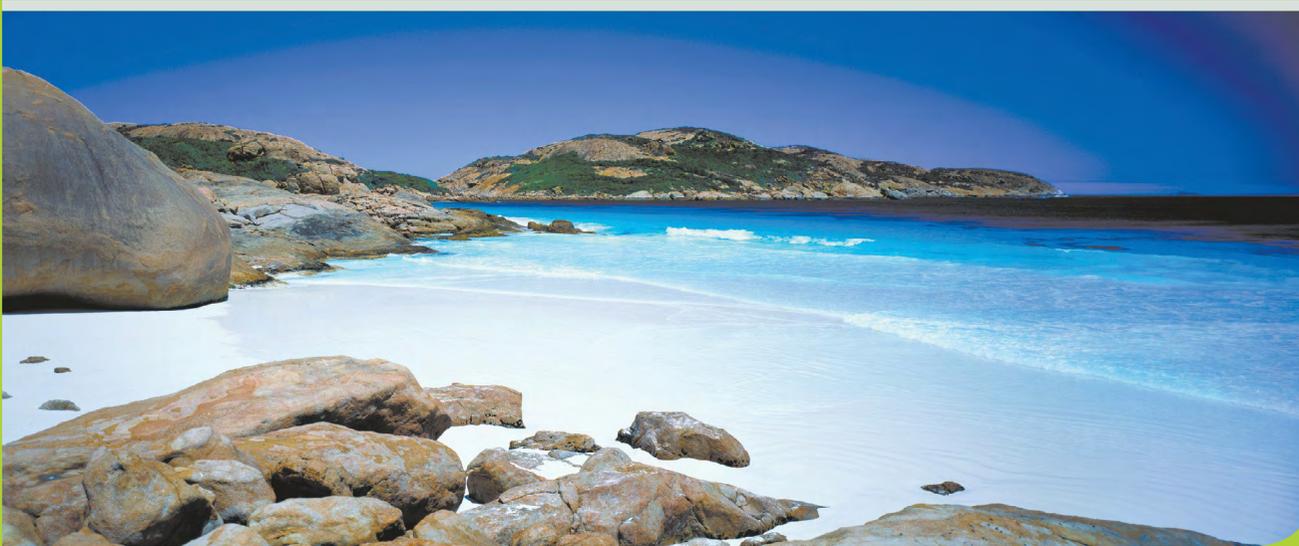


# Western Australia Local Government Waste and Recycling Census

*as reported by local governments*



2010-2011



Department of  
**Environment and Conservation**  
*Our environment, our future*



**Waste Authority**



**Western Australia.**  
*Too good to waste.*  
www.zerowaste.wa.gov.au

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## Disclaimer

This report has been prepared by the Department of Environment and Conservation in good faith, exercising all due care and attention. No representation or warranty, expressed or implied, is made as to the relevance, accuracy, completeness or fitness for purposes of this document in respect of any particular user's circumstances. Users of this document should satisfy themselves concerning its application to their situation, and where necessary seek expert advice.

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# Executive summary

The Department of Environment and Conservation (DEC) conducts an annual census of local governments in Western Australia on the waste and recycling services provided to households and commercial premises by local government. This report presents data for the 2010-2011 financial year.

The data presented in this report is provided by local governments. While DEC has made considerable efforts to verify the information by local governments wherever possible, DEC is not able to validate the raw data that forms the basis of this report.

The response rate for the 2010-11 Local Government Waste and Recycling Census was 97%, with all 30 metropolitan local governments submitting data.

Statewide, local governments managed approximately 1.42 million tonnes of material through domestic waste and recycling services, of which approximately 69% is disposed to landfill. The overall statewide diversion rate is approximately 31%.

Most waste diversion was achieved through kerbside collections, although vergeside collections and drop-off facilities continue to be important mechanisms for waste diversion. Drop-off facilities play an important role in waste diversion in many non-metropolitan local government areas, where a kerbside recycling service is often not possible, financially.

A summary of material destination for the metropolitan area and non-metropolitan areas is presented in Figure 1 below.

