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WASTE MANAGEMENT INDUSTRY

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- For further information about these and related statistics, contact Graham Boxsell on Canberra 02 6252 5633, or any ABS office shown on the back cover of this publication.

NOTES

ABOUT THIS PUBLICATION

This publication presents results, in respect of the 1996–97 financial year, from the first survey of the waste management industry conducted by the Australian Bureau of Statistics (ABS).

For details of the type of businesses and organisations included in the scope of the survey see paragraph 2 of the Explanatory Notes.

COMMENTS ABOUT THIS PUBLICATION

The ABS welcomes comments and suggestions from users recommending industries and data items for inclusion in future service industries surveys. These comments should be addressed to:

The Director, Service Industries Surveys, ABS, PO Box 10, Belconnen, ACT, 2616.

SYMBOLS AND OTHER USAGES

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
EPA	Environment Protection Authority
n.p.	not available for publication but included in totals where applicable
PAYE	pay income tax as you earn
RSE	relative standard error
SE	standard error
. .	not applicable
—	nil or rounded to zero
*	subject to sampling variability too high for most practical purposes
**	subject to sampling variability too high for practical purposes

Where figures have been rounded, discrepancies may occur between the sum of the component items and the total.

W. McLennan
Australian Statistician

SUMMARY OF FINDINGS

INTRODUCTION

This publication presents results from a sample survey of employing private and public trading businesses in the waste management industry. It includes businesses whose main activity was the collection, transport and/or disposal of refuse (except through sewerage systems) (i.e. businesses classified to Class 9634 of the Australian and New Zealand Standard Industrial Classification (ANZSIC)).

In addition, the waste management activities of general government organisations (mostly local government authorities) were included in the survey, even though these organisations are defined to other classes in ANZSIC.

Tables 1 and 2 of this publication contain summary information about private and public trading businesses and general government organisations in the waste management industry. Tables 3–8 contain detailed data about the private and public trading sector, while table 9 contains data about the general government sector. Tables 10 and 11 contain information about quantities of waste and recyclables handled by businesses and organisations of both sectors.

BUSINESSES AND ORGANISATIONS

There were 1,727 businesses and organisations involved in providing waste management services at the end of June 1997, consisting of 1,023 private and public trading businesses and 704 general government organisations. Many of the businesses and organisations in the industry carried out multiple waste management functions during 1996–97.

A large majority (89%) were involved in the collection and transport of waste. There were 845 private and public trading businesses and 688 general government organisations carrying out this activity. In contrast, more general government organisations (463) than private and public trading businesses (82) were involved in the operation of landfills at the end of June 1997.

SOURCES OF INCOME

During 1996–97, the 1,023 private and public trading businesses in the waste management industry generated total income of \$1,493 million. The two major sources of this income were the collection and transport of waste which accounted for \$876 million (representing 59% of total industry income) and the treatment/processing and/or disposal of waste which generated \$380 million in income (representing 25% of total industry income).

Most (91%) of the income from the collection and transport of waste related to solid waste. The two major sources were commercial, industrial, construction and demolition waste (\$498 million) and domestic and municipal waste (\$248 million).

SOURCES OF INCOME

continued

Other major income sources for these businesses were the collection and transport of recyclables (\$92 million) and the treatment/processing and/or sale of recyclables (\$60 million).

General government organisations received \$134 million from the treatment/processing and/or disposal of waste (66% of their total waste-related income) and \$45 million from the collection and transport of waste (22% of their waste-related income).

EXPENDITURE

Private and public trading businesses in the waste management industry had total expenses of \$1,351 million during 1996–97. Labour costs of \$369 million represented 27% of total expenses with the average labour cost per employee being \$39,200.

Other major expenses of the industry were fees paid for the treatment/disposal of waste (\$167 million), depreciation and amortisation (\$153 million), contract expenses for waste management services (\$144 million) and on-road motor vehicle running expenses (\$135 million).

General government organisations had total waste management expenses of \$833 million. Contract expenses of \$420 million and wages and salaries expenses of \$154 million were the major items of expense representing 50% and 18% of total expenses respectively.

PROFITABILITY

The private and public trading businesses in the industry recorded an operating profit before tax of \$142 million, which represented an operating profit margin of 9.6%. Businesses employing 5–19 persons had the highest (16.5%) operating profit margin.

EMPLOYMENT

At the end of June 1997, there were 9,956 persons employed by private and public trading businesses in the waste management industry. A further 608 owner drivers worked for businesses in the industry on a contract basis.

There were only 554 working proprietors and partners of businesses in the industry. Accordingly, the number of employees (9,402 persons) represented 94% of industry employment. A total of 8,230 persons (83%) worked on a full-time basis.

