

WASTE MANAGEMENT SERVICES

AUSTRALIA

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C O N T E N T S

	<i>page</i>
Notes	2
Main features	3

TABLES

1 Summary of operations, Private and public trading sector	9
2 Businesses by waste management activity, Private and public trading sector	10
3 Sources of income, Private and public trading sector	11
4 Items of expenditure, Private and public trading sector	12
5 States and territories, Private and public trading sector	13
6 Summary of operations by employment size, Private and public trading sector	14
7 Selected ratios by employment size, Private and public trading sector ...	15
8 Landfill waste quantities by states and territories	15
9 Waste quantities other than landfill by states and territories, Private and public trading sector	16
10 States and territories, General government sector: Preliminary	17

ADDITIONAL INFORMATION

Explanatory Notes	18
Technical Note	24
Glossary	27

I N Q U I R I E S

- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Marie Apostolou on Melbourne (03) 9615 7465.

NOTES

INTRODUCTION

This publication presents final results from an Australian Bureau of Statistics (ABS) survey of employing private and public trading businesses involved in waste management services, and preliminary results for the waste management activities of the general government sector. The survey was conducted in respect of the 2002–03 financial year.

The 2002–03 Waste Management Services Survey is the second ABS survey on this topic, with the previous collection being conducted in respect of the 1996–97 financial year.

COMPARISONS WITH PREVIOUS SURVEY RESULTS

This survey has been designed to provide a measure of the financial and business structure of waste management services organisations operating in Australia. While comparisons are made between the 2002–03 and 1996–97 survey results the survey has not been designed to provide highly accurate estimates of change, so any comparisons made to the previous survey should be used with caution. For further information, see paragraphs 23–25 of the Explanatory Notes.

REVISIONS IN THIS ISSUE

The estimates for 1996–97 data presented in table 1 have been revised to exclude units primarily engaged in the collection and transport, treatment and processing of, or sale of recyclables as these units should be classified to other Australian and New Zealand Standard Industrial Classification (ANZSIC) classes. These units are not part of ANZSIC class 9634 – WASTE DISPOSAL SERVICES. For further information on the scope of this survey refer to paragraphs 3–4 of the Explanatory Notes.

ACKNOWLEDGMENT

The ABS acknowledges the valuable contribution of individuals, businesses, governments and other organisations including the various state and territory Environment Protection Authorities in providing the data for this publication.

MORE INFORMATION ON ABS SERVICE INDUSTRIES STATISTICS

Information about ABS activities in the field of service industries statistics is available from the Service Industries Statistics theme page on the ABS web site <<http://www.abs.gov.au>>. To access the theme page, select 'Themes' from the menu on the home page.

COMMENTS

The ABS welcomes comments and suggestions from users regarding future surveys of Service Industries. These comments should be addressed to the Director, Service Industries Business Statistics Centre, Australian Bureau of Statistics, GPO Box 2796Y, Melbourne, Vic. 3001.

ROUNDING

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

Susan Linacre
Acting Australian Statistician

MAIN FEATURES

INTRODUCTION

This publication presents results of the 2002–03 Waste Management Services Survey. This survey is conducted periodically by the ABS to provide a detailed measure of the performance and structure of organisations providing waste management services operating in Australia. The main focus of the survey is on understanding the nature of waste management activity, the composition of income generated, expenses incurred and the nature and volume of waste quantities.

The survey scope included employing businesses from the private and public trading sector in Australia that generated income predominantly from waste management services. Waste management services included the collection, transport and/or disposal of refuse (except through sewerage systems). The scope also included the waste management activities of the general government sector (mainly local government authorities).

Businesses that generated income predominantly from the collection and transport, treatment/processing or sale of recyclables were not in scope of this survey.

Tables 1–9 present final statistics on the waste management services provided by private and public trading sector businesses. Table 10 presents preliminary data on the waste management services provided by general government organisations. Final data for the general government sector will be available in August 2004.

SUMMARY OF FINDINGS

At the end of June 2003 there were 1,092 private and public trading businesses providing waste management services in Australia. These businesses had employment of 14,386 persons.

During 2002–03, income generated by these businesses was \$2,684.2m. Expenses incurred for the same period were \$2,458.2m.