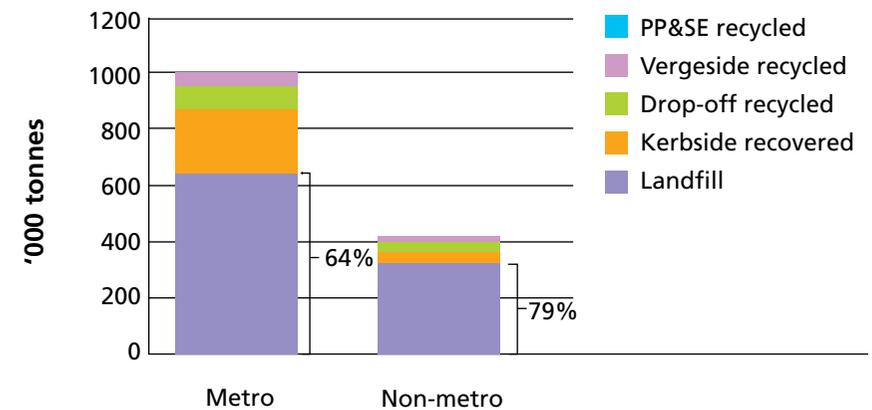


Figure 1: Material destination - metro vs non-metro

# Introduction

The Department of Environment and Conservation (DEC) conducts an annual census of the waste and recycling services provided to households and commercial premises by local government in Western Australia. This report presents data from the census for the 2010-2011 financial year.

The information provided by local governments in the Census is used by the State Government for a variety of purposes, including:

- Reporting to the Standing Council on Environment and Water on the implementation of the *National Environment Protection (Used Packaging Materials) Measure*
- Development of policy and programs by DEC and the Waste Authority
- Development of policy by the Office of the Minister for the Environment
- Monitoring of progress towards the targets in the Waste Strategy.

In addition, it is envisaged that the information collected in the census will be of value to local government. To this end, where local governments have assented, the data is provided to the Western Australian Local Government Association (WALGA) and the Forum of Regional Councils (FORC).

DEC acknowledges the co-operation and contribution of local governments in providing the data presented within this report. Please note that the information within this report is entirely dependent on the accuracy of data supplied by local governments in the 2010-11 census. While DEC has made considerable efforts to verify the information provided by local governments wherever possible, DEC is not able to validate the raw data that forms the basis of this report.

# Data sources

The main source of information for this report is the 2010-11 local government waste and recycling census. At the time of finalising this report, 97% of local governments had participated in the census. The local governments that did not submit data to the 2010/11 census prior to the report being finalised were:

- Shire of Cunderdin
- Shire of Ngaanyatjarraku
- Shire of Quairading
- Town of Port Hedland
- Shire of Tammin

**Table 1: Census participation by local governments (2010-11)**

	Number of LGs	LGs Participated	% Of Total
Metro	30	30	100%
Metro Regional Councils	5	5	100%
Non-Metro	111	106	95%
Non-Metro Regional Councils	3	3	100%
<b>Total</b>	<b>149</b>	<b>144</b>	<b>97%</b>

The participation level by local governments is provided in Table 1. It should also be noted that for the reporting period the City of Geraldton-Greenough and Shire of Mullewa were separate local governments, but these local governments are now amalgamated as the City of Greater Geraldton, and will report as one local government in subsequent years. For the reporting period, City of Stirling was a member of the Mindarie Regional Council, and is therefore included in the Mindarie Regional Council statistics for this report.

Statistics of the number of households per local government area were

extracted from The Western Australian Local Government Directory 2012 published by WALGA. This publication includes demographic data for each local government for 2010-11. The estimate of the number of households for Shire of Mundaring was taken from the Local Government Directory 2011.

Population figures that were used for per capita calculations are derived from the Western Australian Planning Commission publication *Western Australia Tomorrow, Population Report No.7, February 2012*. The “band C” population estimates were used. Population figures for the City of Geraldton-Greenough and Shire of Mullewa were taken from the Local Government Directory 2011. Population figures for Shire of Christmas Island and Shire of Cocos (Keeling) Islands were taken from the Local Government Directory 2012.

