Waste Avoidance and Resource Recovery Strategy

Progress Report 2012–13

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Contents

Overview

1.1 Introduction

This Waste Avoidance and Resource Recovery Strategy Progress Report 2012–13 summarises the improvements the state has made towards:

1. recovering more materials
2. avoiding waste
3. managing problem wastes
4. reducing litter and illegal dumping.

But it also highlights areas where more effort is needed. We are working towards the targets in the NSW Waste Avoidance and Resource Recovery Strategy 2007 (the WARR Strategy).

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.

We report on waste created, sent to landfill and recycled, overall and by waste stream. The three main waste streams are municipal, commercial and industrial (C&I) and construction and demolition (C&D). Where it is helpful, we also report by region. Under the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) we report our progress towards the WARR Strategy targets every two years.

Our data is from 2012–13. Please also note that data about material recovery is from voluntary surveys and relies on companies reporting correctly. Accordingly, figures showing changes in regional or material recycling rates must be treated with caution.

1.2 Key findings

Increasing recycling and re-use

Significant progress has been made towards the recycling targets.

The community has made good progress towards the 2014 targets in the WARR Strategy (see Table 1). The resource recycling rate has increased across the municipal and C&I waste streams since the last progress report and since the first WARR strategy was introduced. However, a one-off increase of contaminated material from the Barangaroo project lowered the recycling rate for the C&D stream to 69% and reduced the overall recycling rate by 1.4% resulting in 62.1% overall recycling.

Table 1 Progress towards the recycling targets by waste stream

	2002–03*	2004–05	2006–07	2008–09	2010–11	2012–13	2014 target
Municipal	31%	33%	38%	44%	52%	55%	**66%**
C&I	34%	38%	44 %	52%	57%	60%	**63%**
C&D	64%	62%	67%	73%	75%	69%	**76%**
Overall	45%	46%	52%	59%	62.6%	62.1%	

*First WARR Strategy established.

The state recycled 62.1% of its waste in 2012–13, putting 10.64 million tonnes of material back into the economy. The recycling rate was:

- up from 45% in 2002–03
- up from 59% in 2008–09
- down from 62.6% in 2010–11.

Preventing and avoiding waste

Despite economic and population growth, there was less waste created per captia.

Waste creation is closely linked to population growth and economic activity. Between 2010–11 and 2012–13, gross state product rose at virtually the same rate as population growth at 2.3%. Despite this, overall waste tonnes fell by 0.3%.

State-wide waste is made up of:

- 31% municipal waste
- 28% C&I waste
- 41% C&D waste.

In 2012-13 municipal total waste rose by 560,000 tonnes and C&D total waste rose by 77,500 tonnes from 2010-11. However, this was outweighed by a fall of 688,500 tonnes in the C&I sector.

In line with the fall in total waste created, the total waste created per person also fell, down by 29 kg per capita compared to 2010–11.

Reducing problem wastes


Chemical CleanOuts and community recycling centres recovered more problem waste.

To reduce problem wastes, the state has worked with a range of bodies, including all governments from federal to local, industry groups and the broader community. Key highlights were:

- supporting new and existing product stewardship initiatives and laws
- collecting 1,400 tonnes of hazardous products through the Chemical CleanOut program
- creating three community recycling centres to help households manage problem waste
- upgrading two waste facilities to deal with problem waste.

Reducing litter and illegal dumping


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

The 2012–2013 National Litter Index shows the number of littered items rose by 5% compared to 2011–12, but fell by 24% since 2005–06. The volume of litter followed a similar pattern: up 13% from 2011–12, but down by 32% since 2005–06. These increases are within yearly fluctuation rates, and continue the downward trend since 2005–06.

Cigarette butts continue to be the most littered item, and plastic and paper/paperboard items contribute most to the volume of litter. Industrial sites, retail sites and car parks were the most littered sites by item number. Industrial sites, car parks and highways were the most littered sites by volume.

Illegal dumping rose from 2.17 litres of volume per 1,000 square metres in 2011–12 to 2.44 litres in 2012–13.

Supporting the WARR Strategy


A suite of policies and programs continue promoting better waste practices.

The NSW Government has a comprehensive suite of policies and programs to support the WARR Strategy, including laws, economic tools and grants. 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 allow waste to be used as fuel or applied to land.

We also provide education programs and infrastructure grants through the Waste Less, Recycle More initiative. This initiative includes $465.7 million, distributed over five years to mid-2017. It facilitates action at all stages of the waste management process to achieve the WARR Strategy targets.

1. Increasing recovery and re-use

WARR Strategy target: by 2014, increase recovery and use 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 State-wide recycling

We made solid progress towards the targets in 2012–13. While the C&D recycling rate fell, recycling rates for both municipal and C&I waste rose.

Recycling rates for all waste streams have risen steadily since the WARR targets were set in 2002–03 (see Table 2). However, progress has slowed since the last report of 2010–11 data. The state recycled 62.1% of all waste in 2012–13:

- up from 44.9% or 5.3 million tonnes in 2002–03
- down slightly from 62.6% or 10.7 million tonnes in 2010–11.

Table 2 Recycling rates by waste stream and year

	2002–03*	2004–05	2006–07	2008–09	2010–11	2012–13	2014 target
Municipal	31%	33%	38%	44%	52%	55%	**66%**
C&I	34%	38%	44 %	52%	57%	60%	**63%**
C&D	64%	62%	67%	73%	75%	69%	**76%**
Overall	45%	46%	52%	59%	63%	62%	

* WARR Strategy targets created.

Four major events also influenced the percentage of recycling in 2012–13.

Barangaroo created a large volume of waste

The Barangaroo development created 384,000 tonnes of unrecyclable contaminated asbestos waste. Without this, the overall recycling rate would have been 64%, up 1% from 2010–11.

The metal recycling industry contracted

There was a major downturn in the scrap metal recycling industry. *IbisWorld* summarised the conditions:

> Upstream activities in the industry have been adversely affected by poor demand conditions. Consumers are keeping their purse strings tight, staying away from unnecessary purchases. As a result, demand for manufacturing industries has gone down, lowering the supply of scrap metal generated from manufacturing activities. A low consumption level has also meant a low waste volume, leading to a low supply of scrap metals.

BlueScope at Port Kembla also halved its yearly raw steel production in 2011 to 2.5 million tonnes. This lowered demand for scrap steel by around 500,000 tonnes a year. Overall, steel recovery fell by 477,500 tonnes in 2012–13, down to 1,387,000 tonnes. This lowered the metal recycling rate for all waste streams by 1%, down to 94%.

Visy Glass closed the Laverton recycling plant

Visy Glass closed their recycling plant in Laverton, Victoria. Compared to 2010–11, glass recovery fell by 82,000 tonnes, mostly due to the plant closure. The Visy plant in Botany, NSW then had to stockpile material usually sent to Laverton, therefore the recycling percentage fell from 72% in 2010–11 to 65% in 2012–13.

There was less demand for recycled paper

Demand for recycled paper of all types fell, with 22,000 tonnes less recycled in 2012–13 compared to 2010–11. This was mostly due to more digital technology and in line with a long-term industry trend. As reported in *Industry Edge*, the total paper received for recycling fell by 10,000 tonnes in 2012–2013, down 1% from the last year.

The structural changes caused by the falling demand for newsprint are creating a long-term fall in material received for reprocessing. However, the amount of fibre packaging received has lifted by 4.3% or 25,000 tonnes compared to the last year, an 11% lift over five years. In the same period, the amount of paper sent to landfill dropped by 59,000 tonnes, lifting the recycling rate to 81%. This is a 7% rise on the 2010–11 rate.

1.2 Regional recycling

The Extended Regional area are already achieving the C&I and C&D recycling target.

Key regions of the state are:

- Sydney Metropolitan Area (Sydney metro)
- Extended Regional Area (Extended area) (Hunter, Central Coast and Illawarra)
- Regional Regulated Area (Regional area)
- Rest of NSW (Rest of state).

Table 3 shows each region's progress towards the targets for each waste stream.

However, please treat these regional recycling rates with caution. Recycling data mainly depends on individual industry surveys. In these surveys, the data is reported voluntarily, and we generally can't verify it. This means it is less reliable, in both overall accuracy and the source of the material being recycled.

Table 3 **Progress towards the NSW recycling targets, by waste stream and region**

NSW							
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	2014 target
Municipal		31%	33%	38%	44%	52%	55%	66%
C&I		34%	38%	44 %	52%	57%	60%	63%
C&D		64%	62%	67%	73%	75%	69%	76%
Overall		45%	46%	52%	59%	63%	62%	
Sydney metro*								
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	
Municipal	26%	34%	37%	42%	51%	59%	59%	
C&I	28%	34%	35%	42%	50%	52%	59%	
C&D	65%	68%	66%	70%	77%	76%	67%	
Overall	38%	48%	49%	54%	62%	64%	63%	
Extended area								
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	
Municipal		28%	33%	41%	44%	51%	56%	
C&I		45%	53%	48%	60%	70%	68%	
C&D		67%	65%	72%	68%	77%	80%	
Overall		47%	50%	56%	59%	68%	69%	
Combined area (Regional + Rest of state)								
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	
Municipal		25%	23%	29%	32%	38%	45%	
C&I		22%	37%	48%	56%	61%	56%	
C&D		1%	26%	48%	40%	55%	47%	
Overall		18%	28%	40%	42%	50%	49%	
Regional area								
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	
Municipal						45%	50%	
C&I						71%	58%	
C&D						54%	45%	
Overall						57%	52%	
Rest of state								
	2000 baseline	2002–03	2004–05	2006–07	2008–09	2010–11	2012–13	
Municipal						33%	43%	
C&I						55%	54%	
C&D						56%	49%	
Overall						45%	48%	

* Only Sydney metro had baseline recycling rates in 2000. This data was used to create the Strategy targets.
# The Regional area was created in July 2009, but we did not report on it in 2010–11 as the data was not robust enough. The data has improved, so we now report on the Regional area and Rest of state separately. (Rest of state data is still the least reliable.) To help compare old data with this year's results, we also report on the Regional area and Rest of state together, in a new category called the Combined area.

Sydney metro

At 63%, the 2012–13 recycling rate was similar to 2008–09 and 2010–11, but remained higher than the 2002–03 rate of 48%. Although an extra 143,000 tonnes were recovered compared to 2010–11, these were offset by an extra 286,000 tonnes sent to landfill. Overall, 6.86 million tonnes were recovered from Sydney metro. This is a rise of 2.74 million tonnes from the 4.1 million tonnes recovered in 2002–03.

The recycling rate for C&D materials was affected by a large one-off increase in the disposal of unrecyclable contaminated asbestos waste of around 384,000 tonnes from Barangaroo.