The industry value added for these businesses was \$1,248.1m, contributing the equivalent of 0.2% to Australian Gross Domestic Product (GDP) for 2002–03.

The operating profit before tax was \$226.6m resulting in an operating profit margin of 8.5%.

Businesses providing waste management services were predominantly small employers, with 74.1% of all businesses having employment of 0–4 persons.

INCOME

During 2002–03 the 1,092 private and public trading sector waste management businesses generated \$2,684.2m in total income.

The collection and transport of waste was the major source of income generating \$1,595.4m (59.4%) in income, followed by the treatment/processing and/or disposal of waste \$534.1m (19.9%) and income from recyclables \$226.6m (8.4%).

Most (90.5%) of the income from the collection and transport of waste related to solid waste (\$1,444m). This mainly comprised: commercial, industrial, construction and demolition waste (\$999.1m) and domestic and municipal waste (\$435m).

Income from the collection and transport of liquid waste (including sludge) accounted for \$151.4m.

MAIN FEATURES *continued*

INCOME *continued*

Solid waste also accounted for 82.8% (\$442.5m) of the total income from the treatment/processing and/or disposal of waste. This income was mainly generated from commercial, industrial, construction and demolition waste (\$307.7m) and domestic and municipal waste (\$125.8m).

Liquid waste (including sludge) generated \$91.7m from this income source.

Hazardous waste comprised \$150.7m of the total income generated from solid waste (\$1,886.5m). The collection and transport of hazardous solid waste accounted for \$109.2m and the treatment/processing and/or disposal of solid waste accounted for \$41.5m.

EXPENDITURE

Expenditure by private and public trading sector waste management businesses for 2002–03 was \$2,458.2m. Labour costs were the highest single expense item at \$719.5m representing 29.3% of total expenditure. The average labour costs per employee were \$51,100.

Other key expenses were: fees paid for the treatment/processing and/or disposal of waste, \$304.6m (12.4%); contract and subcontract expenses for waste management services; \$269.8m (11%); depreciation and amortisation; \$216.9m (8.8%); and on-road motor vehicle running expenses, \$206.6m (8.4%).

EMPLOYMENT

At the end of June 2003, waste management services businesses within the private and public trading sector had employment of 14,386 persons.

This employment comprised 14,078 employees (97.9% of total employment) and 308 working proprietors and partners (2.1% of total employment). Most (88.1%) working proprietors/partners were found in businesses with 0–4 employment.

Waste management services businesses reported 948 owner drivers working on a contract basis.

SIZE OF BUSINESSES

Waste management services businesses were dominated by small employers: 74.1% had 4 or fewer persons employed; 19.1% had 5–9 persons; and, 5.5% had 20–99 persons. Only 1.3% of businesses had employment of 100 or more persons.

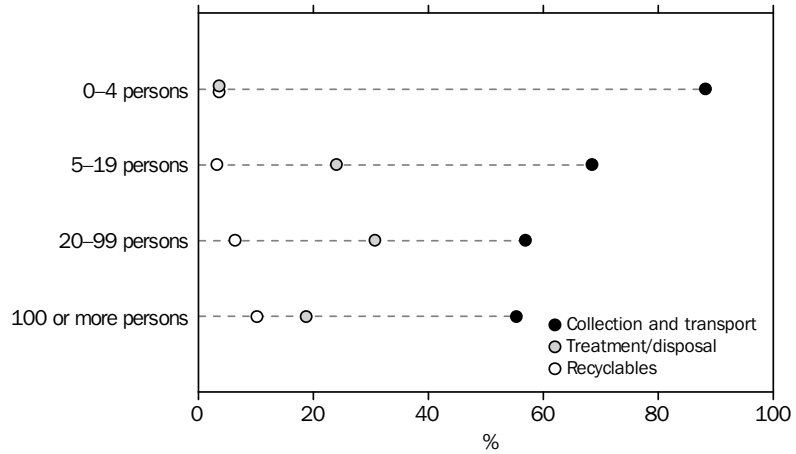
Income was highly correlated to business size with the larger businesses generating a greater share of the total income from all waste management services. Larger employers (those with 100 or more persons) generated the highest share of total income 68.6% (\$1,840.4m), averaging \$211,500 per person employed. Micro businesses (those with 0–4 persons) generated 7.1% (\$191m) of total income and had an average income of \$129,000 per person employed.