In addition general government organisations employed 4,891 persons on waste management activities.

BUSINESS SIZE

There were 728 private and public trading businesses in the industry at the end of June 1997 which employed less than five persons. While this represented 71% of all businesses in the industry, these 'micro' businesses only accounted for 15% of industry employment and 9% of total industry income. In contrast, there were 11 businesses employing 100 persons or more, which accounted for 44% of industry employment and 56% of total industry income.

STATE AND TERRITORY
DIMENSION

The respective roles and hence the relative contributions of the public and private trading sector and general government organisations in waste management activities varies from State to State.

At the end of June 1997, 31% of the private and public trading businesses in the waste management industry had operations in New South Wales. These businesses accounted for 33% of employment (3,255 persons) and 42% of total industry income (\$626 million). The New South Wales proportion of industry income was boosted by \$229 million in income from treatment/processing and/or disposal of waste, which represented 60% of the industry's income from this activity.

In contrast, more businesses in the waste management industry operated in Victoria (33% of all businesses). However these businesses accounted for only 24% of industry employment (2,390 persons) and 22% of total industry income (\$323 million).

The major income source for general government organisations was from the treatment/processing and/or disposal of waste (\$134 million) which was dominated by Victoria (27% of this income), Queensland (23%) and New South Wales (22%).

QUANTITIES OF WASTE

During 1996–97, 21.2 million tonnes of solid waste were received and disposed of at landfills. This amount comprised 10.8 million tonnes at privately operated landfills and 10.5 million tonnes at landfills operated by general government organisations. Landfill operations varied between States and Territories, with New South Wales' privately operated landfills receiving and disposing of 5.1 million tonnes of solid waste compared to 2.1 million tonnes at general government operated landfills. In contrast, Queensland's privately operated landfills received and disposed of 1.1 million tonnes of solid waste, while general government operated landfills received and disposed of three times that amount (3.3 million tonnes).

QUANTITIES OF
RECYCLABLES

In total, 1.5 million tonnes of recyclables were owned and sold by waste management businesses and organisations in 1996–97. Private and public trading businesses accounted for the majority of these recyclables (1.0 million tonnes). In terms of tonnage, paper and cardboard (0.4 million tonnes) and concrete (0.4 million tonnes) were the major items recycled. These quantities do not include the amount of recyclables which were owned and sold by businesses which are not part of the waste management industry.

1

WASTE MANAGEMENT BUSINESSES AND ORGANISATIONS

<i>Activity</i>	<i>Private and public trading sector</i>	<i>General government sector</i>	<i>All businesses/ organisations</i>
	<i>no.</i>	<i>no.</i>	<i>no.</i>
Collection and transport of waste	845	688	1 533
Collection and transport of recyclables	218	419	637
Ownership of transfer stations	50	186	236
Operation of transfer stations	77	148	225
Ownership of landfills	35	550	585
Operation of landfills	82	463	545
Ownership of liquid treatment plants	23	..	23
Operation of liquid treatment plants	26	..	26
Other	43	23	66
All activities(a)	1 023	704	1 727

(a) Businesses and organisations may be involved in more than one activity.

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KEY AGGREGATES, BUSINESSES/ORGANISATIONS IN WASTE MANAGEMENT SERVICES

	<i>Private and public trading sector</i>	<i>General government sector</i>
Businesses/organisations at end June (no.)	1 023	704
Employment at end June (no.)	9 956	4 891
Income		
Collection and transport of waste (\$m)	875.9	44.6
Treatment/processing/disposal of waste (\$m)	379.9	134.3
Other income (\$m)	236.7	24.1
<i>Total (\$m)</i>	<i>1 492.5</i>	<i>203.0</i>
Expenses		
Labour costs (\$m)	368.9	176.8
Contract and subcontract expenses for waste management services (\$m)	144.0	420.1
Fees for the treatment/disposal of waste (\$m)	166.7	74.4
Waste disposal levies/contributions paid directly to EPA (\$m)	36.4	10.3
Other expenses (\$m)	634.5	151.4
<i>Total (\$m)</i>	<i>1 350.5</i>	<i>833.0</i>
Operating profit before tax (\$m)	142.0	..
Operating profit margin (%)	9.6	..
Industry gross product (\$m)	711.2	176.8
Quantity of waste received and disposed of at landfills operated by this business/organisation		
Solid waste ('000 tonnes)	10 757.0	10 463.5
Sludge and liquid waste ('000 tonnes)	35.8	5 474.0
<i>Total ('000 tonnes)</i>	<i>10 792.8</i>	<i>15 937.5</i>