# Waste and recycling services to households

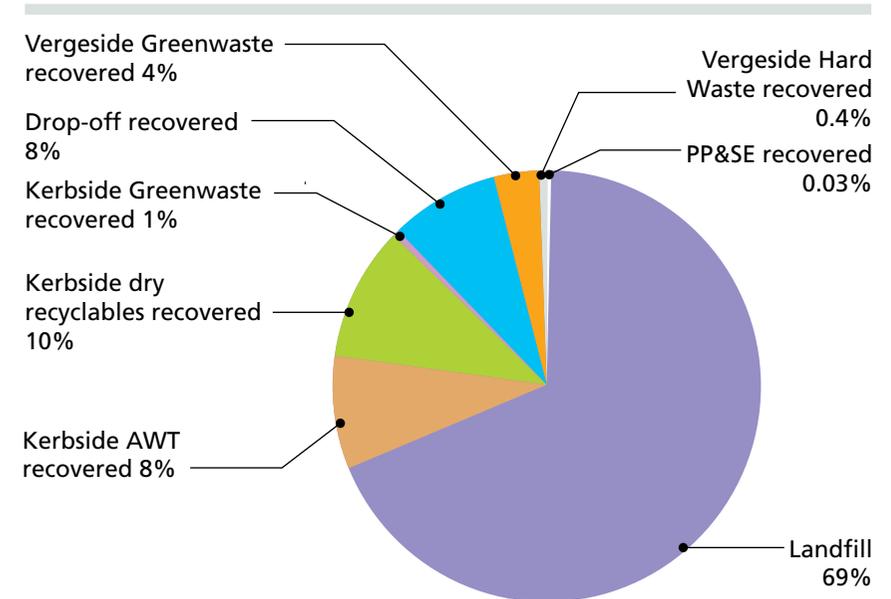
Local governments provide a range of waste and recycling collection services to their residents. These are generally categorised as kerbside, vergeside, drop-off and public place/special events (PP&SE).

The total amount of material managed by all Western Australian local governments through their domestic waste and recycling services in 2010-11 was 1 416 300 tonnes. Metropolitan local governments managed a total of 1 000 041 tonnes.

Using all data collected State-wide, the *weighted*<sup>1</sup> average total amount of domestic waste (including garbage and recycling) handled by local governments was approximately 0.59 tonnes per person, or 1.47 tonnes per household in 2010-11. This equates to approximately 11.3 kg/person/week or 28.3 kg/household/week (weighted averages)<sup>1</sup>.

The destination of material collected by local governments (statewide) is presented in Figure 2.

Figure 3 presents aggregated data on the destination of material collected by metropolitan local governments.



**Figure 2: Destination of waste and recycling material handled by local governments in WA**

Figure 4 presents a comparison of material destination between metropolitan and non-metropolitan local governments. As expected, metropolitan local governments have a higher diversion of waste from landfill. This is due to access to recovery facilities, such as Material Recovery Facilities (MRFs) and Alternative Waste Technologies (AWTs). For many non-metropolitan local governments, landfill is the only viable option for waste management, which is reflected in the overall non-metropolitan waste to landfill rate of 79%.

<sup>1</sup> Weighted averages give greater weight to data from larger local governments, which tend to have better data collection and reporting systems. Therefore, the data from larger local governments is considered more reliable.