The following graph shows that the main source of income for all businesses regardless of size was from the collection and transport of waste. Micro businesses generated 88.3% of their total income from this source, those with 5–19 employment generated 68.6%, 20–99 employment generated 56.9% and larger businesses generated 55.4%.

MAIN FEATURES *continued*

SIZE OF BUSINESSES
continued

MAIN SOURCE OF INCOME AS A PROPORTION OF TOTAL INCOME, Private and public trading sector

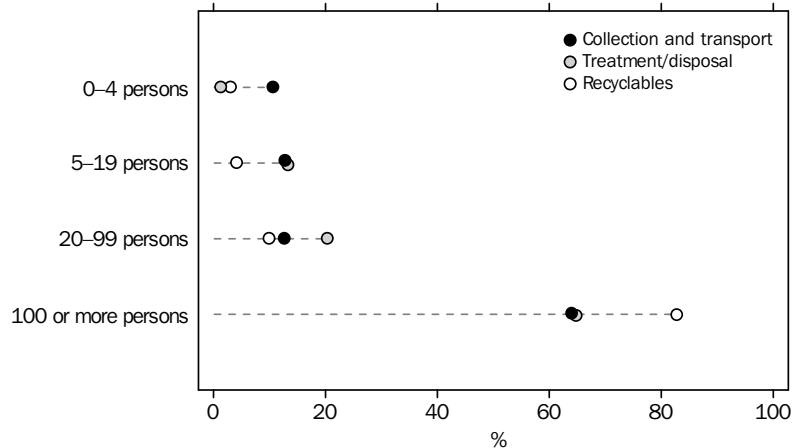


The graph below shows that larger businesses accounted for the majority share of total income for each of the three main sources of income (recyclables 82.8%, treatment/processing and/or disposal of waste 64.9% and collection and transport of waste 64%). There were 15 large businesses generating this income.

Businesses with employment size of 20-99 and 5-19 persons generated their largest share of total income from the treatment/processing and/or disposal of waste (20.4% and 13.4% respectively).

The largest share of total income for micro businesses came from the collection and transport of waste (10.6%).

SHARE OF TOTAL INCOME FOR SELECTED WASTE ACTIVITY, Private and public trading sector



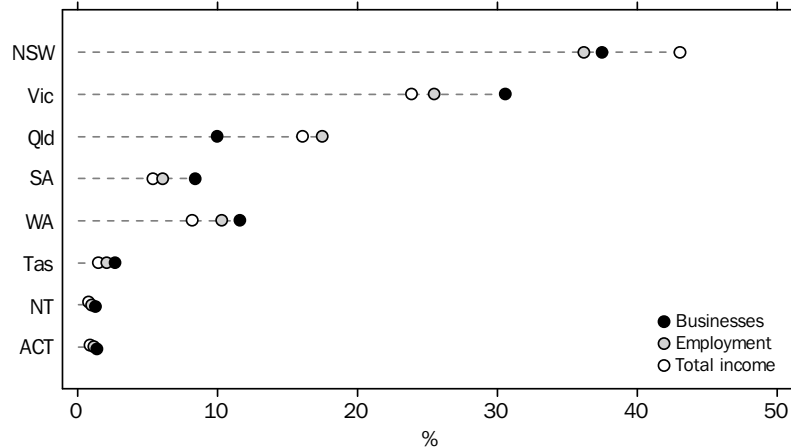
Profit margins varied by employment size ranging from 6.6% for businesses with 5-19 persons employed to 18.3% for micro businesses. Larger employers had a 7.5% profit margin. A contributing factor to the higher profit margin for micro businesses was the fact that many of these businesses were operated by sole proprietors and partners; the drawings of these persons were excluded from business expenses, and thus profit calculations.

MAIN FEATURES *continued*

STATES AND TERRITORIES

The following graph shows that New South Wales accounted for the highest share of total number of businesses (37.5%), employment (36.2%) and income (43.1%). Victoria had the second highest share of businesses (30.6%), employment (25.5%) and income (23.9%). Queensland had the third highest share of employment (17.5%) and income (16.1%), but had a lower share of the number of businesses than Western Australia (10% for Queensland and 11.6% for Western Australia).