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PRIVATE AND PUBLIC TRADING SECTOR, SOURCES OF INCOME

	<i>Businesses at end June(a)</i>	<i>Value</i>	<i>Contribution to total income</i>
	<i>no.</i>	<i>\$m</i>	<i>%</i>
Sales of goods and services			
Income from the collection and transport of waste			
Solid waste			
Domestic and municipal waste	393	247.5	16.6
Commercial, industrial, construction and demolition waste	391	497.7	33.3
Other solid waste (includes cleanfill)	64	49.2	3.3
<i>Total</i>	708	794.4	53.2
Liquid waste	176	78.1	5.2
Sludge	54	3.4	0.2
<i>Total</i>	845	875.9	58.7
Income from the treatment/processing and/or disposal of waste			
Solid waste	109	316.8	21.2
Liquid waste	32	59.9	4.0
Sludge	5	3.1	0.2
<i>Total</i>	135	379.9	25.5
Income from the collection and transport of recyclables	207	92.2	6.2
Income from the treatment/processing and/or sale of recyclables	183	59.6	4.0
Income from waste management consulting services	19	5.2	0.3
Rent, leasing and hiring income	54	9.1	0.6
Other operating income	179	60.5	4.1
<i>Total</i>	1 023	1 482.4	99.3
Other income			
Interest income	231	3.3	0.2
Government funding	61	1.8	0.1
Other non-operating income	*11	5.0	0.3
<i>Total</i>	274	10.2	0.7
Total	1 023	1 492.5	100.0

(a) Businesses and organisations may be involved in more than one activity, hence the counts of businesses and organisations for components do not sum to the total.

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PRIVATE AND PUBLIC TRADING SECTOR, ITEMS OF EXPENDITURE

	<i>Value</i>	<i>Contribution to total income</i>
	<i>\$m</i>	<i>%</i>
Labour costs		
Wages and salaries	327.8	24.3
Employer contributions to superannuation funds	22.0	1.6
Workers' compensation costs	19.1	1.4
<i>Total</i>	368.9	27.3
Selected expenses		
Contract and subcontract expenses for waste management services	144.0	10.7
Fees for the treatment/disposal of waste	166.7	12.3
Waste management licence fees	4.1	0.3
Waste disposal levies/contributions paid to the EPA	36.4	2.7
Repair and maintenance expenses	46.1	3.4
On-road motor vehicle running expenses	135.3	10.0
Rent, leasing and hiring expenses	40.4	3.0
Other operating expenses	151.2	11.2
<i>Total</i>	724.1	53.6
Other costs		
Purchases of goods and materials	48.8	3.6
Depreciation and amortisation	153.2	11.3
Interest expenses	33.9	2.5
Insurance premiums	13.8	1.0
Bad debts	7.6	0.6
<i>Total</i>	257.4	19.1
Total	1 350.5	100.0

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PRIVATE AND PUBLIC TRADING SECTOR, CHARACTERISTICS OF EMPLOYMENT

	<i>Full-time</i>	<i>Part-time</i>	<i>Total</i>
Working proprietors and partners of unincorporated businesses (no.)	475	79	554
Employees (no.)	7 755	1 647	9 402
<i>Total employment (no.)</i>	8 230	1 726	9 956
Contribution to total (%)	82.7	17.3	100.0
Number of owner/drivers at end June for whom PAYE tax is not deducted (no.)	608

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PRIVATE AND PUBLIC TRADING SECTOR, KEY CHARACTERISTICS—BUSINESS SIZE

	<i>Employment size category</i>				<i>Total</i>
	<i>0–4 persons</i>	<i>5–19 persons</i>	<i>20–99 persons</i>	<i>100 or more persons</i>	
Businesses/organisations at end June (no.)	728	224	60	11	1 023
Employment at end June					
Working proprietors and partners (no.)	456	85	*13	—	554
Contribution to total (%)	82.3	15.3	2.3	—	100.0
Employees (no.)	998	1 835	2 168	4 401	9 402
Contribution to total (%)	10.6	19.5	23.1	46.8	100.0
<i>Total (no.)</i>	<i>1 454</i>	<i>1 921</i>	<i>2 181</i>	<i>4 401</i>	<i>9 956</i>
Contribution to total (%)	14.6	19.3	21.9	44.2	100.0
Wages and salaries (\$m)	26.1	51.4	68.8	181.5	327.8
Contribution to total (%)	8.0	15.7	21.0	55.4	100.0
Total income (\$m)	134.4	275.0	253.6	829.5	1 492.5
Contribution to total (%)	9.0	18.4	17.0	55.6	100.0
Total expenses (\$m)	122.0	230.2	236.0	762.3	1 350.5
Contribution to total (%)	9.0	17.0	17.5	56.4	100.0
Operating profit margin (%)	9.3	16.5	7.0	8.2	9.6