Sydney metro recycled:
- 59.4% of municipal waste, up slightly from 59.3% in 2010–11
- 59% of C&I waste, up from 52%
- 67% of C&D waste, down from 76%.

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

Extended area

The recycling rate in the Extended area rose from 47% in 2002–03 to 69% in 2012–13 and by 1% from 2010–11 results. Although the total amount recycled fell by 183,000 tonnes compared to 2010–11, this was offset by a fall in disposal. Waste sent to landfill fell 155,000 tonnes to 1.0 million tonnes.

The rise in the recycling rate was driven by significant falls in disposal between 2010–11 and 2012–13, particularly in the C&D stream:
- Municipal recycling increased by 71,000 tonnes, from 51% to 56%.
- C&I recycling fell by 55,000 tonnes, recycling rate dropped from 70% to 68%, still above the 63% NSW target.
- C&D recycling fell by 199,000 tonnes, although the recycling rate rose from 77% to 80%.

Combined area

Data for the combined region showed an overall recycling rate of 49%, down slightly from 50% in 2010–11. This includes:
- around 45% of municipal waste, up from 38% in 2010–11
- 56% of C&I waste, down from 61%
- 47% of C&D waste, down from 55%.

Regional area

Disposal data is collected separately for this area, and we now consider it robust enough to present it separately. However, the figures for 2010–11 should still be treated with caution as some facilities could not provide accurate data then.

The recycling rate for the Regional area in 2012–13 was 52%, a fall from 57% in 2010–11. This was due to a 4% or 19,000 tonne fall in disposal being offset by a 21% or 134,500 tonne fall in recycling:
- Municipal recycling rose to 50%, up from 45% in 2010–11.
- C&I recycling fell to 58%, down from 71%.
- C&D recycling fell to 45%, down from 54%.

Rest of state

The 2012–13 recycling rate for Rest of state was 48%, up from 45% in 2010–11. The increase was due to a 4%, 38,500 tonne fall in disposal and a 6%, 51,000 tonne rise in recovery.

- Municipal recovery rose to 43%, up from 33% in 2010–11.
- C&I recycling fell to 54%, down from 55%.
- C&D recycling fell to 49%, down from 56%.

1.3 Waste stream recycling rates

We recycled much more timber, concrete, brick, tile and other organics from the municipal waste stream in 2012–13.

Municipal waste stream

Municipal waste includes household waste and waste from other council sources, such as street sweepings, litter bins, clean ups and so on. Resource recovery systems for household waste differ within and between councils, depending on factors like:

- population density
- type of residence (single unit versus multi-unit dwelling)
- access to reprocessing markets.

In 2012–13, 86% of councils (130) provided kerbside recycling and 93% of households had access to the service. Kerbside systems in 72 councils also collected garden organics (up from 64 councils in 2010–11). Fifteen councils also offered a kerbside food waste collection service: 2 in Sydney metro, 7 in the Regional area and 6 in Rest of state.

Household waste made up 92% or 2.07 million tonnes of the municipal waste sent to landfill. In addition:

- municipal recycling made up 28% of the total materials recycled
- recycling for the municipal stream rose by 3.5% to 55%, an increase of 478,000 tonnes.

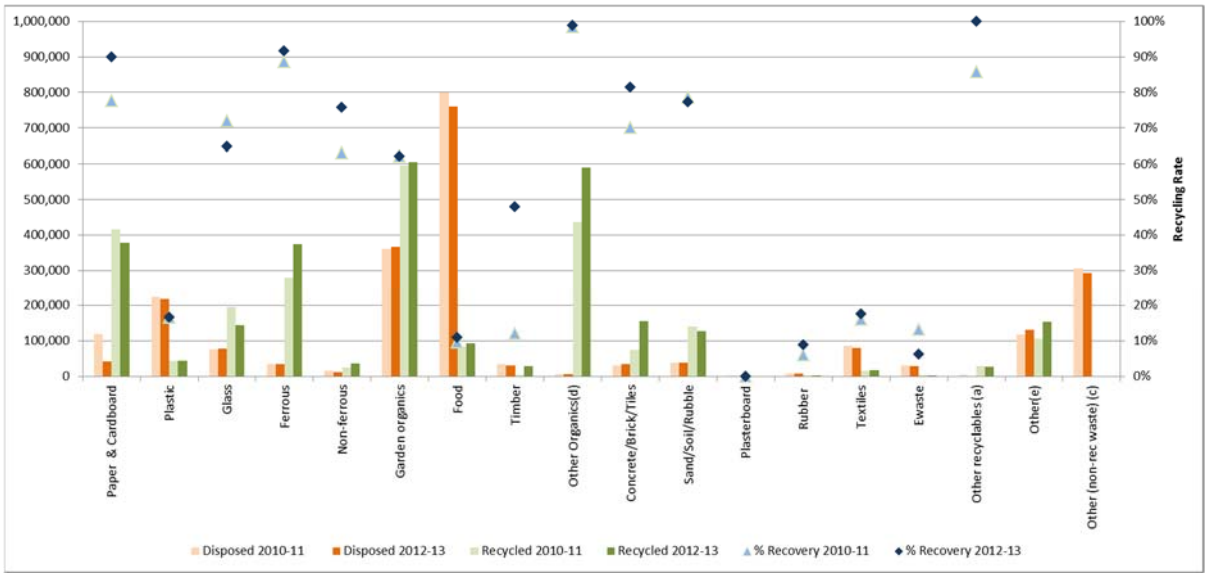
As Figure 1 shows, large amounts of some materials were recovered from the municipal waste stream. (See Appendix C for a full breakdown of all waste streams by material.) These include:

- garden organics: 606,000 tonnes were recycled, the highest amount overall, up 10,000 tonnes from 2010–11
- other organics (including biosolids): 589,500 tonnes, up by 152,500 tonnes
- masonry: 283,500 tonnes, up by 68,000 tonnes
- steel: 374,500 tonnes, up by 94,500 tonnes
- timber: 30,000 tonnes, up by 25,000 tonnes.

Although recycling rates vary across most streams each year, there were big differences between 2010–11 and 2012–13 in municipal categories:

- timber: recycling rate rose from 11% to 48%
- concrete, brick and tile: recycling rate rose from 70% to 81%, recovering an extra 83,500 tonnes
- glass: recycling rate fell 7% to 65%.

Figure 1 Municipal waste and recycling by material in 2010–11 and 2012–13



(a) Other organics: biosolids, manures, oils, grease trap, sludges, municipal solid waste (MSW) organic fraction and sawdust.
(b) Other recyclables: mattresses, batteries, e-waste, mixed recyclables from landfill (generally mixed fines smaller than 300 mm).
(c) Other: AWT residual, Recycling - AWT recovered fraction

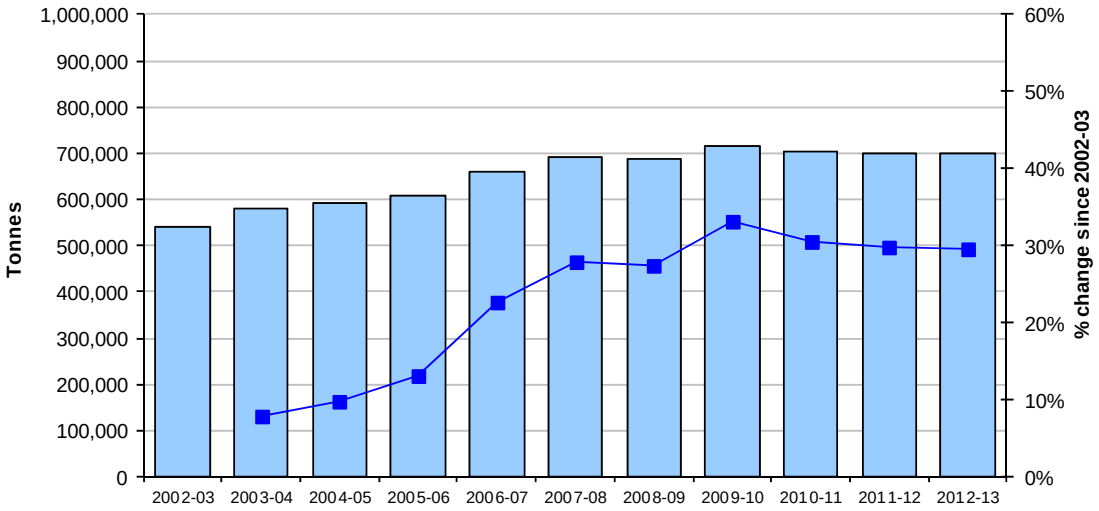
Municipal waste stream – household dry recyclables

This category includes paper, cardboard, glass, metals and some plastics. Kerbside recovery was down by about 4,400 tonnes compared to 2010–11. This figure has plateaued at around 700,000 tonnes since 2007–08 (see Figure 2).

Mobile garbage bins (MGBs) are the most common collection system for dry recyclables. In 2012–13, of the 130 councils with kerbside recycling:

- 125 used MGBs, up from 77 councils in 2002–03
- 108 used the EPA's recommended system of 240L mixed MGBs or two 120L MGBs (one for paper and one for containers).

Figure 2 Annual household dry recyclables collected kerbside



In Sydney metro, 92.1 kg of dry recyclables were collected for each person in 2012–13, compared to 90.4 kg in 2002–03. Recovery from each household in 2012–13 was 259 kg yearly on average, down by 20.2 kg from 2010–11.

In 2012–13, the average person in Sydney recycled:

- 51.0 kg of paper and paper products
- 25.2 kg of glass
- 6.1 kg of plastic
- 1.9 kg of steel cans
- 0.6 kg of aluminium cans.

In the Extended area, dry recyclables collected from the kerbside for each person continued to increase in 2012–13, up by 13% since 2002–03. The yearly average per person was 103.3 kg:

- up from 94 kg in 2002–03
- down from 104.6 kg in 2010–11.

Recovery from each Extended area household in 2012–13 was 264 kg yearly on average.

In 2012–13, the average person in the Extended area recycled:

- 51.4 kg of paper and paper products
- 35.0 kg of glass
- 7.1 kg of plastic
- 2.5 kg of steel cans
- 1.0 kg of aluminium cans.

Municipal waste stream – household garden organics

Garden organics were collected through kerbside, drop-off and clean-up services, as well as through council operations at parks and gardens. In 2012–13, 72 councils provided a kerbside collection service for garden organics, up from 64 in 2010–11.

In 2012–13, 62% of municipal garden organics were recycled, including almost 467,000 tonnes of garden organics collected from kerbside systems (see Figure 3). Although this figure is similar to 2010–11, it is up by 268,000 tonnes or 135% since 2002–03.