# Waste and recycling services to households (continued)

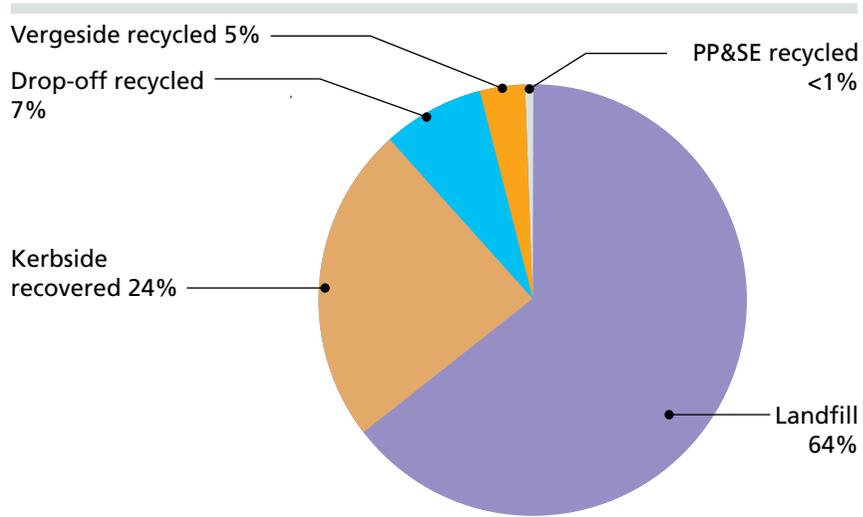


Figure 3: Destination of waste and recycling material handled by metropolitan local governments

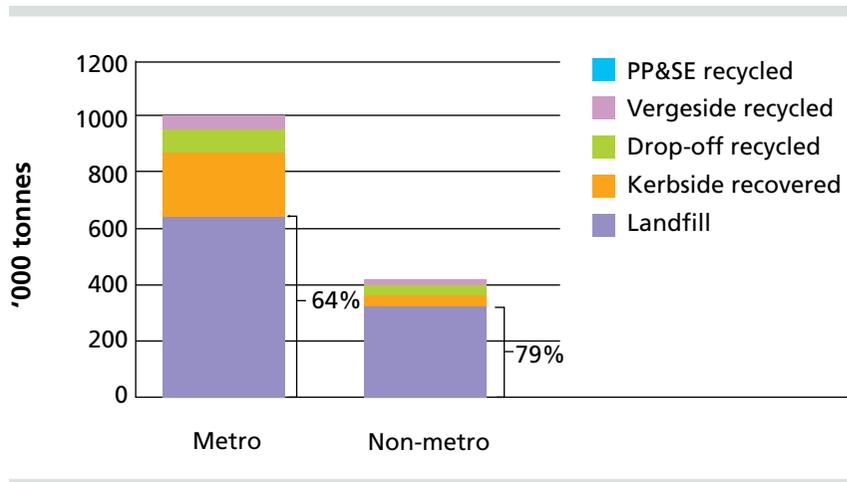


Figure 4: Material destination - metro vs non-metro

The metropolitan local governments with the highest overall diversion rate in 2010-11 were as per Table 2 below.

Table 2: Metropolitan local governments with the highest diversion rates

Local Government	Diversion rate for domestic waste
City of Melville*	56%
City of Cockburn	56%
Town of East Fremantle	56%
City of Nedlands	52%
City of Wanneroo	52%
Town of Cambridge	51%
City of Fremantle	49%
City of Joondalup	43%
Town of Vincent	40%
Shire of Peppermint Grove	39%

\*City of Melville only provided estimates of the tonnes collected and recycled. Therefore, the diversion rate is an estimate only.

Details of the services reported by the local governments listed in Table 2 are provided in Table 8 in Appendix A.

# Kerbside services

Kerbside services are defined as containerised, regular, frequent collection of waste and/or recyclables from the front of the household.