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PRIVATE AND PUBLIC TRADING SECTOR, SELECTED PERFORMANCE RATIOS

	<i>Employment size category</i>				<i>Total</i>
	<i>0–4 persons</i>	<i>5–19 persons</i>	<i>20–99 persons</i>	<i>100 or more persons</i>	
Total income per person employed (\$'000)	92.4	143.2	116.3	188.5	149.9
Total expenses per person employed (\$'000)	83.9	119.9	108.2	173.2	135.6
Operating profit before tax per person employed (\$'000)	8.5	23.3	8.1	15.3	14.3
Labour costs per employee (\$'000)	30.0	31.6	35.4	46.4	39.2
Labour costs to total expenses (%)	24.6	25.2	32.5	26.8	27.3
Operating profit margin (%)	9.3	16.5	7.0	8.2	9.6
Income from the collection and transport of waste to total income (%)	75.2	42.8	54.6	62.5	58.7
Income from the treatment/processing and/or disposal of waste to total income (%)	11.1	43.7	24.2	22.1	25.5

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PRIVATE AND PUBLIC TRADING SECTOR, STATES AND TERRITORIES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Businesses/organisations at end June (no.)(a)	316	341	110	99	132	19	12	22	1 023
Employment at end June (no.)	3 255	2 390	1 867	904	985	217	129	209	9 956
Wages and salaries (\$m)	125.4	67.2	66.4	22.7	29.7	6.6	3.7	6.2	327.8
Income items									
Income from the collection and transport of recyclables (\$m)	39.1	13.5	24.0	n.p.	6.2	0.6	n.p.	3.6	92.2
Income from the collection and transport of waste (\$m)	315.8	206.3	171.9	69.7	76.4	17.1	12.4	6.2	875.9
Income from the treatment/processing and/or sale of recyclables (\$m)	18.1	10.9	14.1	*11.3	n.p.	n.p.	—	n.p.	59.6
Income from the treatment/processing and/or disposal of waste (\$m)	229.2	75.8	28.2	22.4	21.9	—	n.p.	n.p.	379.9
Other private and public trading sector income (\$m)	24.0	16.1	17.4	n.p.	n.p.	n.p.	n.p.	**0.3	84.9
<i>Total (\$m)</i>	<i>626.1</i>	<i>322.5</i>	<i>255.7</i>	<i>115.7</i>	<i>120.8</i>	<i>22.4</i>	<i>13.3</i>	<i>16.0</i>	<i>1 492.5</i>

(a) Multi-State businesses are counted in each State in which they operate. Hence the counts of businesses of States and Territories do not sum to the total for Australia.

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GENERAL GOVERNMENT SECTOR, STATES AND TERRITORIES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Businesses/organisations at end June (no.)	178	78	151	89	140	29	38	1	704
Employment at end June (no.)	2 044	767	792	336	667	122	128	34	4891
Income from waste management activities									
Income from the collection and transport of waste (\$m)	13.8	0.6	21.6	1.2	6.4	0.3	**0.8	—	44.6
Income from the treatment/processing and/or disposal of waste (\$m)	29.8	36.8	31.2	11.5	15.0	n.p.	n.p.	4.3	134.3
Other income from waste management activities (\$m)	9.9	5.1	2.8	1.5	2.0	n.p.	n.p.	0.1	24.1
<i>Total (\$m)</i>	<i>53.5</i>	<i>42.5</i>	<i>55.6</i>	<i>14.2</i>	<i>23.4</i>	<i>6.5</i>	<i>2.9</i>	<i>4.4</i>	<i>203.0</i>
Expenses for waste management activities									
Wages and salaries (\$m)	71.1	30.4	19.2	7.3	17.5	4.8	1.8	2.0	154.1
Contract and subcontract expenses for the collection and transport of waste (\$m)	77.5	53.8	55.6	14.5	17.2	4.3	3.0	3.2	229.1
Contract and subcontract expenses for the collection and transport of recyclables (\$m)	38.1	22.6	19.4	3.9	5.0	1.3	0.0	2.2	92.5
Contract and subcontract expenses for the treatment/processing and/or disposal of waste (\$m)	11.3	14.5	34.9	5.4	7.4	1.2	2.0	—	76.8
Other contract and subcontract expenses (\$m)	4.8	8.5	2.4	3.2	1.9	0.4	0.3	0.3	21.7
Fees for the treatment/disposal of waste (\$m)	45.9	17.9	1.4	3.8	4.7	n.p.	n.p.	—	74.4
Other operating expenses for waste management activities (\$m)	75.1	30.4	33.8	13.6	18.8	n.p.	n.p.	6.6	184.4
<i>Total (\$m)</i>	<i>323.8</i>	<i>178.1</i>	<i>166.7</i>	<i>51.7</i>	<i>72.6</i>	<i>18.4</i>	<i>7.6</i>	<i>14.2</i>	<i>833.0</i>