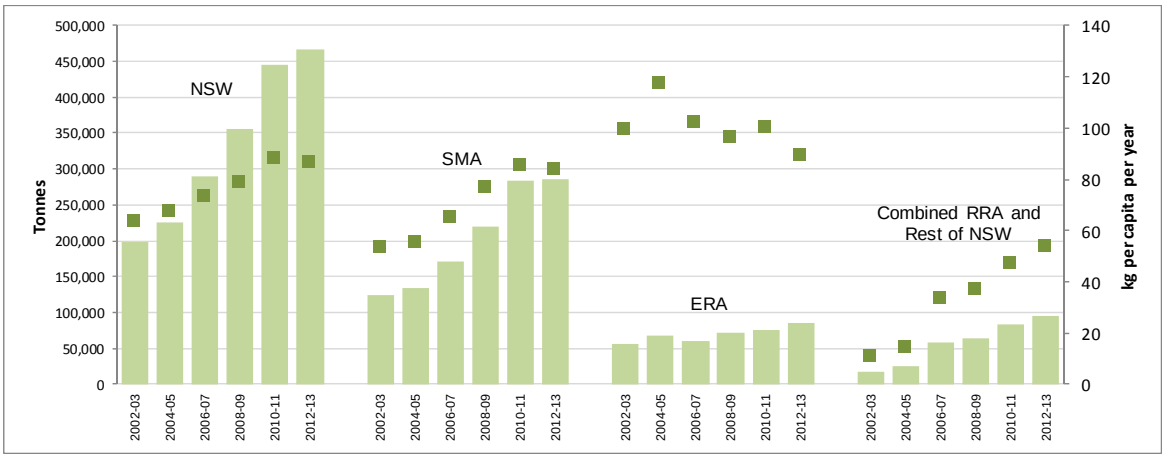
This is 86.4 kg per person yearly, an increase of 23 kg since 2002–03.

In Sydney metro, 34 of 38 councils offered a kerbside garden organics service, increasing the amount collected by 1% since 2010–11. Although this is 2 kg less per person over the year compared to 2010–11, it is an increase of 30 kg per person since 2002–03. The total collected was 286,000 tonnes, an increase of 162,000 tonnes or 131% compared to 2002–03.

Although the Extended area collects less garden organics than the Sydney metro by weight, residents recycled more of them. At 99 kg per person yearly, Extended area residents recycled almost 7 kg more per person.

Data for Regional area and Rest of state is improving. Both the total amount collected and per person collected are improving year on year, and the number of councils offering a recycling service is also growing.

Figure 3 Annual per person garden organics collected kerbside



We also measure waste by household rather than by person. In Sydney metro, garden organic material recycled from the kerbside fell from by 3% from 191 kg per household in 2010–11 to 185 kg in 2012–13. In the Extended area, there was an increase of 6% over the same time, from 144 kg per household to 153 kg.

Commercial and Industrial (C&I) waste stream

Much less C&I waste was sent to landfill in 2012–13. The stream is close to meeting the 2014 target, recycling 61% compared to the 63% goal.

A large fall in the amount of waste sent to landfill boosted the C&I recycling rate. It rose by 3%, up from 57% in 2010–11 to 60% in 2012–13. There continued to be strong recovery of some C&I materials (see Figure 4), especially:

- masonry (bricks, concrete, plasterboard, rubble)
- steel and non-ferrous metals
- other organics (excluding biosolids)
- rubber
- paper and cardboard.

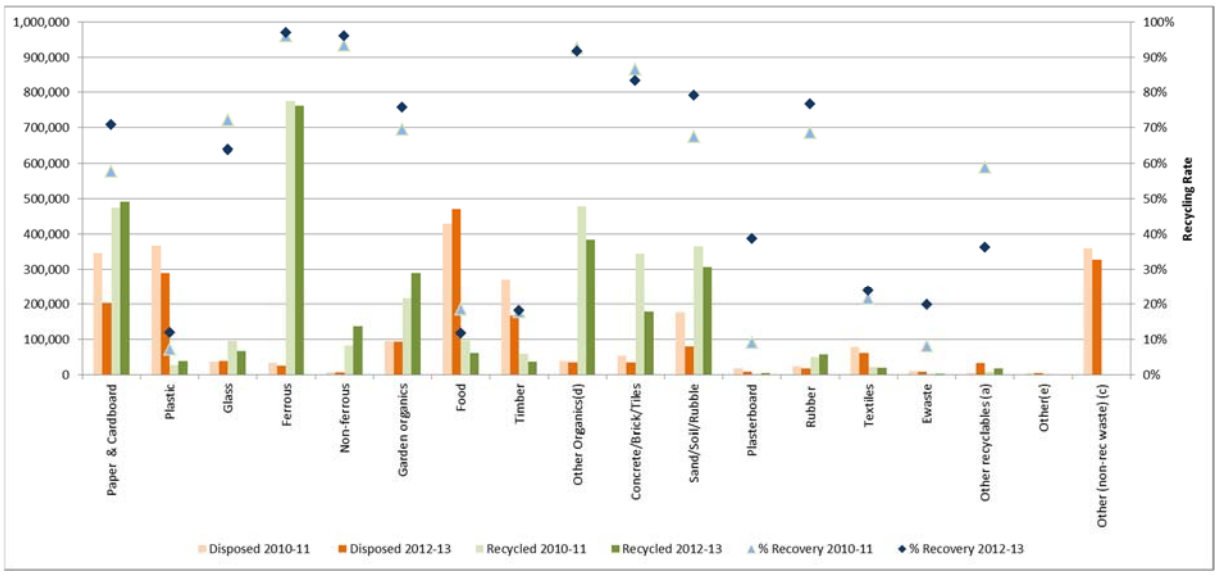
Recycling rates significantly improved in some categories, even those with already high rates:

- sand, soil and rubble rose from 68% in 2010–11 to 79% in 2012–13
- garden organics rose from 69% to 76%
- rubber rose from 68% to 77%
- plasterboard rose from 9% to 39%, although this category has a low volume of material
- plastic rose from 7% to 12%, although it remains the least recycled C&I material.

The recycling rate fell for other materials:

- glass fell from 72% to 64%
- concrete, bricks and tiles fell from 86% to 83%, a small percentage change but a significant 167,000 tonnes less recycling
- food fell from 18% to 12% and is now on par with plastic recycling.

Figure 4 C&I waste and recycling by material in 2010–11 and 2012–13



(a) Other organics: biosolids, manures, oils, grease trap, sludges, MSW organic fraction and sawdust.

(b) Other recyclables: mattresses, batteries, e-waste, mixed recyclables from landfill (generally mixed fines smaller than 300 mm).
(c) Other: AWT residual, Recycling - AWT recovered fraction.

The Sydney metro area increased its recycling the most between 2010–11 and 2012–13, up by 7% to 59%. The amount of waste created in this area fell by 15%, down from 3,358,500 tonnes to 2,850,000 tonnes. This was mainly because of a 28% drop in the amount of C&I waste sent to landfill. However, the Sydney metro recycling rate for C&I continued to be below the state average of 60%.

The Extended area continued to have the highest recycling rate of 68%, although this was down from 70% in 2010–11. The amounts of C&I material sent to landfill rose by 2%, whilst recycled dropped by 8%across all material categories.

The Regional area reduced the amount of waste created by 19%, or 83,500 tonnes to361,000. However, most of the drop was in the amount of materials recycled: 106,000 tonnes less in 2012–13, while waste sent to landfill rose by just 22,500 tonnes. This means the recycling rate dropped from 71% to 58%.

Construction and Demolition (C&D) waste stream

Just under five million tonnes of C&D waste were recycled

In 2012–13, this stream created the most recycling: 4,794,500 tonnes, or 46% of the state total. At 80%, the recycling rate for C&D waste in the Extended area is above the 2014 WARR Strategy target of 76%.

However, the overall recycling rate was 69%, a 6% fall from 75% in 2010–11. The main reasons for this drop were:

- an extra 384,000 tonnes of contaminated material from the Barangaroo project
- a drop of 560,000 tonnes in steel recycling, mainly because of a downturn in the steel production market and lower scrap prices
- drops in recycling rates of other materials like concrete, brick and tile (down 134,500 tonnes), asphalt (down 77,500 tonnes) and aluminium and other non-ferrous metal (down 52,500 tonnes).

Without the Barangaroo contaminated waste, the C&D recycling rate would be 74%, if this material was recycled, down only 1% from 2010-11.

Table 4 C&D waste and recycling by region

Area	Waste created (tonnes)	Waste sent to landfill (tonnes)	Materials recycled (tonnes)	Recycling rate
Sydney metro	↑ 442,000	↑ 547,000	↓ 105,500	↓ 9% to 67%
Extended area	↓ 321,000	↓ 122,000	↓ 199,000	↑ 3% to 80%
Regional area	↓ 50,000	↓ 10,000	↓ 40,000	↓ 9% to 45%
Rest of state	↑ 6,500	↑ 24,000	↓ 17,000	↓ 7% to 49%

The drop in recycling for some materials was offset by more recycling of:

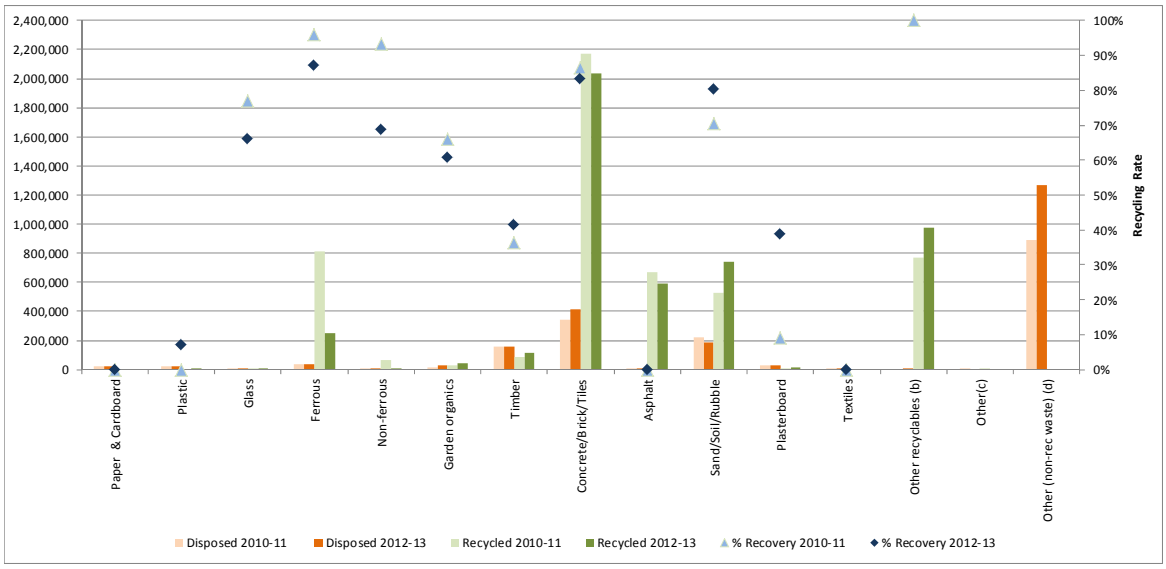
- rubble, up by 208,000 tonnes
- other recyclables (mainly mixed fines), up by 206,000 tonnes
- timber, up by 23,500 tonnes.

