,000	415,000	48%
Combined Area 2004–05	595,000	376,000	219,000	37%
Combined Area 2002–03	368,000	289,000	80,000	22%

* Tonnage figures have been rounded.
[#] Before 2010–11, 'Rest of State' included all areas outside the regulated areas, including those areas now in the Regional (Regulated) Area. In 2010–11, 2012–13 and 2014–15, Rest of State includes the non-regulated area only. 'Combined Area' includes the Regional (Regulated) Area and all remaining areas outside the regulated area. It is reported separately here for direct comparison with previous progress reports.

C&D tonnes

	Created	Disposed	Recycled	% Recycled
NSW 2014–15	6,190,000	1,811,000	4,378,000	71%
NSW 2012–13	6,983,000	2,188,000	4,795,000	69%
NSW 2010–11	6,905,000	1,749,000	5,156,000	75%
NSW 2008–09	6,589,000	1,760,000	4,829,000	73%
NSW 2006–07	6,251,000	2,035,000	4,216,000	67%
NSW 2004–05	5,118,000	1,972,000	3,146,000	61%
NSW 2002–03	4,688,000	1,708,000	2,981,000	64%
Sydney Metro 2014–15	4,191,000	1,145,000	3,045,000	73%
Sydney Metro 2012–13	5,095,000	1,667,000	3,427,000	67%
Sydney Metro 2010–11	4,653,000	1,120,000	3,533,000	76%
Sydney Metro 2008–09	4,760,000	1,076,000	3,684,000	77%
Sydney Metro 2006–07	4,265,000	1,286,000	2,979,000	70%
Sydney Metro 2004–05	3,815,000	1,307,000	2,508,000	66%
Sydney Metro 2002–03	3,681,000	1,177,000	2,505,000	68%
Extended Area 2014–15	1,313,000	343,000	970,000	74%
Extended Area 2012–13	1,453,000	292,000	1,161,000	80%
Extended Area 2010–11	1,774,000	414,000	1,360,000	77%
Extended Area 2008–09	1,455,000	460,000	995,000	68%
Extended Area 2006–07	1,179,000	327,000	851,000	72%
Extended Area 2004–05	781,000	277,000	504,000	65%
Extended Area 2002–03	705,000	232,000	473,000	67%
Regional Area 2014–15	261,000	139,000	122,000	47%
Regional Area 2012–13	157,000	86,000	71,000	45%
Regional Area 2010–11	207,000	96,000	111,000	54%
Rest of State 2014–15	425,000	184,000	241,000	57%
Rest of State 2012–13	279,000	143,000	136,000	49%
Rest of State 2010–11	272,000	119,000	153,000	56%
Combined Area 2014–15	686,000	323,000	363,000	53%
Combined Area 2012–13	435,000	229,000	206,000	47%
Combined Area 2010–11	479,000	215,000	264,000	55%
Combined Area 2008–09	373,000	224,000	150,000	40%
Combined Area 2006–07	807,000	422,000	386,000	48%
Combined Area 2004–05	522,000	388,000	134,000	26%
Combined Area 2002–03	302,000	299,000	3,000	1%

* Tonnage figures have been rounded.
# Before 2010–11, 'Rest of State' included all areas outside the regulated areas, including those areas now in the Regional (Regulated) Area. In 2010–11, 2012–13 and 2014–15, Rest of State includes the non-regulated area only. 'Combined Area' includes the Regional (Regulated) Area and all remaining areas outside the regulated area. It is reported separately here for direct comparison with previous progress reports.

Appendix C: Waste data by stream and material

	Disposal (tonnes)				Recycling (tonnes)			
	Municipal	**C&I**	**C&D**	**Total**	**Municipal**	**C&I**	**C&D**	**Total**
Masonry materials	**22,000**	**257,000**	**442,000**	**21,000**	**215,500**	**521,000**	**3,252,500**	**3,989,000**
Asphalt	–	–	–	–	14,500	–	550,500	565,000
Concrete/bricks/tiles	10,500	79,000	306,500	396,000	25,500	11,000	2,249,000	2,285,500
Rubble	11,500	178,000	135,000	324,500	175,500	491,000	453,000	1,119,500
Plasterboard/cement sheets	–	–	500	500	–	19,000	–	19,000
Metals	**45,000**	**47,000**	**39,500**	**131,500**	**547,000**	**614,000**	**480,000**	**1,641,000**
Steel	36,500	38,500	32,000	107,000	491,500	520,000	433,500	1,445,000
Aluminium	7,500	7,500	6,500	21,500	24,000	41,000	20,000	85,000
Non-ferrous metals (excl. aluminium)	1,000	1,000	1,000	3,000	31,500	53,000	26,500	111,000
Organics	**1,264,000**	**593,500**	**278,000**	**2,135,500**	**1,512,500**	**873,500**	**172,500**	**2,558,500**
Food organics	724,000	198,500	–	922,500	188,000	118,500	–	306,500
Garden organics	342,500	119,500	123,500	585,500	727,500	365,000	77,000	1,169,500
Timber	29,500	293,500	147,500	470,500	8,000	224,500	95,500	328,000
Other organics	168,000	-18,000	7,000	157,000	589,000	165,500	–	754,500
Biosolids	–	–	–	–	–	–	–	–
Paper & cardboard	**118,000**	**301,000**	**3,000**	**442,000**	**370,500**	**431,500**	**–**	**802,000**
Cardboard	20,000	51,000	4,000	75,000	87,000	188,000	–	275,000
Liquid paperboard	2,000	–	–	2,000	4,500	–	–	4,500
Newsprint/magazines	13,000	31,500	2,500	47,000	229,000	40,500	–	269,500
Office paper	33,000	84,500	6,500	124,000	35,500	68,500	–	104,000
Other paper	50,000	134,000	10,000	194,000	14,500	134,500	–	149,000