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QUANTITIES OF SOLID WASTE AND RECYCLABLES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes
SOLID WASTE RECEIVED AND DISPOSED OF AT LANDFILLS									
Private and public trading sector	5 073.5	3 105.6	1 119.2	620.7	833.3	n.p.	n.p.	—	10 757.0
General government sector	2 097.2	1 914.5	3 309.6	713.6	1 595.8	456.7	140.1	236.0	10 463.5
Total	7 170.7	5 020.1	4 428.8	1 334.3	2 429.1	n.p.	n.p.	236.0	21 220.5
RECYCLABLES(a)									
Private and public trading sector	303.5	*459.2	87.7	*66.9	25.9	n.p.	n.p.	n.p.	993.1
General government sector	190.3	188.0	86.9	41.3	22.7	5.7	—	—	535.0
Total	493.8	*647.2	174.6	108.2	48.6	n.p.	n.p.	n.p.	1 528.0

(a) Recycling tonnage refers to the quantity of recyclables owned and sold by each particular business or organisation.

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QUANTITIES OF RECYCLABLES, BY TYPE

	<i>Private and public trading sector</i>		<i>General government sector</i>		<i>Total</i>	
	<i>Recycling tonnage(a)</i>	<i>Contribution to total</i>	<i>Recycling tonnage(a)</i>	<i>Contribution to total</i>	<i>Recycling tonnage(a)</i>	<i>Contribution to total</i>
	'000	%	'000	%	'000	%
Paper and cardboard	320.5	32.3	101.7	19.0	422.3	27.6
Glass	164.2	16.5	66.8	12.5	231.0	15.1
Mulch and compost	29.8	3.0	140.3	26.2	170.2	11.1
Oils	*2.0	0.2	140.3	26.2	142.4	9.3
Concrete	**330.0	33.2	22.9	4.3	**352.9	23.1
Plastic	18.8	1.9	6.4	1.2	25.2	1.6
Aluminium	4.9	0.5	2.3	0.4	7.2	0.5
Ferrous metals	46.0	4.6	42.3	7.9	88.3	5.8
Other metals	16.3	1.6	7.1	1.3	23.4	1.5
Other recyclables	*60.5	6.1	4.7	0.9	*65.2	4.3
Total	993.1	100.0	535.0	100.0	1 528.0	100.0

(a) Recycling tonnage refers to the quantity of recyclables owned and sold by each particular business or organisation.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents results, in respect of 1996–97, from a sample survey of 1,070 businesses and organisations in the waste management industry.

SCOPE

2 The waste management survey comprised:

- employing private and public trading businesses whose main activity was the collection and/or disposal of refuse (except through sewerage systems) (i.e. businesses classified to Class 9634 of the Australian and New Zealand Standard Industrial Classification); and
- the waste management activities of general government organisations (mostly local government authorities).

IMPROVEMENTS TO COVERAGE

3 Data in this publication have been adjusted to allow for lags in processing new businesses to the Australian Bureau of Statistics (ABS) business register, and the omission of some businesses from the business register. The majority of businesses affected and to which the adjustments apply are small in size.

4 Adjustments have been made to include new businesses in the estimates in the periods in which they commenced operations, rather than when they were processed to the business register. Adjustments of this type will continue to be applied in future periods.

5 Further adjustments have been made for businesses which had been in existence for several years, but, for various reasons, were not previously added to the ABS register. The ABS is remedying these omissions.

6 For more information on these adjustments, please refer to the ABS publication *Information Paper: Improvements to ABS Economic Statistics, 1997* (Cat. no. 1357.0).

STATISTICAL UNIT

7 The statistical unit for the survey was the management unit. The management unit is the highest-level accounting unit within a business or organisation, having regard for industry homogeneity, for which accounts are maintained. In nearly all cases it coincides with the legal entity owning the business (i.e. company, partnership, trust, sole proprietor, etc.) In the case of large diversified businesses, however, there may be more than one management unit, each coinciding with a 'division' or 'line of business'. A division or line of business is recognised where separate and comprehensive accounts are compiled for it.

8 For general government organisations, the unit was defined to be those activities associated with waste management.

RELIABILITY OF DATA

Reliability of estimates **9** The estimates presented in this publication are subject to sampling and non-sampling error.

Sampling errors **10** Since the estimates in this publication include information obtained from a sample drawn from units in the surveyed population, the estimates are subject to sampling variability, that is, they may differ from figures that would have been obtained if all units had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of units was included.