KEY DATA ITEMS BY STATES AND TERRITORIES, Private and public trading sector



The main source of income across most states and territories was from the collection and transport of solid waste. The three largest states generated 82.1% of the total income (\$1,444m) for this activity: New South Wales \$565.1m, Victoria \$348.4m and Queensland \$272.1m.

HISTORICAL COMPARISONS

Comparisons with the results from 1996–97 are useful as an indication of the extent of change over time. However, the survey was not designed to provide highly accurate estimates of change, so any comparisons to results from the previous survey should be made with caution. Estimates of change can be subject to changes in scope, concepts, high levels of sampling error, or revisions. Further information can be found in paragraphs 23–25 in the Explanatory Notes.

Taking into consideration these limitations, the survey results suggest that waste management services businesses in the private and public trading sector experienced growth between 1996–97 and 2002–03.

Total income had an average growth rate of 11.1% per annum since 1996–97. Income from the collection and transport of waste grew at an average annual rate of 10.6%. Income from the treatment/processing and/or disposal of waste grew at 5.8% per annum.

Other income, which included recyclables, rent, leasing and hiring, activities related to renewable energies etc., experienced an annual growth rate of 20.9%. Part of this increase can be attributed to the diversification of business activities undertaken by waste management businesses, particularly non-waste management activity.

The average annual percentage change for employment was 7.9%. Employment rose from 9,107 persons at the end of June 1997 to 14,386 persons at the end of June 2003.

MAIN FEATURES *continued*

HISTORICAL COMPARISONS *continued*

Wages and salaries and contract/subcontract expenses for waste management services increased by 12% and 12.1% per annum, respectively.

The number of waste management services businesses in the private and public trading sector increased from 894 at the end of June 1997 to 1,092 at the end of June 2003, an average annual percentage change of 3.4%.

WASTE QUANTITIES *Quantities of solid waste received at landfills*

For the first time this survey used administrative by-product data from state and territory government departments and Environment Protection Authorities (EPAs) for quantities of waste received and disposed of at landfills.

The information below relates to waste received at landfills from households and businesses across the economy, not just businesses in the private and public trading sector undertaking waste management services.

Caution should be exercised in making any comparisons across states and territories as the data published are not strictly comparable due to the variation in state/territory legislation, scope, concepts and definitions. Refer to the Technical Note on page 24 for an explanation of the data for each state and territory.

During 2002–03, 5.2 million tonnes of waste was received and disposed of at landfills in New South Wales. Commercial, industrial, construction and demolition waste comprised 68.2% of the total, while 31.8% was from domestic and municipal waste.

Victoria reported 5.5 million tonnes of waste at landfills during 2002–03. Commercial, industrial, construction and demolition waste comprised 51% of the total waste, while domestic and municipal waste accounted for 39%. Other waste which only included 'Prescribed waste' comprised 10% of the total.

Domestic and municipal waste accounted for 39.4% of the total waste (2.8 million tonnes) in Queensland, while commercial, industrial, construction and demolition waste comprised 25.6%. Other waste, which comprised Cover material and Regulated waste, accounted for 35% of the total.

Western Australia received and disposed of 2.7 million tonnes of waste. Commercial, industrial, construction and demolition waste was the main waste stream accounting for 72.5% of the total. Domestic and municipal waste accounted for 27.5% of the total.

South Australia received and disposed of 1.3 million tonnes of waste at landfills.

The Australian Capital Territory reported 207,000 tonnes of waste. This comprised 60.4% of commercial, industrial, construction and demolition waste and 39.6% of domestic and municipal waste.

Quantities of waste received at facilities other than landfills

The following information relates to waste quantities received at other facilities by waste management services businesses in the private and public trading sector only. It excludes data for landfills, transfer stations or sewage treatment plants.

Quantities of waste received at liquid treatment plants (excluding sewage plants) operated by waste management businesses ranged from 263,600 tonnes in New South Wales to 166,900 tonnes in Victoria.