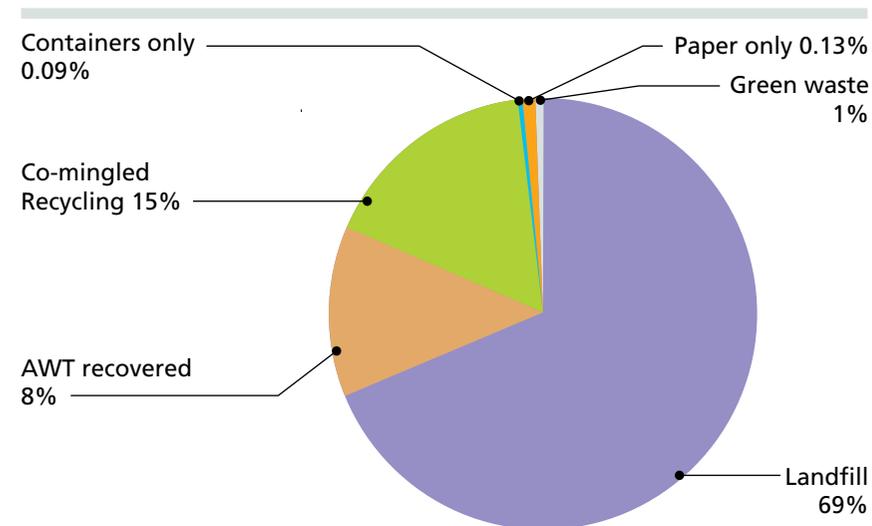


**Figure 5: Example of a kerbside waste service**

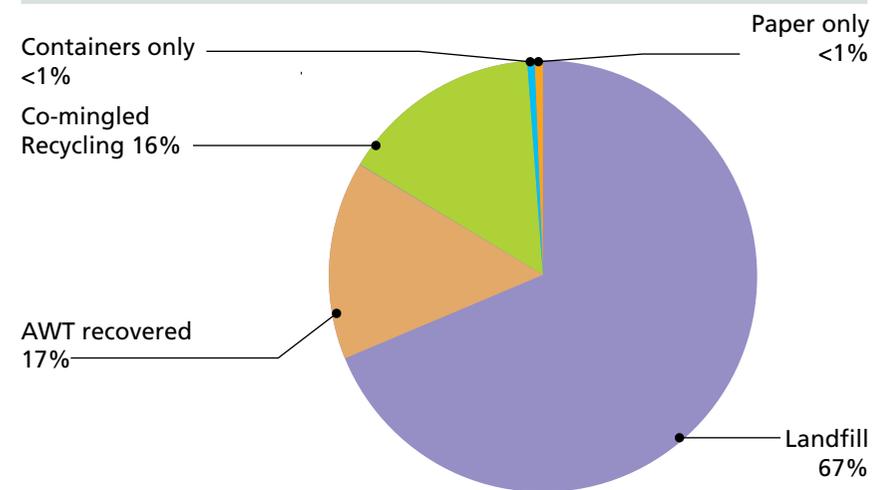
Throughout WA, 133 local governments offer a kerbside waste collection service. Of these, 3 only disposed of the kerbside waste to an AWT plant, a further 8 disposed of some kerbside waste to AWT, with the remainder mixed waste disposed to landfill. A total of 122 local governments disposed of waste collected at kerbside directly to landfill.

**Kerbside recycling services** are also widespread, with 76 local governments providing a fortnightly co-mingled recycling collection, 4 reported providing a weekly co-mingled recycling collection and a further 7 providing some other kind of kerbside recycling service for recyclable containers and/or paper. There are 4 local governments in Western Australia that provide a kerbside green waste collection service.

As can be seen from Figure 6 and Figure 7, most of the material collected in kerbside collections is disposed to landfill. However, the introduction of AWTs has seen a marked increase in the percentage of material recovered.



**Figure 6: Destination of material collected in kerbside collections by local governments in WA**



**Figure 7: Destination of material collected in kerbside collections by metropolitan local governments**

# Vergeside services

**Vergeside** collection services are intermittent, non-containerised collection services, generally of bulky wastes, such as green waste and/or “hard waste”. “Hard waste” is bulky household items such as furniture, mattresses and whitegoods.



**Figure 8: Example of vergeside services (green waste - left, hard waste - right)**

Across WA, 65 local governments reported that they offer a **vergeside green waste** collection service, 70 local governments offer a **vergeside hard waste** collection service, while 58 reported that they offer both vergeside green waste collections and **vergeside** hard waste collections to their residents.

In the metropolitan area, all local governments except City of Bayswater offer both a vergeside green waste and a **vergeside** hard waste collection service. City of Bayswater has a fortnightly kerbside green waste collection service.

State-wide, 52 013 tonnes of green waste and 5 146 tonnes of hard waste was recovered from **vergeside** services. In the metropolitan region, 47 251 tonnes of green waste and 3 294 tonnes of hard waste were recovered from **vergeside** services.

# Drop-off services

**Drop-off** services are central locations, usually at a waste depot, where residents can bring their waste for disposal or recyclables for recycling.