11 There are about two chances in three that a sample estimate will differ by less than one SE from the figure that would have been obtained if a census had been conducted, and approximately 19 chances in 20 that the difference will be less than two SEs.

12 Sampling variability can be measured by the relative standard error (RSE) which is obtained by expressing the SE as a percentage of the estimate to which it refers. The RSE is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling, and this avoids the need to refer also to the size of the estimate. The following table contains estimates of RSEs for a selection of the statistics presented in this publication.

RELATIVE STANDARD ERRORS, KEY AGGREGATES

	<i>Private and public trading sector</i>	<i>General government sector</i>
	%	%
Businesses/organisations at end June	2	0
Employment at end June	2	1
Income		
Collection and transport of waste	1	2
Treatment/processing/disposal of waste	5	1
Other income	3	1
<i>Total</i>	2	7
Expenses		
Labour costs	1	1
Contract and subcontract expenses for waste management services	4	1
Fees for the treatment/disposal of waste	2	1
Waste disposal levies/contributions paid directly to EPA	6	1
Other expenses	1	1
<i>Total</i>	1	0
Operating profit before tax	1	..
Operating profit margin	6	..
Industry gross product	2	1
Quantity of waste received and disposed of at landfills operated by this business/organisation		
Solid waste	8	1
Sludge and liquid waste	6	2
<i>Total</i>	8	1

Sampling errors *continued* **13** As an example of the above, an estimate of total income for the private and public trading sector in the waste management services industry is \$1,492.5 million and the RSE is 2%, giving a SE of \$29.9 million. Therefore, there would be two chances in three that, if all units had been included in the survey, a figure in the range of \$1,462.7 million to \$1,522.4 million would have been obtained, and 19 chances in 20 (i.e. a confidence interval of 95%) that the figure would have been within the range of \$1,432.8 million to \$1,552.2 million.

Non-sampling error **14** Errors other than those due to sampling may occur because of deficiencies in the register of units from which the sample was selected, non-response, and imperfections in reporting by respondents. Inaccuracies of this kind are referred to as non-sampling errors and they may occur in any collection, whether it be a census or a sample. Every effort has been made to reduce non-sampling error to a minimum by careful design and testing of questionnaires, and efficient operating procedures and systems used to compile the statistics.

REFERENCE PERIOD **15** Data contained in the tables in this publication relate to all businesses and organisations within the survey scope (see paragraphs 2 and 3) which operated in Australia at any time during the year ended June 1997. Counts of businesses and organisations include only those that were operating at 30 June 1997.

BUSINESSES CEASED
DURING THE YEAR **16** A very small number of organisations ceased operations during the 1996–97 reference period. As is normal ABS procedure, the contributions of these organisations were included in the survey output.

GLOSSARY

Bad debts	This is the amount of accounts receivable that are either written off, or estimated to be uncollectable during an accounting period, that are expensed in a period's profit calculations.
Collection and transport of recyclables	Income from this source is derived from the collection of recyclables from the kerb-side and drop-off centres, gardening refuse from parks and gardens, and recyclables collected from other sources (including businesses and commercial premises).
Collection and transport of waste	Income from this source is derived from the collection of waste from the kerb-side, drop-off centres, street sweepings and litter from street bins, waste from parks and gardens, and waste collected from other sources (including schools, business and commercial premises).
Commercial, industrial, construction and demolition waste	See Solid waste.
Contract and subcontract expenses for waste management services	These are expenses for waste management services paid to contract/agency staff (including owner/drivers) for whom PAYE tax is not deducted.
Depreciation and amortisation	The financial charges made to the accounts to reflect that part of the value of a tangible or intangible asset which may be regarded as having been used up in producing revenue in a particular accounting period. It includes expenses in respect of assets acquired under finance leases.
Domestic and municipal waste	See Solid waste.
Employees	This includes working directors, and other employees working for a business during the last pay period in June 1997. Employees absent on paid or prepaid leave are included. Excludes working proprietors and partners of unincorporated businesses.
Employer contributions to superannuation funds	This item includes all employer contributions to superannuation schemes (including the employer productivity contribution).
Employment at end June 1997	This item includes working proprietors and working partners of unincorporated businesses, working directors, and other employees working for a business during the last pay period in June 1997. Employees absent on paid or prepaid leave are included.
Employment for waste management activities	This item refers to employees of general government organisations engaged in waste management activities. Excludes contractors and subcontractors.
Fees for the treatment/disposal of waste	These are fees paid to government agencies and other businesses at transfer stations, landfills and liquid treatment plants. It excludes fees paid directly to the Environment Protection Agency.