As Figure 5 shows, the types of materials in the C&D waste stream were limited: mainly steel, masonry (asphalt, bricks, concrete, rubble, plasterboard) and other recyclables

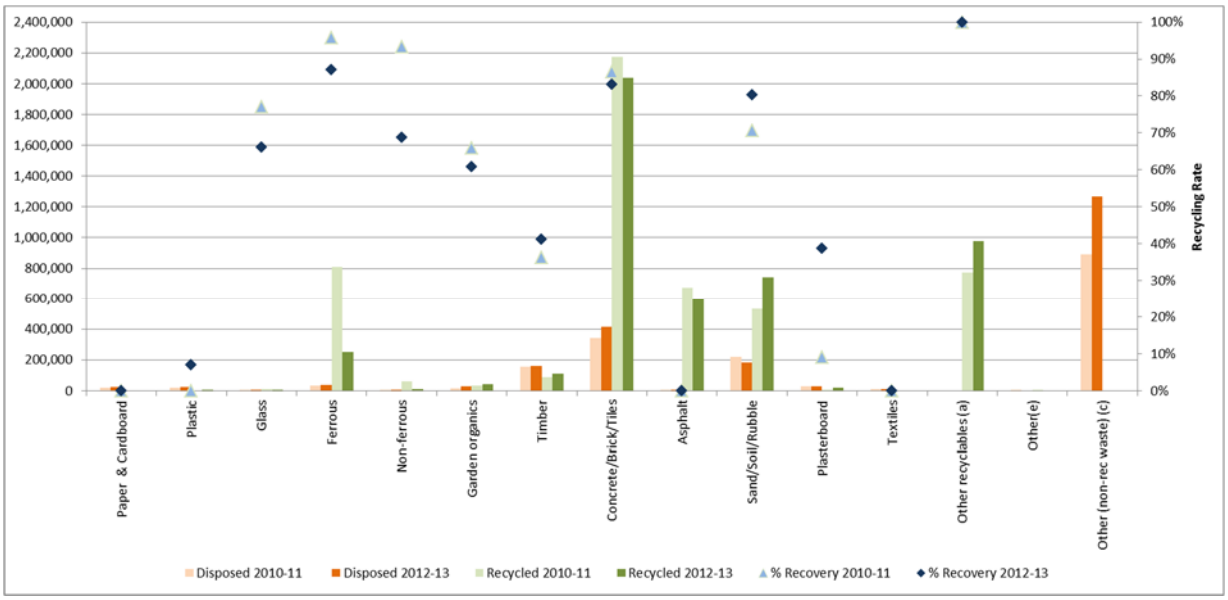
(generally mixed fines <300 mm for this stream). Most of these had a recycling rate of over 80%.

However, the C&D waste stream also included significant amounts of hazardous materials, such as contaminated soil and asbestos. These made up 16% of all C&D waste but 50% of C&D material sent to landfill. They affect recovery rates in this waste stream as there are limits on capacity to recycle them.

Figure 5 C&D waste and recycling by material in 2010–11 and 2012–13



(b) Other recyclables: mattresses, batteries, e-waste, mixed recyclables from landfill (generally mixed fines smaller than 300 mm).
(c) Other: AWT residual, Recycling - AWT recovered fraction.
(d) Other (non-recyclable waste): all unquantifiable non-recyclable or potentially recyclable materials.



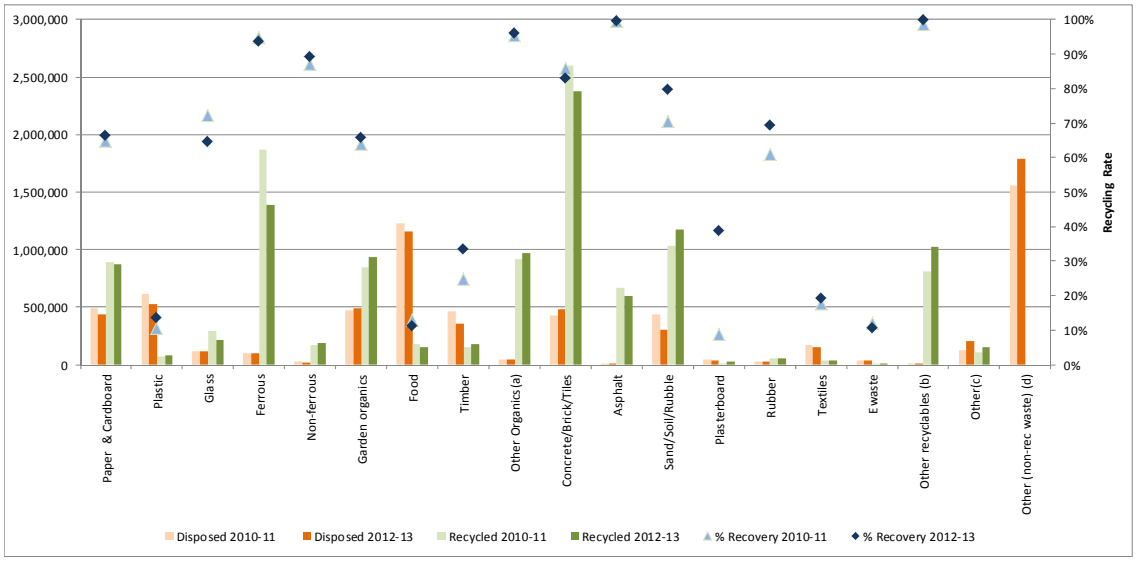
Material recycling rates

It is difficult to get accurate data about recycling rates for different materials. Data about the amount of waste recycled can vary because of:

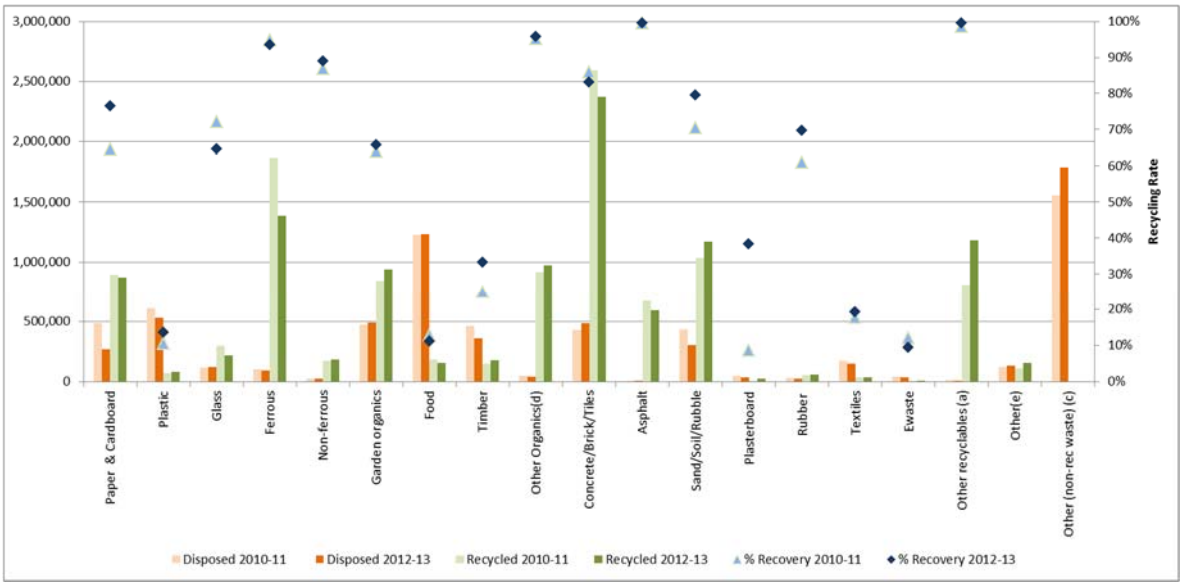
- response rates to industry surveys
- difficulty identifying the source (waste stream or location) of the material
- changes in commodity prices
- the availability of source material and markets
- one-off events like large construction projects or natural disasters.

We try to get accurate results by using the same data collection methods each year. Figure 6 shows the data we collected in 2010–11 and 2012–13.

Figure 6 Waste and recycling by material in 2010–11 and 2012–13



(a) Other organics: biosolids, manures, oils, grease trap, sludges, MSW organic fraction and sawdust.
(b) Other recyclables: mattresses, batteries, e-waste, mixed recyclables from landfill (generally mixed fines smaller than 300 mm).
(c) Other: AWT residual, Recycling - AWT recovered fraction.
(d) Other (non-recyclable waste): all unquantifiable non-recyclable or potentially recyclable materials.



These materials made up a large part of the total materials recycled:

Recycled material	Analysis
Masonry*	Masonry is the biggest contributor to overall recycling: 4.16 million tonnes in 2012–13. This is 144,000 tonnes less than 2010–11, but the amount of waste disposed dropped by 90,000 tonnes, keeping the recycling rate steady at 83%.
Garden organics	This material increased by 113,500 tonnes in 2012–13 compared to 2010–11. The recycling rate lifted by 2%, up to 66%.
Other organics*	There were 974,320 tonnes recycled, inc.Biosolids, with an overall recycling rate of 96%.
Metal	Although metals recycling was down by 461,000 tonnes, over 1.5 million tonnes of materials were recycled, maintaining a strong recycling rate of 93%.
Paper and cardboard	A downturn in some parts of the industry caused recycling to fall by 37,000 tonnes in 2012–13 compared to 2010–11. However, this material still makes up a large part of overall recycling: 870,000 tonnes, with a recycling rate of 76%.

*Masonry includes asphalt, bricks, concrete, plasterboard and rubble. Other organics include biosolids, manures, oils, grease trap, sludges, MSW organic fraction and sawdust.

2. Preventing and avoiding waste

WARR Strategy target: hold the total waste generated level for 5 years from 2003.