MAIN FEATURES *continued*

Quantities of waste received at facilities other than landfills continued

Quantities of waste received for disposal at facilities (other than liquid or sewage treatment plants, transfer stations, and landfills) was fairly similar across New South Wales (41,500 tonnes) and Victoria (41,300 tonnes). Queensland reported 24,500 tonnes.

GENERAL GOVERNMENT SECTOR

The following information only relates to organisations in the general government sector undertaking solid waste management service related activities.

At the end of June 2003, there were 607 general government organisations with employment of 4,381 persons undertaking waste management related activities.

The general government sector generated \$181.3m in income from the treatment/processing and/or disposal of waste and \$61.1m from the collection and transport of waste during 2002–03.

During 2002–03, expenditure by these organisations was \$1,244.3m. The major expense items were: contract and subcontract expenses \$669.7m (53.8%), wages and salaries \$177.8m (14.3%) and fees for the treatment/disposal of waste \$154.9m (12.4%).

New South Wales (37.7%) accounted for the highest share of total employment related to solid waste management activity, followed by Queensland (20.7%), Victoria (16.1%) and Western Australia (15.4%).

SUMMARY OF OPERATIONS, Private and public trading sector(a)

		1996-97	2002-03	Average annual percentage change 1996-97 to 2002-03
Businesses at end June	no.	r894	1 092	3.4
Employment at end June	no.	r9 107	14 386	7.9
Income				
Collection and transport of waste	\$m	r871.1	1 595.4	10.6
Treatment/processing and/or disposal of waste	\$m	r379.8	534.1	5.8
Other	\$m	r177.8	554.7	20.9
<i>Total</i>	\$m	r1 428.7	2 684.2	11.1
Expenses				
Wages and salaries	\$m	r309.9	611.5	12.0
Contract and subcontract expenses for waste management services	\$m	r135.7	269.8	12.1
Fees for the treatment/disposal of waste	\$m	r164.6	304.6	10.8
Other	\$m	r680.7	1 272.4	11.0
<i>Total</i>	\$m	r1 291.0	2 458.2	11.3
Operating profit before tax	\$m	r137.7	226.6	8.7
Operating profit margin	%	r9.7	8.5	. .
Industry value added	\$m	r686.7	1 248.1	10.5
Owner/drivers at end June(b)	no.	r565	948	9.0

. . not applicable

r revised

(a) Caution should be exercised when making comparisons across time. For more information refer to Explanatory Notes paragraphs 23-25.

(b) Owner/drivers working on a contract basis for waste management services businesses during the last pay period ending in June 2003, who were not employees of those businesses.

BUSINESSES BY WASTE MANAGEMENT ACTIVITY, Private and public trading sector(a)

BUSINESSES AT END JUNE(b)

	<u>1996-97</u>		<u>2002-03</u>	
	no.	%	no.	%
Collection and transport of waste	r823	r92.1	1 043	95.5
Collection and transport of recyclables	r119	r13.3	^ 172	15.8
Ownership of transfer stations and/or materials recovery facilities	r ^ 30	r3.4	^ 64	5.9
Operation of transfer stations and/or materials recovery facilities	r ^ 55	r6.2	^ 77	7.1
Ownership of landfills	r ^ 35	r3.9	^ 26	2.4
Operation of landfills	r81	r9.1	^ 49	4.5
Operation of green waste recycling facilities	na	na	27	2.5
Ownership of liquid treatment plants	r ^ 23	r2.6	*31	2.9
Operation of liquid treatment plants	r ^ 26	r2.9	*31	2.8
Other	r ^ 23	r2.6	21	2.0
Total	r894	r100.0	1 092	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

na not available

r revised

(a) Caution should be exercised when making comparisons across time. For more information refer to Explanatory Notes paragraphs 23-25.

(b) As businesses may have been involved in more than one type of activity, the counts of businesses for each activity type do not sum to the total.