Many small non-metropolitan local governments offer **drop-off** recycling services instead of more expensive kerbside recycling services. In the metropolitan area, **drop-off** facilities are generally provided at waste facilities (such as transfer stations and landfills) operated by Regional Councils or individual local governments.



**Figure 9: Example of drop-off service**

According to the information provided, a total of 0.34 million tonnes was managed by Western Australian local governments through **drop-off** facilities, of which about 34% was recovered for recycling.

# Public Place and Special Event Services

**Public Place** services are permanent bins in public places, such as street litter bins and bins in public parks. **Special event** services are temporary bins that are put in place for events, such as bins for a festival or extra bins brought in for a sporting event.



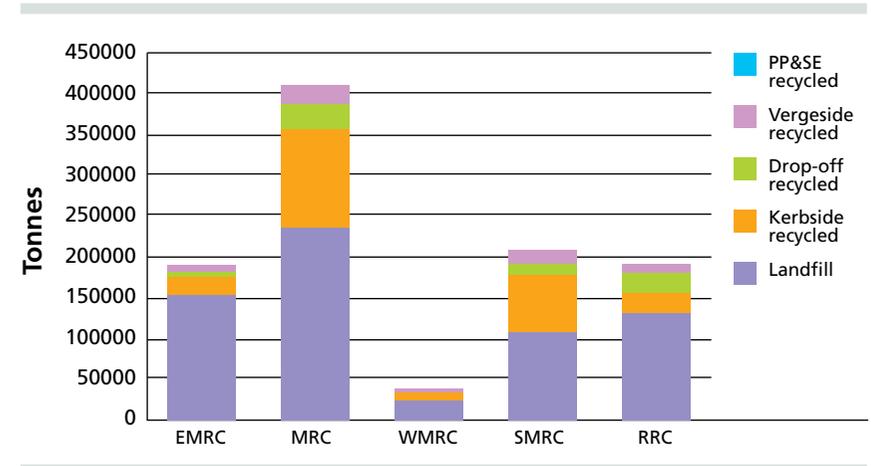
**Figure 10: Example of public place (upper) and special event (lower) services**

Statewide, a total of 8 217 tonnes of **public place** and **special event** waste was reported by local governments, of which approximately 5% was reported to have been recovered for recycling.

# Metropolitan Regional Councils

The five metropolitan regional councils are Eastern Metropolitan Regional Council (EMRC), Mandarie Regional Council (MRC), Western Metropolitan Regional Council (WMRC), Southern Metropolitan Regional Council (SMRC) and Rivers Regional Council (RRC). RRC has member councils from outside the metropolitan area.

In the metropolitan area, regional local governments have a role in processing mixed waste or managing landfills that receive mixed waste from local government domestic waste collections. Each Regional Council offers different services to its member councils. EMRC owns and operates Red Hill landfill. MRC owns and operates Tamala Park landfill and has a long term arrangement with BioVision 2020 Pty Ltd, based at Neerabup, to process domestic waste from member councils. WMRC operates a transfer station and has a contract with DiCom to establish an AWT plant within its region. SMRC owns and operates a mixed waste aerobic AWT. RRC is investigating options for establishing an AWT plant to process waste from its member councils. During 2010-11, four of the Regional Councils operated drop-off facilities.



**Figure 11: Comparison of waste and recycling destination by metropolitan regional council**

It should be noted that during the 2010-11 reporting period, City of Stirling was a member of MRC. City of Stirling processed most of its waste through the Atlas AWT.

# Financial data

The quality of the financial data provided by local governments in the Census was highly variable. The figures provided below are based on those provided by local government and are the best available at the time of publication.

Statewide, local governments reported the cost of providing domestic waste and recycling services was approximately \$211million. Local governments in the metropolitan area reported spending \$159million on domestic waste and recycling services.

Annual charges for domestic services in the metropolitan area ranged from \$158 per year to \$572 per year.