2.1 State-wide and regional waste prevention

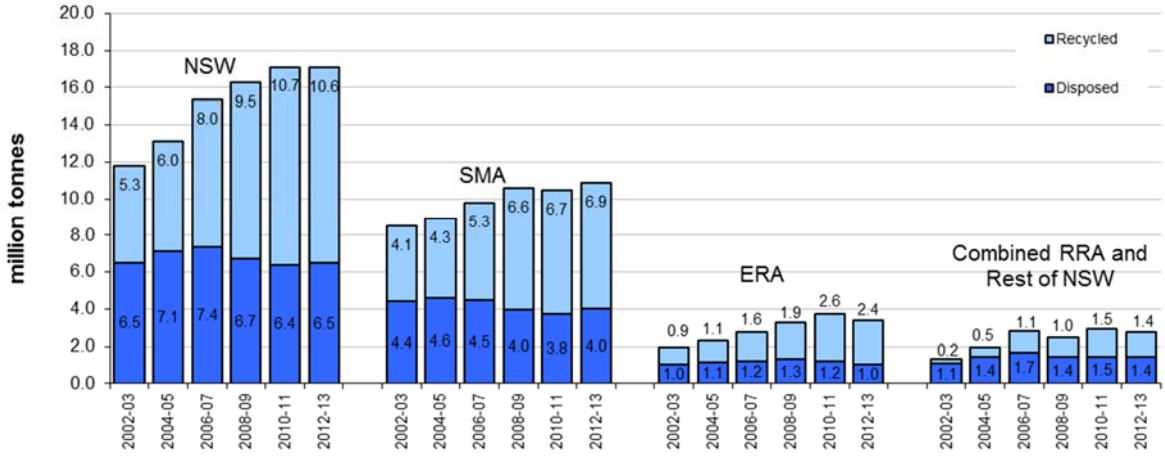
Tonnes of materials generated year-on-year fell for the first time in 2012-13.

The amount of total waste created (materials recycled plus waste sent to landfill) fell from 17.11 million tonnes in 2010–11 to 17.06 million tonnes in 2012–13. This is despite an extra 384,000 tonnes of contaminated material from the Barangaroo project.

Significantly, this is 2,341 kg per person yearly, a drop from 2,370 kg in 2010–11.

Sydney metro created slightly more total waste, with Extended and Regional slightly less. Figure 7 shows the total waste created for each region.

Figure 7 Waste created (disposed and recycled) by region and year



2.2 Waste prevention by stream and material

A significant fall in the total waste created by the C&I sector offset rises in the municipal and C&D waste streams.

All disposal data is robust enough to measure the composition and sources of each waste stream. Regular audits of kerbside collections and landfill show the composition of the waste. We collect the disposal data from:

- monthly online reports of levied landfills (Sydney metro, Extended and Regional areas)
- yearly reports of non-levied landfills (Rest of state).

Municipal waste

The key results for 2012–13 were:

- municipal waste and recycling made up 31% of the state total
- total waste created rose by 560,500 tonnes to 5.32 million tonnes
- waste sent to landfill rose by 3% to 2.38 million tonnes.

Key materials where large amounts were still sent to landfill include:

- food waste: almost 760,000 tonnes were disposed, down by 40,000 tonnes
- garden organics: 368,000 tonnes, up 5,500 tonnes despite just over 605,000 tonnes being recovered
- plastics: 218,000 tonnes, down by almost 6,000 tonnes but still with a very low recycling rate (17%)
- glass: 78,000 tonnes, up 2,000 tonnes
- textiles (clothing, carpet and underlay): 80,000 tonnes, down 5,000 tonnes.

Food waste made up 20% of all waste sent to landfill, but for municipal waste sent to landfill this figure was 34%, with 40,000 tonnes less food going to landfill from 2010-11.

C&I waste

In 2012–13, the Commercial and Industrial (C&I) waste stream made up 27.9% of the state total and 27.0% of the state's recycling.

Overall, 4.8 million tonnes of C&I waste were created: 688,500 tonnes less than in 2010–11. Most of this decrease was from a 684,500 tonne fall in disposal with a corresponding fall in recycling of 240,500 tonnes.

Less material was sent to landfill in nearly every category:

- timber fell by 104,000 tonnes
- sand, soil and rubble fell by 96,000 tonnes
- plastic fell by 78,000 tonnes
- paper and cardboard fell by 51,000 tonnes
- steel fell by 8,000 tonnes

The only materials where more were sent to landfill were:

- food rose 60,000 tonnes to 470,500 tonnes (the largest part of C&I waste sent to landfill)
- non-specified recyclables rose 27,500 tonnes to 32,500 tonnes
- glass rose by 1,500 tonnes to 38,000 tonnes

However, even though waste sent to landfill mainly dropped, a lot of these C&I materials were still sent to landfill:

- food waste
- timber
- paper and cardboard
- plastics
- masonry
- other material (materials not categorised in the data reporting).

C&D waste

The Construction and Demolition (C&D) waste stream is the largest contributor to waste created in the state. In 2012–13, 6.98 million tonnes of C&D waste were created, making up 41% of the state total. However, this stream also created the most recycling: 4.79 million tonnes, or 45% of the total.

Between 2010–11 and 2012–13, C&D created an extra 77,500 tonnes of waste. The recycling rate was 69%, a significant 6% fall from 75%.

Overall

These materials made up a large part of the total waste sent to landfill:

Disposed material	Analysis
Food waste	1.23 million tonnes was disposed in 2012–13, making it the biggest contributor to landfill. This is a decrease of 20,000 tonnes from 2010–11. The amount recycled fell by 27,000 tonnes, but food waste created also fell, down 7,000 tonnes on 2010–11. This may be due to the Love Food Hate Waste campaign taking hold.
Garden organics	Despite 939,500 tonnes being recycled, 489,000 tonnes still went to landfill. In 2012–13, the amount disposed rose by 18,000 tonnes from 2010–11.
Plastics	While 530,000 tonnes were sent to landfill in 2012–13, this was 81,500 tonnes less than in 2010–11. The recycling rate improved by 3% to 14%.
Paper and cardboard	While 268,500 tonnes were sent to landfill in 2012–13, this was 21,500 tonnes more than in 2010–11.
Masonry*	While 826,000 tonnes were sent to landfill in 2012–13, this was 85,500 tonnes less than in 2010–11.
Timber	While 360,500 tonnes were sent to landfill in 2012–13, this was 102,000 tonnes less than in 2010–11. The recycling rate improved by 8% to 33%.

*Masonry includes asphalt, bricks, concrete, plasterboard and rubble. Other non-recyclable waste includes all non-recyclable materials and potentially recyclable materials where the amount recycled can't be worked out.

The Barangaroo development created a large amount of one-off contaminated waste. While waste sent to landfill rose by 1.2%, the total waste created figure was largely inflated by Barangaroo. The project added 384,000 tonnes of contaminated material to the state total of 6,294,500 tonnes. Without the Barangaroo contamination, the overall recycling rate would have risen by 1.4%.

3. Reducing toxic products and managing problem wastes

WARR Strategy target: by 2014, phase out priority substances in identified products as a first choice or, if not possible, achieve maximum recovery for re-use.

We want to influence product content and reduce disposal of problem wastes. But national market needs limit how states can deal with product content limits. Accordingly, the state has worked closely with these groups to create coordinated and consistent national action:

- the Australian Government
- all 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

For example, the state has supported the Australian Government setting mandatory limits on mercury in fluorescent lamps.

We also continue to work with the PVC industry through the Vinyl Council of Australia (VCA) to phase out the heavy metals in additives by set dates. Through this initiative:

- cadmium stabilisers were phased out in 2004
- lead stabiliser was nearly phased out by VCA members in 2011, with an 82% drop since 2010 and a 99% drop since 2002.

The PVC industry has also made good progress phasing out lead, cadmium and hexavalent chrome pigments when this is 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. They fall under the federal Product Stewardship Framework legislation, which came into effect in August 2011.

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

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

3.3 Toxic household waste

We collected 1,400 tonnes of problem waste and created new centres to help households safely dispose of more material.

The EPA is directly involved in the safe recovery and treatment of hazardous household products and materials through the Household Chemical CleanOut Program. Since 2003, the program has given householders a safe and environmentally appropriate way to get rid of possibly hazardous household waste. The EPA runs the program with councils in the Sydney, Hunter and Illawarra areas, and funds similar local government programs in regional areas.

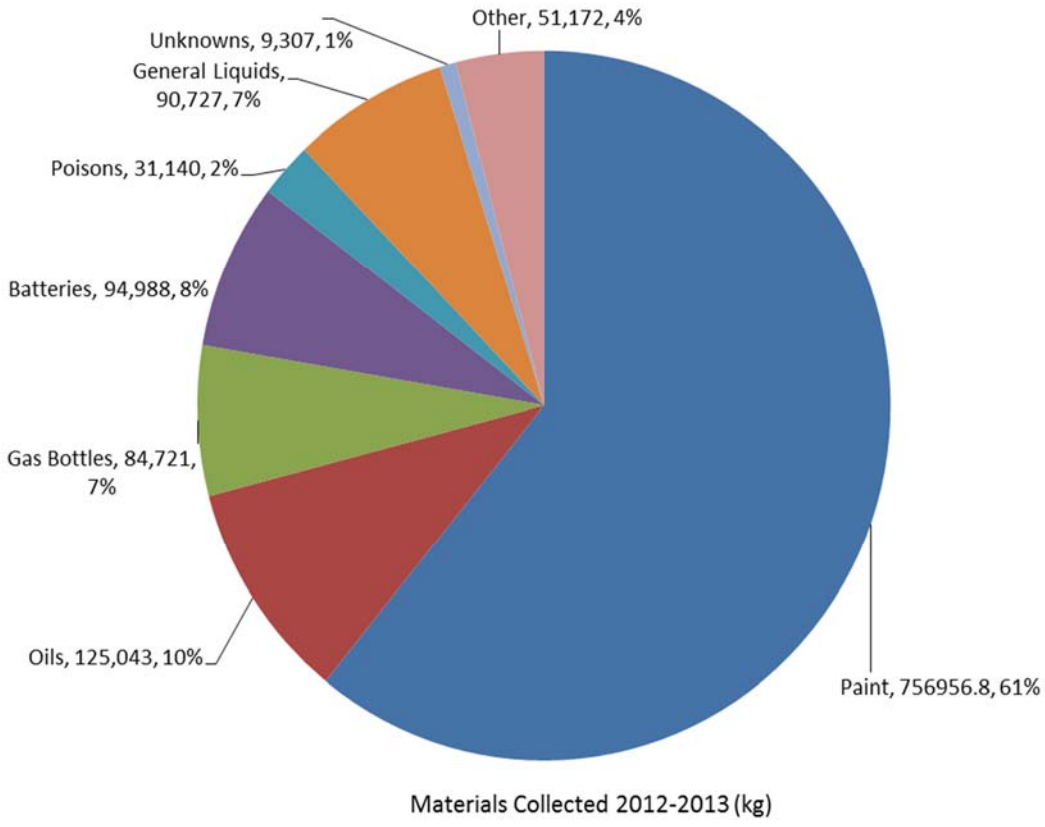
Between 2003 and 2012–13, the program supported 227,994 households in the Greater Sydney region. Almost 8,200 tonnes of hazardous household materials were collected. In 2012–13, these programs collected 1,400 tonnes through 90 collection events involving over 33,669 households.