Full-time employees	Employees who work 35 hours per week or more.
Government funding	This data item encompasses all forms of government funding and covers both operational and capital funding. It includes wages and salaries payments reimbursed under a government program such as trainee and apprenticeship schemes, specific purpose subsidies and grants for waste management and environmental protection, and low interest or interest free loans made by government to businesses to encourage expenditures on specific equipment (e.g. environmental protection equipment).
Industry gross product	A measure of the value of unduplicated gross product of businesses. For non-government units, industry gross product is defined as sales of goods and services plus funding from government plus capital work done by own employees for own use or for rental or lease minus purchases and selected expenses. For general government units, industry gross product is defined as being equal to wages and salaries plus superannuation payments plus workers' compensation costs plus depreciation.
Insurance premiums	This item includes optional third-party and comprehensive motor vehicle insurance premiums, fire, general, accident and public liability premiums, and errors and omissions insurance. Excludes workers' compensation insurance premiums and compulsory third-party motor vehicle insurance premiums.
Interest expenses	This expense includes interest on bank loans, loans from partners, and loans from government funding bodies, interest in respect of finance leases, interest equivalents such as hedging costs, and expenses associated with discounted bills.
Interest income	This income item includes interest from loans, finance leases, deposits in banks and non-bank financial institutions.
Labour costs	Labour costs include wages and salaries, employer contributions to superannuation funds, and workers' compensation costs. This item excludes payroll tax.
Landfill	Landfill is the disposal of waste in a naturally formed or excavated hole in the ground. There are both dry and wet landfills.
Landfill operator	This is the individual, business or local government authority who <i>operates</i> the landfill as distinct from those who <i>own</i> the landfill. Landfills may be operated on behalf of local government authorities, or licensed to accept wastes generated by parties other than the owner.
Liquid waste	This is waste in a liquid physical state that is disposed of at a wet landfill or processed at a treatment facility.
On-road motor vehicle running expenses	Expenses incurred using 'on-road' motor vehicles for business purposes and include such items as fuel, registration fees, compulsory third-party insurance premiums, and repair and maintenance.

Operating profit before tax (OPBT)	A measure of profit before extraordinary items are brought into account and prior to the deduction of income tax and appropriations to owners (e.g. dividends paid).
Operating profit before tax per person employed	OPBT divided by persons employed.
Operating profit margin	The percentage of sales of goods and services available as operating profit, i.e. (operating profit before tax times 100) divided by sales of goods and services.
Other contract and subcontract expenses (general government only)	This item includes contract and subcontract expenses for the treatment/processing of recyclables and for other contract and subcontract expenses for waste management services not separately included in other data items.
Other expenses	This item includes waste disposal levies/contributions paid directly to the Environment Protection Authority, waste management licence fees, insurance premiums, interest expenses, depreciation and amortisation, bad and doubtful debts, purchases of goods and materials, repair and maintenance expenses, on-road motor vehicle running expenses, rent, leasing and hiring expenses, and other operating expenses.
Other income	This item includes income from the collection and transport of recyclables, income from the treatment/processing and/or sale of recyclables, income from waste management consulting services, rent, leasing and hiring income, interest income, government funding, and other operating and non-operating income.
Other income from waste management activities (general government only)	This is income which is not separately included in other data items. It includes income from the collection and transport of recyclables, income from the treatment/processing and/or sale of recyclables, government funding, income from energy recovery at waste management facilities, income from the sale of compost bins and worm farms, rent, leasing and hiring income, and net profit (loss) on the sale of fixed tangible assets.
Other non-operating income	Other non-operating income includes dividends received, royalties income, income from net profit (loss) on sale of fixed tangible assets, and net profit (loss) on foreign loans as a result of variations in foreign exchange rate/transactions. Does not include extraordinary profit (loss).
Other operating expenses	This item includes telecommunication, postal, mailing and courier services' expenses, paper, printing and stationery expenses, advertising expenses, other management and administrative services, and other business expenses not included elsewhere.
Other operating expenses for waste management activities (general government only)	This item includes the purchases of compost bins and worm farms, waste management licence fees, waste disposal levies paid directly to the Environment Protection Authority, employer contributions to superannuation funds, workers' compensation costs and other running costs of waste management facilities.