SOURCES OF INCOME, Private and public trading sector

	<i>Businesses at end June(a)</i>	<i>Income</i>	<i>Proportion of total income</i>
	no.	\$m	%
Collection and transport of waste			
Solid waste			
Domestic and municipal	551	435.0	16.2
Commercial, industrial, construction and demolition	629	999.1	37.2
Other	^ 32	9.9	0.4
<i>Total</i>	<i>942</i>	<i>1 444.0</i>	<i>53.8</i>
Liquid waste (including sludge)	^ 149	151.4	5.6
<i>Total</i>	<i>1 034</i>	<i>1 595.4</i>	<i>59.4</i>
Treatment/processing and/or disposal of waste			
Solid waste			
Domestic and municipal	^ 76	125.8	4.7
Commercial, industrial, construction and demolition	^ 69	307.7	11.5
Other	14	8.9	0.3
<i>Total</i>	<i>^ 111</i>	<i>442.5</i>	<i>16.5</i>
Liquid waste (including sludge)	^ 45	91.7	3.4
<i>Total</i>	<i>^ 143</i>	<i>534.1</i>	<i>19.9</i>
Recyclables			
Collection and transport(b)	^ 134	132.5	4.9
Treatment/processing(b)	22	53.9	2.0
Sales of green waste/organic material	*31	11.5	0.4
Sales of other recyclables	^ 98	28.7	1.1
<i>Total</i>	<i>^ 231</i>	<i>226.6</i>	<i>8.4</i>
Activities related to renewable energy(c)	8	0.7	—
Rent, leasing and hiring income	^ 82	^ 13.8	0.5
Interest income	^ 322	8.7	0.3
Other	^ 295	304.9	11.4
Total	1 092	2 684.2	100.0
Income from hazardous solid waste(d)			
Collection and transport of waste	^ 118	^ 109.2	4.1
Treatment/processing and/or disposal of waste	25	41.5	1.5

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) As businesses may have had more than one source of income, the counts of businesses for each income source do not sum to the total.

(b) Included green waste/organic material.

(c) Included sales of landfill gas, sales of electricity generated from landfill gas and sales of waste for use in power generation schemes.

(d) These data represent the amount of total solid waste that was hazardous.

ITEMS OF EXPENDITURE, Private and public trading sector

	<i>Businesses at end June (a)</i>	<i>Expenditure</i>	<i>Proportion of total expenses</i>
	no.	\$m	%
Labour costs			
Wages and salaries	963	611.5	24.9
Employer contributions to superannuation funds(b)	924	47.6	1.9
Workers' compensation costs	784	26.9	1.1
Fringe benefits tax	^ 74	5.9	0.2
Payroll tax	^ 161	27.7	1.1
<i>Total</i>	<i>1 013</i>	<i>719.5</i>	<i>29.3</i>
Contract and subcontract expenses for waste management services			
Collection and transport of waste	^ 279	165.8	6.7
Collection and transport of recyclables (including green waste)	^ 25	5.9	0.2
Treatment/processing and/or disposal of waste	^ 29	73.9	3.0
Treatment/processing of recyclables (including green waste)	^ 26	12.7	0.5
Other	21	11.4	0.5
<i>Total</i>	<i>^ 308</i>	<i>269.8</i>	<i>11.0</i>
Fees for the treatment/processing and/or disposal of waste	614	304.6	12.4
Waste disposal levies/contributions paid directly to the EPA	^ 159	77.9	3.2
Waste management licence fees	^ 216	4.1	0.2
Repair and maintenance expenses	676	85.3	3.5
On-road motor vehicle running expenses	1 017	206.6	8.4
Payments to employment agencies for staff	^ 61	33.0	1.3
Rent, leasing and hiring expenses	628	99.2	4.0
Purchases of goods and materials(c)	570	138.9	5.6
Depreciation and amortisation	645	216.9	8.8
Insurance premiums	972	25.5	1.0
Interest expenses	671	43.9	1.8
Bad and doubtful debts	^ 314	4.0	0.2
Other	728	229.1	9.3
Total	1 092	2 458.2	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) As businesses may have had more than one type of expenditure, the counts of businesses for each item of expenditure do not sum to the total.

(b) Included salary sacrifice that was paid as employer contributions to superannuation funds. Other salary sacrifice was included with the relevant expense item.

(c) Excluded capitalised purchases of goods and materials.