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

- paint made up more than 60%
- motor oils 10%
- batteries 8%
- gas bottles and fire extinguishers 7%.

The remaining 15% was made up of low-volume, high-toxicity items, including poisons and pesticides. These were safely disposed of.

Figure 8 Materials collected in Chemical CleanOut and regional events 2012–13



In 2012–13, we expanded the Household Problem Waste program to establish fixed community recycling centres (CRCs). CRCs accept low-toxic, high-volume wastes such as paint, oil, gas bottles, batteries, fluorescent globes and old smoke detectors year round. They make it easier for householders to recycle and remove problem waste from bins, and complement the Household Chemical CleanOut mobile events.

In 2012–13, three councils shared $597,500 in funding to establish:

- three demonstration CRCs
- a new centre in Sydney metro at Liverpool
- upgrades to waste facilities at Port Stephens and Lake Macquarie.

These centres serve as demonstration models and will inform the design of a major grants program. The program will create a network of 86 CRCs across the state.

4. Reducing litter and illegal dumping

The 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 us to regularly report on litter quantities and types, as well as places that have significant littering.

We measure our results with 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.

The NSW Litter Report 2012 is included in Appendix D, providing more litter data and meets our requirement under the POEO Act to report on litter biannually. The report contains detailed analysis based on the survey results for 2011–12. The survey was completed in November 2011 and May 2012 at 151 sites across the state, covering eight types of sites and identifying seven types of litter.

Unlike other parts of this report, which compare 2012–13 to 2010–11, this section often compares 2012–13 to 2011–12, in line with the KAB data.

4.1 Litter

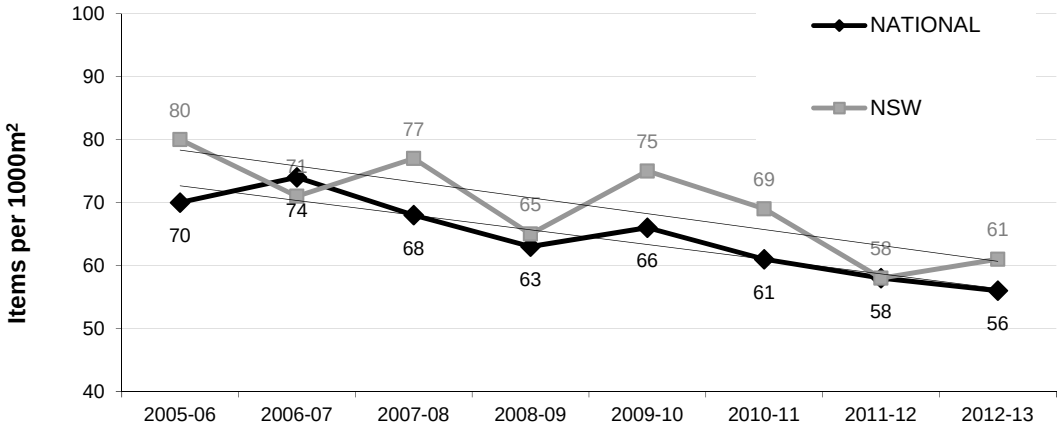
WARR Strategy target: by 2014, reduce the total amount of litter reported yearly.

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

Since the first survey in 2005–06, the state has reduced the number of items littered by 24%. While there have been yearly ups and downs, the data shows a clear downward trend. In 2012–13 litter increased slightly, but was still well down on 2005–06 levels. This increase was within normal yearly fluctuations.

The number of litter items dropped from 80 items per 1,000 square metres in 2005–06 to 61 items in 2012–13. However, this result is still above the national average (see Figure 9).

Figure 9 State and national litter items per 1,000 m² from 2005–06 to 2012–13

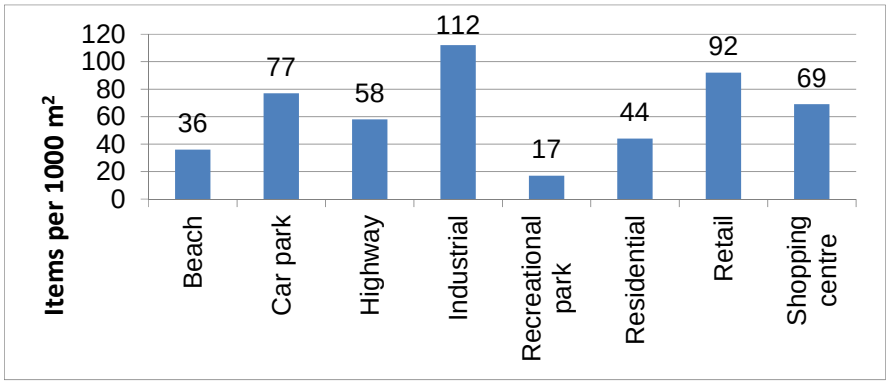


Source: Keep Australia Beautiful National Litter Index 2013.

The amount of litter in each place varied. There was more in industrial sites, retail sites, car parks and shopping centres, but less at beaches, residential places and recreational parks.

Litter on highways was around the average. This was similar to earlier years and the same as other states. Figure 10 shows the breakdown.

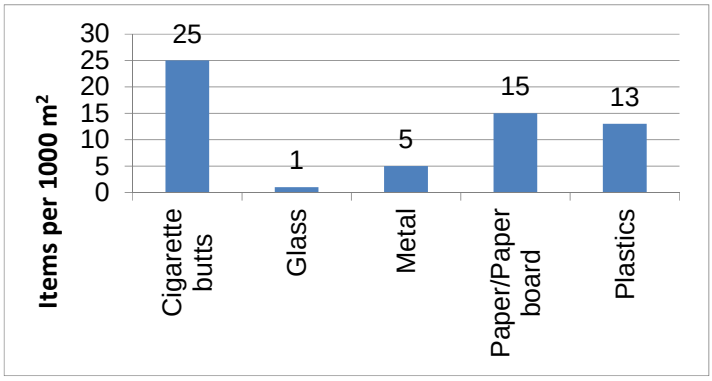
Figure 10 **Litter items per 1,000 m² by site type in 2012–13**



The survey found that cigarette butts were the most frequently littered item in 2012–13, with 25 butts per 1,000 square metres. This figure was unchanged from 2011–12. Cigarette butts were the dominant litter item at retail sites, shopping centres and car parks (Figure 11).

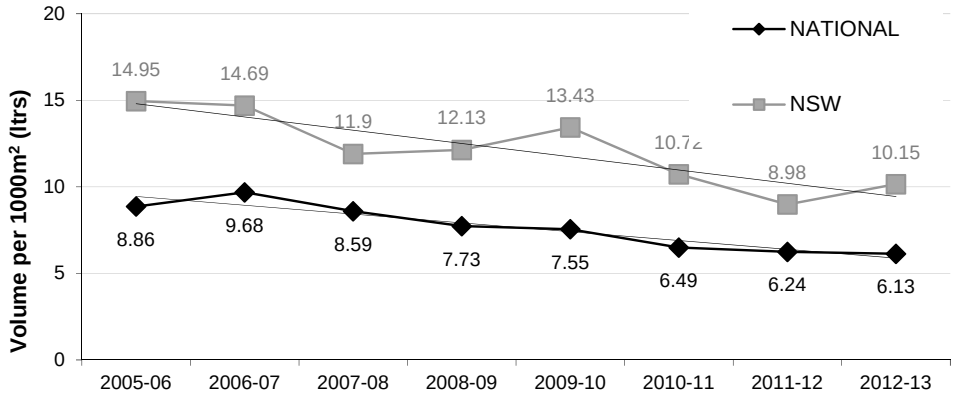
Paper/paperboard and plastic items were the second and third most littered items. There were 15 paper/paperboard items per 1,000 square metres and 13 plastic items.

Figure 11 **Litter items per 1,000 m² by type in 2012–13**



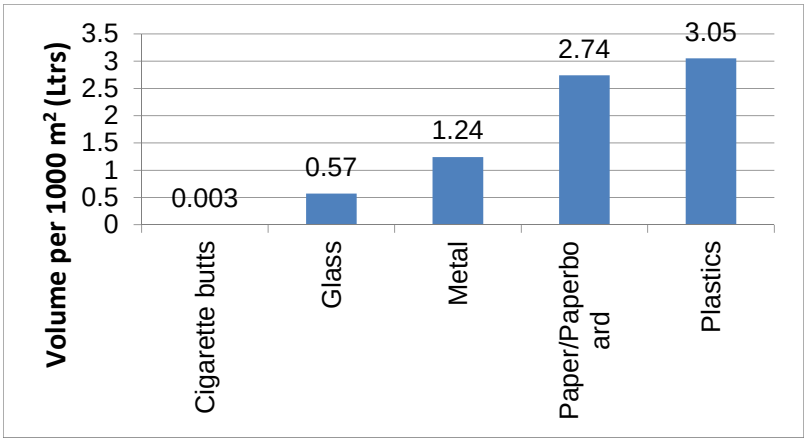
Litter can also be analysed by volume instead of number. The KAB index uses standard calculations for each item counted to estimate the overall volume. In 2012–13, the volume of litter increased by 13%. However, it is still lower than the 2005–06 result.

Figure 12 **Estimated litter volume per 1,000 m² by type from 2005–06 to 2012–13**



Plastic was the largest contributor to litter volume in the state, at 3.05 litres per 1,000 square metres. It was followed closely by paper/paperboard litter at 2.74 litres per 1,000 square metres. Despite the high number of them, cigarette butts only made up 0.003 litres per 1,000 square metres.