Other operating income	This includes income from business activities which are not related to waste management.
Other private and public trading sector income	This item includes income from waste management consulting services, rent, leasing and hiring income, interest income, government funding, and other operating and non-operating income.
Other solid waste	See Solid waste.
Owner/drivers at end June	These are persons who owned and drove their own motor vehicles or who drove for a waste management business during the last pay period ending in June 1997 for whom PAYE tax was not deducted.
Part-time employees	Employees who work less than 35 hours per week.
Payments to waste management councils/authorities	These are expenses paid by local government to regional agencies/councils for waste management and environment protection services. This item includes membership contributions/fees and payments for waste management services.
Private and public trading sector	This sector consists of all businesses and organisations not in the general government sector.
Purchases of goods and materials	Purchases expenses are the costs of goods and services used in the production of the final output of a business. This item includes petroleum products and fuel expenses for off-road vehicles (e.g. fork-lifts, mobile plant and quarry dump trucks), compost bins, worm farms and waste containers.
Recycling/recyclables	<p>Recycling is the separation of a given material from the waste stream and its processing so that it may be used again as a material for products which may or may not be similar to the original.</p> <p>Recyclable materials include paper products, glass, aluminium containers, plastics, metals, used oil, compostable garden waste, wood and bricks.</p>
Rent, leasing and hiring expenses	These expenses are the costs for rent, leasing (except finance leases) and hiring of vehicles, land, buildings, machinery, equipment and any other property to other businesses or individuals.
Rent, leasing and hiring income	This item includes income derived from the renting, leasing or hiring of assets such as land, buildings, or equipment to other businesses or individuals. It also includes revenue from operating leases, income from finance leases, and payments received under hire purchase arrangements.
Repair and maintenance expenses	This item includes costs associated with work undertaken on plant and machinery etc. to maintain normal business operations.
Sludge	This is waste in a physical state between solid and liquid.

Solid waste Comprises three categories:

Domestic and municipal

This is waste from domestic premises (i.e. household refuse, garden waste, disused furniture etc.) and council activities largely associated with servicing residential areas (i.e. street sweepings, street tree lopping, parks and gardens, and litter bins). Includes domestic, other domestic and other council waste.

Commercial, industrial, construction and demolition waste

This is putrescible/inert waste arising from institutional, commercial, industrial activities (non-hazardous) and waste arising from demolition and building activities, e.g. demolition rubble and building off-cuts.

Other solid waste

This waste includes cleanfill and waste not included elsewhere.

Total expenses (non-government units) The sum of all expense items.

Total expenses for waste management activities (general government only) For general government organisations this item includes only those expenses attributed to waste management activities. The item includes labour costs, payments to waste management councils/authorities, contract and subcontract expenses, fees for the treatment/disposal of waste, waste disposal levies, waste management licence fees, and other operating expenses for waste management activities.

Total expenses per person employed The sum of all expense items divided by the total number of persons employed.

Total income (non-government units) The sum of all income items.

Total income from waste management activities (general government only) For general government organisations this item includes only that income derived from waste management activities. Most local government income comes from rates levied on domestic and commercial properties, although this income is not included in this collection.

This income item includes income from the collection and transport of waste, the treatment/processing and/or disposal of waste, and the treatment/processing and/or sale of recyclables. This item also includes funding from specific purpose subsidies and grants from the Commonwealth Government and State Governments for waste management activities, and other income from waste management activities.

Total income per person employed The sum of all income items divided by the total number of persons employed.

Treatment/processing and/or disposal of waste Waste treatment/processing includes any physical transformation of materials necessary prior to their disposal at a landfill, incinerator etc.

Treatment/processing and/or sale of recyclables	Waste treatment/processing includes any physical transformation of materials in preparation for recycling or reuse. Often these materials must be cleaned, flattened, colour separated, crushed or baled to meet manufacturer specifications.
Wages and salaries	Gross earnings paid to all full-time and part-time employees before taxation and other deductions. It also includes payments to freelancers for whom PAYE tax is deducted, and retainers and commissions paid to persons who receive a retainer. Excludes payments to self-employed persons such as owner/drivers for whom PAYE is not deducted.
Waste	Wastes are all materials that are not wanted by the person or business whose activities produce them. Wastes include all materials that are intended for recycling, treatment or disposal without, or with only nominal, remuneration to the waste generator. See Liquid waste, Sludge and Solid waste.
Waste disposal levies/contributions paid to the Environment Protection Authority	In New South Wales, Victoria and South Australia, metropolitan landfill sites are required to pay a waste disposal levy/contribution to their respective State Environment Protection Authorities. These levies vary considerably between the States, but are generally based upon the weight of waste disposed of at a landfill.
Waste management consulting services	This is the revenue received from services for the provision of advice, training and/or expertise with respect to waste management.
Waste management licence fees	These expenses include fees for the operation of waste management facilities (e.g. landfill sites, transfer stations, liquid treatment plants). They also include fees for the transport of hazardous, special, listed or prescribed waste.
Workers' compensation costs	This is a compulsory insurance cover to be taken out by all employers, except self-insured workers, according to legislative schemes to cover employees suffering injury or disease in the course of or arising out of employment.

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