	Disposal (tonnes)				Recycling (tonnes)			
	Municipal	**C&I**	**C&D**	**Total**	**Municipal**	**C&I**	**C&D**	**Total**
Plastics	**213,000**	**248,500**	**20,500**	**482,000**	**58,500**	**31,500**	**1,500**	**91,500**
Polyethylene terephthalate (PET)	20,000	23,000	2,000	45,000	21,500	10,000	500	32,000
High density polyethylene (HDPE)	19,000	22,000	2,000	43,000	18,000	9,500	500	28,000
Polyvinyl chloride (PVC)	3,000	4,000	500	7,500	1,000	500	–	1,500
Other plastics	171,000	199,500	16,000	386,500	18,000	11,500	500	30,000
Glass	**74,500**	**30,000**	**-1,000**	**103,500**	**147,000**	**59,500**	**6,000**	**212,500**
Glass	74,500	30,000	-1,000	103,500	147,000	59,500	6,000	212,500
Hazardous material	**111,500**	**55,500**	**138,500**	**305,500**	**–**	**–**	**–**	**–**
Quarantine	–	1,500	–	1,500	–	–	–	–
Contaminated soil	–	19,000	–	19,000	–	–	–	–
Industrial waste	111,500	33,500	500	145,500	–	–	–	–
Asbestos	–	1,500	138,000	139,500	–	–	–	–
Other	**375,500**	**519,000**	**715,000**	**1,609,500**	**303,000**	**118,000**	**585,000**	**1,006,000**
Leather/textiles	500	500	–	1,000	51,500	–	–	51,500
Tyres & other rubber	–	25,000	–	25,000	4,500	100,500	–	105,000
Other materials*	375,000	493,500	715,000	1,583,500	247,000	17,500	585,000	849,500
TOTALS	**2,223,500**	**2,051,500**	**1,655,500**	**5,930,500**	**3,154,000**	**2,649,000**	**4,497,500**	**10,300,500**

* Materials that were not possible to assign to a more precise category in audits, such as mixed fines (<300 mm), composites and containerised materials.

Appendix C table does not include materials sent interstate, as material composition breakdown is unknown. (260,000 t C&D, 45,000 t MSW, 22,000 t C&I)

Appendix D: Waste generation by material

2014–15	Disposal	Recycled	Total	% Recycled
Paper & cardboard	442,000	802,000	1,244,000	64.5%
Plastic	482,000	91,500	573,500	16.0%
Glass	103,500	212,500	316,000	67.2%
Ferrous	107,000	1,445,000	1,552,000	93.1%
Non-ferrous	24,500	196,000	220,500	88.9%
Garden organics	585,500	1,169,500	1,755,000	66.6%
Food	922,500	306,500	1,229,000	24.9%
Timber	470,500	328,000	798,500	41.1%
Other organics	157,000	754,500	911,500	82.8%
Concrete/brick/tiles	396,000	2,285,500	2,681,500	85.2%
Asphalt	–	565,000	565,000	100.0%
Sand/soil/rubble	324,500	1,119,500	1,444,000	77.5%
Plasterboard	500	19,000	19,500	97.4%
Rubber	25,000	105,000	130,000	80.8%
Textiles	1,000	51,500	52,500	98.1%
Other	1,889,000	849,500	2,738,500	31.0%
Total	**5,930,500**	**10,300,500**	**16,231,000**	**63.5%**

This table does not include materials sent interstate, as their material composition breakdown is unknown (260,000 tonnes of C&D, 45,000 t municipal waste and 22,000 t C&I).

The EPA's Quality Declaration Waste Avoidance and Resource Recovery Strategy Recycling Rates report explains how data is collected and analysed. It provides context, and helps users understand the quality of the data we use in this report.

http://www.epa.nsw.gov.au/resources/wastestrategy/110334-WARR-recycle-rates.pdf