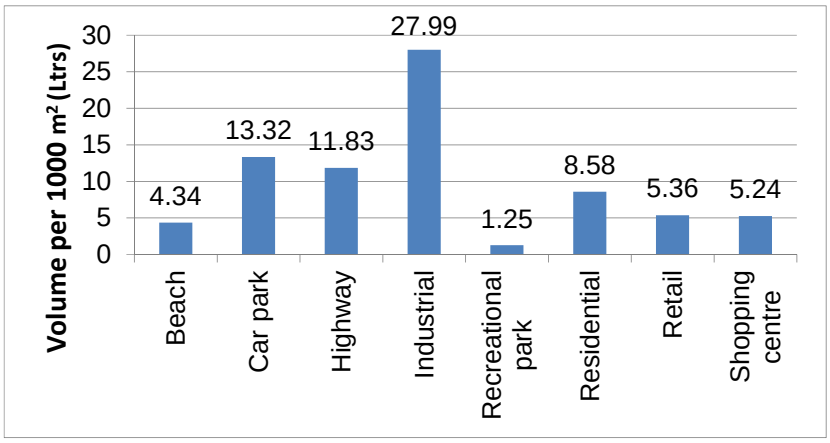
Figure 13 **Estimated litter volume per 1,000 m² by type in 2012–13**



Litter volume was highest in industrial sites, followed by car parks and highways. Both industrial sites and car parks had significantly more than the previous year, while the rise on highways was minimal. Recreational parks and beaches continue to be the least littered sites by volume.

Considering previous years and trends, these increases are in line with yearly fluctuations. The general downward trend across all types of site has continued.

Figure 14 **Estimated litter volume per 1,000 m^2 by site type in 2012–13**



State and local government continued strongly enforcing anti-littering behaviour.

Between 2009–10 and 2010–11, the state government and local councils issued almost 13,500 penalty infringement notices for littering. This is almost the same number as they issued over the two previous years: 14,055 from 2007 to 2009.

4.2 Illegal dumping

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

Illegal dumping increased, but so did action to tackle it.

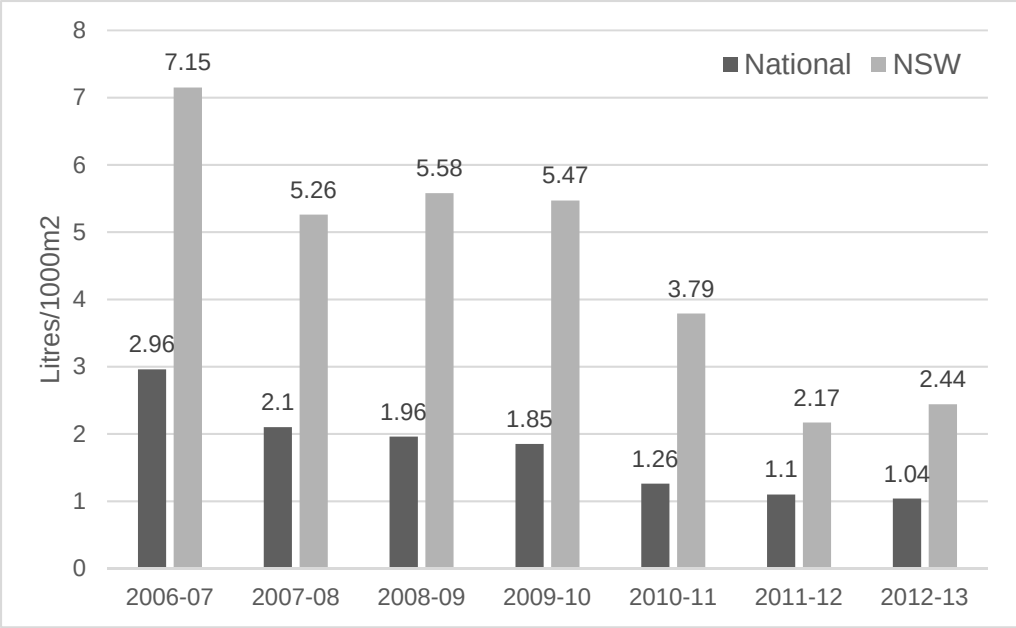
Illegal dumping varies from small bags of rubbish dumped in public places or industrial sites to large-scale dumping of materials in bushlands and along the urban fringes. Illegally dumped items might include:

- chairs
- blinds
- mattresses
- heaters
- televisions
- VCRs
- vacuum cleaners
- range hoods
- computer monitors
- carpet
- clothes lines
- shop fittings
- milk crates
- paint tins
- shopping trolleys.

The KAB survey showed a slight increase in illegal dumping in 2012–13. This is in contrast with the downward trend of previous years. On average, there were 2.44 litres of illegally dumped items per 1,000 square metres, up from 2.17 litres in 2011–12 yet down from 3.79 litres in 2010/11, (see Figure 15).

However, action to tackle illegal dumping has been increasing. In 2012–13, the Regional Illegal Dumping Squads carried out 4,117 investigations, issued 289 penalty infringement notices and more than 60 clean up notices. In 847 cases, the offender removed the waste.

Figure 15 NSW and national illegal dumping volume from 2006–07 to 2012–13



5. Supporting the WARR Strategy

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

5.1 The legal framework

The regulatory framework for waste comes under:

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

These key laws set out how waste must be managed, stored, transported, processed, recovered and disposed.

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 main environmental protection law in the state. 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, the Hon Robyn Parker, announced an independent review of the Waste and Environment Levy. This review including funding programs to create more investment in recycling infrastructure and resource recovery. In response to the review's recommendations, in February 2013 the NSW Government announced the five-year $465.7 million Waste Less, Recycle More initiative.

Waste Less, Recycle More is a mix of programs and grants to comprehensively improve the management of waste materials through the NSW economy. It includes:

- $250 million Waste and Recycling Infrastructure Package, including:
  - $70 million Organics Infrastructure Fund
  - $70 million Community Recycling Centre Fund
  - $60 million Waste and Recycling Infrastructure Fund
  - $35 million Business Recycling Fund
  - $15 million Recycling Innovation Fund
- $137.7 million Supporting Local Communities Fund, including:
  - $38.7 million Waste and Sustainability Improvement Payment Transition Fund
  - $70 million Local Government Waste and Resource Recovery Fund
  - $13 million Regional Local Government Fund
  - $9 million Regional Waste Avoidance and Resource Recovery Strategy Fund
  - $7 million Regional Landfill Consolidation Fund
- $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, helped 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 2012–2013

A comprehensive new strategy will help the community reduce litter.

New litter strategy

For almost 10 years there been no overall strategy for litter prevention. We are now finalising a new litter strategy that will provide the framework for the new litter prevention program. We will ask the public for comments before we finalise it.

The strategy will support targeted community engagement, infrastructure and enforcement actions to reduce litter. Public consultation will also engage councils, community groups and others about achieving the targets and raising the profile of anti-litter messages.

Litter Prevention Kit

In 2012–13, the EPA worked closely with the NSW Office of Environment and Heritage to develop materials for a new litter program. With valuable help from 19 councils that responded to an open expression of interest, we developed the Litter Kit in 2012. These councils then tested and commented on it. We published the Litter Kit in 2013. It includes several components, including a litter check, research and campaign material.

The Litter Kit includes a Local Litter Check for councils and community groups. This check is a site survey of a known litter hotspot, compared to a similar clean site. It should be done before and after an anti-litter action, to help councils and the community:

- focus on litter
- understand the problem
- see what worked
- identify what needs more effort.

The Local Litter Check is a first because it gives communities hard evidence on a local level. The consolidated data from local checks across the state is also easy for the community and other professionals to use. This combination of local data and the results of other communities will help communities understand their issues and develop focused solutions instead of more generic and expensive responses.

The Litter Kit also includes other resources and information, such as case studies and research about community attitudes towards litter. This research is vital to understanding and targeting anti-litter efforts.

Finally, the Litter Kit has campaign materials such as images, layouts and messages. Based on the successful ‘Don’t be a Tosser’ campaign in 2003–04, the new message is ‘Hey Tosser!’ It has been adapted to suit current community attitudes, and includes visuals and messages for general litter issues and specific hotspots. We worked on this campaign from 2011 to 2013, and the messages were thoroughly tested by the 19 councils who helped develop the Litter Kit.

Terms

AWT

Alternative Waste Technology

C&I

Commercial and Industrial

C&D

Construction and Demolition

Combined area

The Regional Area and Rest of state combined

EPA

Environment Protection Authority NSW

Extended area (ERA)

Extended Regulated Area, including the Hunter, Central Coast, Illawarra regions

KAB

Keep Australia Beautiful, authors of the National Litter Index

KRA

Key Result Area

MSW

Municipal solid waste

NRA

Non Regulated Areas in rural and regional NSW

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:

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

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 area and Regional area.

RID

Regional Illegal Dumping

Regional area (RRA)

The Regional Regulated Area, including 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

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 2012–13 data gathered from many sources. The main sources are:

- council reports on the amount and composition of materials disposed and recovered, based on an annual survey and kerbside bin audits
- a survey of C&D reprocessors by the Waste Management Association of Australia
- a survey of organics reprocessors by Compost Australia, 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 from local government and reprocessors. High-quality disposal data is drawn from weighbridge records in the regulated areas: Sydney metro and the Extended area.

In July 2009, a new regulated area was formed: the Regional area. This includes 21 councils on the north-east coast, the Upper Hunter, Blue Mountains and Wollondilly councils. Although we collect disposal data for the Regional area, the systems aren't robust enough yet. Therefore, we include this data 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 we are underestimating the actual recycling rate. Examples of unreported recycling are:

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

Our 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.