# Appendix A: Data Tables

**Table 3: Destination of material collected in local government domestic waste and recycling services**

Destination	'000 tonnes		Recovery rate by service		
	Metro	Non-metro	WA	Metro	WA
<b>Landfill</b>	645	328	973.21		
<b>Kerbside recovered</b>	237	32	269.66	34%	29%
<b>Drop-off recycled</b>	67	49	115.89	40%	34%
<b>Vergeside recycled</b>	51	7	57.16	41%	41%
<b>PP&amp;SE recycled</b>	0.1	0.3	0.38	3%	5%

**Table 4: Waste and recycling per person**

STATE-WIDE	
Population	2 363 587
Landfill (tonnes)	973 211
Recovered (tonnes)	443 090
Domestic waste generation per person (tonnes) - unweighted	0.616
Domestic waste generation per person (tonnes) - weighted	0.590
Landfill per person (tonnes)	0.423
Recovered per person (tonnes)	0.193

**Table 5: Distribution of local governments by population**

Population	Number of local governments		
	WA	METRO	NON-METRO
Less than 5000	82	1	81
5000-9999	16	4	12
10000-50000	30	13	17
Greater than 50000	13	12	1

**Table 6: Number of households and population figures for metropolitan area**

Metropolitan demographic data	
total population – WAPC 2012 (Band 'C', year 2011)	1749800
total households	682292

## Appendix A: Data Tables (continued)

**Table 7: Destination of material by Regional Council**

Destination	EMRC		MRC		WMRC		SMRC		RRC	
<b>Landfill</b>	153508	80%	238270	58%	19690	68%	109605	54%	133178	71%
<b>Kerbside recycled</b>	22754	12%	114390	28%	5439	19%	67046	33%	25984	14%
<b>Drop-off recycled</b>	6071	3%	38028	9%	988	3%	14723	7%	18327	10%
<b>Vergeside recycled</b>	8791	5%	16704	4%	2598	9%	11193	6%	9146	5%
<b>PP&amp;SE recycled</b>	35	0.02%	0	0%	51	0.18%	10	0.01%	34	0.02%
<b>TOTAL</b>	<b>191159</b>		<b>407392</b>		<b>28765</b>		<b>202578</b>		<b>186670</b>	



## Appendix A: Data Tables (continued)

<b>Table 8: Domestic services by metropolitan councils with high diversion rates</b>				
<b>Local Government</b>	<b>Diversion rate for domestic waste</b>	<b>Kerbside service</b>	<b>Vergeside service</b>	<b>Drop-off service</b>
City of Melville	*56%	Weekly 240L MGB waste to AWT Fortnightly 240L MGB co-mingled recycling	Quarterly green waste Quarterly hard waste	N/A
City of Cockburn	56%	Weekly 240L MGB waste to AWT Weekly 240L MGB co-mingled recycling	Quarterly green waste Annual hard waste	Mixed waste and recycling
Town of East Fremantle	56%	Weekly 240L MGB waste to AWT Fortnightly 240L MGB co-mingled recycling	Quarterly green waste Annual hard waste	N/A
City of Nedlands	52%	Weekly 240L MGB waste to landfill Fortnightly 240L MGB co-mingled recycling Fortnightly 240L MGB green waste	Annual green waste Annual hard waste	Recycling
City of Wanneroo	52%	Weekly 240L MGB waste to landfill and AWT Fortnightly 240L MGB co-mingled recycling	6-monthly green waste 6-monthly hard waste	Mixed waste and recycling
Town of Cambridge	51%	Weekly 240L MGB waste to landfill and AWT Fortnightly 240L MGB co-mingled recycling	6-monthly green waste 6-monthly hard waste	N/A
City of Fremantle	49%	Weekly 240L MGB waste to landfill and AWT Fortnightly 240L MGB co-mingled recycling	Green waste and hard waste - other	N/A
City of Joondalup	43%	Weekly 240L MGB waste to landfill and AWT Fortnightly 240L MGB co-mingled recycling	Green waste and hard waste - other	Green waste
Town of Vincent	40%	Weekly 240L MGB waste to landfill and AWT Fortnightly 240L MGB co-mingled recycling	6-monthly green waste Annual hard waste	N/A
Shire of Peppermint Grove	39%	Weekly 240L MGB waste to landfill Fortnightly 240L MGB co-mingled recycling	6-monthly green waste 6-monthly hard waste	N/A

\*Estimate only