Appendix B: Waste data by region

Total tonnes*				
	Disposed	**Recycled**	**Created**	**% Recycled**
NSW 2012–13	6,473,000	10,589,500	17,062,500	62%
NSW 2010–11	6,399,500	10,712,500	17,112,500	63%
NSW 2008–09	6,733,000	9,529,000	16,262,000	59%
NSW 2006–07	7,364,500	7,995,000	15,359,500	52%
NSW 2004–05	7,100,000	6,018,500	13,118,500	46%
NSW 2002–03	6,506,500	5,297,000	11,803,500	45%
Sydney metro 2012–13	4,032,500	6,862,000	10,895,000	67%
Sydney metro 2010–11	3,746,500	6,719,000	10,465,500	64%
Sydney metro 2008–09	3,980,000	6,577,000	10,557,000	62%
Sydney metro 2006–07	4,466,500	5,308,000	9,774,500	54%
Sydney metro 2004–05	4,574,000	4,327,500	8,901,500	49%
Sydney metro 2002–03	4,391,500	4,122,000	8,513,500	48%
Extended area 2012–13	1,044,000	2,364,500	3,408,000	69%
Extended area 2010–11	1,199,000	2,547,500	3,746,500	68%
Extended area 2008–09	1,324,500	1,930,500	3,255,500	59%
Extended area 2006–07	1,217,000	1,557,000	2,774,000	56%
Extended area 2004–05	1,124,000	1,144,500	2,268,500	50%
Extended area 2002–03	1,036,500	932,000	1,968,500	47%
Regional area 2012–13	479,500	520,000	999,000	52%
Regional area 2010–11	498,000	654,500	1,152,500	57%
Rest of state# 2012–13	917,500	842,500	1,760,000	48%
Rest of state# 2010–11	955,500	792,000	1,747,500	45%
Combined area# 2012–13	1,396,500	1,362,500	2,759,000	49%
Combined area# 2010–11	1,453,500	1,446,000	2,900,000	50%
Combined area# 2008–09	1,428,500	1,021,000	2,449,500	42%
Combined area# 2006–07	1,681,000	1,130,000	2,811,000	40%
Combined area# 2004–05	1,401,500	546,500	1,948,500	28%
Combined area# 2002–03	1,078,500	243,000	1,321,500	18%

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

Municipal tonnes*				
	Disposed	**Recycled**	**Created**	**% Recycled**
NSW 2012–13	2,380,000	2,935,000	5,315,000	55%
NSW 2010–11	2,298,000	2,457,500	4,755,500	52%
NSW 2008–09	2,384,500	1,863,500	4,248,000	44%
NSW 2006–07	2,408,000	1,482,500	3,890,500	38%
NSW 2004–05	2,143,500	1,037,500	3,181,500	33%
NSW 2002–03	2,156,000	946,000	3,102,000	31%
Sydney metro 2012–13	1,198,000	1,752,500	2,950,500	59%
Sydney metro 2010–11	1,000,000	1,454,500	2,454,500	59%
Sydney metro 2008–09	1,050,000	1,076,000	2,126,000	51%
Sydney metro 2006–07	1,093,500	801,500	1,895,000	42%
Sydney metro 2004–05	1,020,500	605,000	1,625,500	37%
Sydney metro 2002–03	1,185,500	596,000	1,781,500	33%
Extended area 2012–13	462,500	588,500	1,028,000	56%
Extended area 2010–11	502,000	517,500	1,019,500	51%
Extended area 2008–09	506,000	389,500	895,500	44%
Extended area 2006–07	506,500	351,000	858,000	41%
Extended area 2004–05	485,000	239,500	724,500	33%
Extended area 2002–03	479,500	189,500	669,000	28%
Regional area 2012–13	242,500	239,000	481,500	50%
Regional area 2010–11	274,000	227,500	501,500	45%
Rest of state# 2012–13	477,000	356,000	855,500	43%
Rest of state# 2010–11	522,500	257,500	780,000	33%
Combined area# 2012–13	720,000	595,000	1,314,500	45%
Combined area# 2010–11	796,500	485,000	1,281,500	38%
Combined area# 2008–09	828,500	398,500	1,226,500	32%
Combined area# 2006–07	808,000	330,000	1,137,500	29%
Combined area# 2004–05	638,000	193,500	831,000	23%
Combined area# 2002–03	491,000	160,500	651,500	25%

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

Commercial and Industrial (C&I) tonnes*

	Disposed	Recycled	Created	% Recycled
NSW 2012–13	1,904,500	2,859,500	4,764,000	60%
NSW 2010–11	2,352,000	3,099,500	5,451,500	57%
NSW 2008–09	2,588,500	2,836,500	5,425,000	52%
NSW 2006–07	2,921,000	2,297,000	5,218,000	44%
NSW 2004–05	2,984,500	1,835,000	4,819,000	38%
NSW 2002–03	2,643,000	1,370,500	4,013,500	34%
Sydney metro 2012–13	1,167,500	1,682,500	2,850,000	59%
Sydney metro 2010–11	1,626,500	1,732,000	3,358,500	52%
Sydney metro 2008–09	1,854,500	1,817,000	3,671,000	50%
Sydney metro 2006–07	2,087,000	1,528,000	3,615,000	42%
Sydney metro 2004–05	2,246,500	1,214,500	3,461,000	35%
Sydney metro 2002–03	2,029,500	1,021,500	3,051,000	33%
Extended area 2012–13	289,000	615,000	904,500	68%
Extended area 2010–11	283,000	670,500	953,500	70%
Extended area 2008–09	358,000	546,500	904,500	60%
Extended area 2006–07	383,000	354,500	737,500	48%
Extended area 2004–05	362,000	401,000	763,500	53%
Extended area 2002–03	325,000	269,500	594,500	45%
Regional area 2012–13	150,000	210,500	329,000	58%
Regional area 2010–11	128,000	316,000	444,000	71%
Rest of state# 2012–13	297,500	351,000	625,000	54%
Rest of state# 2010–11	314,500	381,000	695,500	55%
Combined area# 2012–13	448,000	561,500	1,009,000	56%
Combined area# 2010–11	442,500	697,500	1,140,000	61%
Combined area# 2008–09	376,500	473,000	849,000	56%
Combined area# 2006–07	451,500	414,500	866,000	48%
Combined area# 2004–05	376,000	219,000	595,000	37%
Combined area# 2002–03	288,500	79,500	368,000	22%

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

Construction and Demolition (C&D) tonnes*

	Disposed	Recycled	Created	% Recycled
NSW 2012–13	2,188,000	4,795,000	6,983,000	69%
NSW 2010–11	1,749,500	5,156,000	6,905,500	75%
NSW 2008–09	1,760,000	4,829,000	6,588,500	73%
NSW 2006–07	2,035,500	4,215,500	6,251,000	67%
NSW 2004–05	1,972,000	3,146,000	5,118,000	61%
NSW 2002–03	1,707,500	2,980,500	4,688,000	64%
Sydney metro 2012–13	1,667,500	3,427,000	5,094,500	67%
Sydney metro 2010–11	1,120,000	3,532,500	4,653,000	76%
Sydney metro 2008–09	1,075,500	3,684,500	4,760,000	77%
Sydney metro 2006–07	1,286,000	2,978,500	4,265,000	70%
Sydney metro 2004–05	1,306,500	2,508,000	3,814,500	66%
Sydney metro 2002–03	1,176,500	2,504,500	3,681,000	68%
Extended area 2012–13	292,000	1,161,000	1,453,000	80%
Extended area 2010–11	414,000	1,359,500	1,773,500	77%
Extended area 2008–09	460,500	994,500	1,455,000	68%
Extended area 2006–07	327,500	851,500	1,179,000	72%
Extended area 2004–05	277,000	504,000	781,000	65%
Extended area 2002–03	232,000	473,000	705,000	67%
Regional area 2012–13	86,000	70,500	157,000	45%
Regional area 2010–11	96,000	110,500	207,000	54%
Rest of state# 2012–13	142,500	136,000	278,500	49%
Rest of state# 2010–11	119,000	153,000	272,000	56%
Combined area# 2012–13	229,500	206,500	435,500	47%
Combined area# 2010–11	215,000	264,000	479,000	55%
Combined area# 2008–09	223,500	150,000	373,500	40%
Combined area# 2006–07	421,500	385,500	807,000	48%
Combined area# 2004–05	388,000	134,000	522,500	26%
Combined area# 2002–03	299,000	3,000	302,000	1%

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

Appendix C: Waste data by stream and material

	Disposal (tonnes)				Recycling (tonnes)				Generated
	Municipal	C&I	C&D	Total	Municipal	C&I	C&D	Total	(tonnes)
Masonry materials									
Asphalt	0	0	2,500	2,500	0	0	594,000	594,000	596,500
Bricks	13,000	15,500	115,500	144,000	56,000	64,500	736,000	856,500	1,000,500
Concrete	22,500	20,000	298,000	340,500	99,000	114,000	1,303,500	1,516,500	1,857,000
Rubble	38,000	80,500	182,500	301,000	128,000	306,000	739,000	1,173,000	1,474,000
Plasterboard / cement sheets	500	8,500	29,500	38,500	0	5,000	18,500	23,500	62,000
Metals									
Steel	34,000	25,000	37,000	96,000	374,000	762,500	250,000	1,386,500	1,482,500
Aluminium	10,500	5,000	4,500	20,000	16,000	59,500	5,000	80,500	100,500
Non-ferrous metals (ex. aluminium)	1,500	1,000	500	3,000	21,000	78,000	6,000	105,000	108,000
Organics									
Food organics	759,500	470,500	0	1,230,000	93,500	62,000	0	155,500	1,385,500
Garden organics	368,000	93,000	28,000	489,000	606,000	290,000	43,500	939,500	1,428,500
Timber	32,000	167,500	161,000	360,500	30,000	37,500	113,000	180,500	541,000
Other organics	7,000	35,500	0	42,500	245,500	385,000	0	630,500	673,000
Biosolids	0	0	0	0	344,000	0	0	344,000	344,000
Paper & cardboard									
Cardboard	15,500	128,500	15,000	159,000	222,000	288,000	0	510,000	669,000
Liquid paperboard	2,000	0	0	2,000	4,500	0	0	4,500	6,500
Newsprint / magazines	16,000	27,500	3,000	46,500	111,000	144,000	0	255,000	301,500
Office paper	9,000	46,500	5,500	61,000	41,000	59,500	0	100,500	161,500

	Disposal (tonnes)				Recycling (tonnes)				Generated
	Municipal	C&I	C&D	Total	Municipal	C&I	C&D	Total	(tonnes)
Plastics									
Polyethylene terephtha-late (PET)	20,500	11,500	1,000	33,000	16,000	9,500	0	25,500	58,500
High density polyethylene (HDPE)	19,500	80,000	6,000	105,500	13,000	11,500	0	24,500	130,000
Polyvinyl chloride (PVC)	3,000	19,500	1,500	24,000	1,000	1,000	0	2,000	26,000
Other plastics	175,000	178,500	14,000	367,500	14,000	17,000	2,000	33,000	400,500
Glass									
Glass	78,000	38,000	3,500	119,500	143,500	67,500	6,500	217,500	337,000
Hazardous material									
Quarantine	5,000	5,000	0	10,000	0	0	0	0	10,000
Contaminate d soil	1,500	2,000	553,500	557,000	0	0	0	0	557,000
Industrial waste	19,500	19,500	29,000	68,000	0	0	0	0	68,000
Asbestos	9,000	9,000	504,500	522,500	0	0	0	0	522,500
Other									
Leather / textiles	80,000	61,000	10,500	151,500	17,000	19,000	0	36,000	187,500
Tyres & other rubber	8,000	17,500	0	25,500	500	58,000	0	58,500	84,000
Other materials *	500,000	293,000	182,000	975,000	182,500	18,500	978,000	1,179,000	2,154,000
TOTALS	**2,248,000**	**1,859,000**	**2,188,000**	**6,295,000**	**2,779,000**	**2,857,500**	**4,795,000**	**10,431,500**	**16,726,500**

* 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 D: NSW Litter Report 2012-13