		New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
Businesses at end June(a)	no.	409	335	^ 110	91	127	^ 30	14	15	1 092
	%	37.5	30.6	10.0	8.4	11.6	2.7	1.3	1.4	100.0
Employment at end June	no.	5 205	3 673	2 524	877	1 485	307	144	172	14 386
	%	36.2	25.5	17.5	6.1	10.3	2.1	1.0	1.2	100.0
Income										
Collection and transport of solid waste	\$m	565.1	348.4	272.1	92.3	120.1	21.5	12.9	11.5	1 444.0
	%	39.1	24.1	18.8	6.4	8.3	1.5	0.9	0.8	100.0
Collection and transport of liquid waste	\$m	45.7	36.9	^ 37.0	14.6	*10.9	np	np	np	151.4
	%	30.2	24.4	24.5	9.6	7.2	np	np	np	100.0
Treatment/processing and/or disposal of solid waste	\$m	324.1	53.7	30.8	9.2	^ 22.0	*0.9	np	np	442.5
	%	73.3	12.1	7.0	2.1	5.0	0.2	np	np	100.0
Treatment/processing and/or disposal of liquid waste	\$m	29.2	^ 32.0	^ 15.4	np	np	np	np	np	91.7
	%	31.8	35.0	16.7	np	np	np	np	np	100.0
Recyclables	\$m	112.0	54.2	23.7	9.2	12.9	np	np	np	226.6
	%	49.4	23.9	10.5	4.1	5.7	np	np	np	100.0
Other	\$m	81.4	116.0	^ 52.5	np	np	np	np	np	328.1
	%	24.8	35.4	16.0	np	np	np	np	np	100.0
Total	\$m	1 157.5	641.3	431.6	146.2	219.1	41.5	22.2	24.1	2 684.2
	%	43.1	23.9	16.1	5.4	8.2	1.5	0.8	0.9	100.0
Selected expenses										
Wages and salaries	\$m	240.8	147.2	110.6	33.6	57.2	10.0	6.3	5.8	611.5
	%	39.4	24.1	18.1	5.5	9.4	1.6	1.0	0.9	100.0
Contract and subcontract expenses for waste management	\$m	134.5	69.9	28.4	14.3	15.9	4.9	np	np	269.8
	%	49.9	25.9	10.5	5.3	5.9	1.8	np	np	100.0
Fees for the treatment/disposal of waste	\$m	135.2	68.9	51.1	18.6	22.2	5.1	np	np	304.6
	%	44.4	22.6	16.8	6.1	7.3	1.7	np	np	100.0
Waste disposal levies/contributions paid directly to the EPA	\$m	70.8	4.6	np	1.0	np	np	np	np	77.9
	%	90.8	5.9	np	1.3	np	np	np	np	100.0
Waste management licence fees	\$m	*0.7	2.4	np	^ 0.4	np	np	np	np	4.1
	%	17.6	59.4	np	9.9	np	np	np	np	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) As businesses may have operated in more than one state, the counts of businesses for each state do not sum to the total for Australia.

SUMMARY OF OPERATIONS BY EMPLOYMENT SIZE, Private and public trading sector

		0-4 persons	5-19 persons	20-99 persons	100 or more persons	Total
Businesses at end June	no.	809	209	60	15	1 092
	%	74.1	19.1	5.5	1.3	100.0
Employment at end June						
Working proprietors and partners	no.	^ 271	^ 31	^ 5	—	^ 308
	%	88.1	10.2	1.8	—	100.0
Employees	no.	1 210	1 963	2 204	8 702	14 078
	%	8.6	13.9	15.7	61.8	100.0
Total	no.	1 481	1 994	2 210	8 702	14 386
	%	10.3	13.9	15.4	60.5	100.0
Income						
Collection and transport of waste	\$m	168.6	204.5	202.0	1 020.2	1 595.4
	%	10.6	12.8	12.7	64.0	100.0
Treatment/processing and/or disposal of waste	\$m	*6.8	71.7	109.0	346.7	534.1
	%	1.3	13.4	20.4	64.9	100.0
Recyclables	\$m	^ 7.0	9.5	22.6	187.6	226.6
	%	3.1	4.2	10.0	82.8	100.0
Other	\$m	*8.7	^ 12.4	21.1	285.8	328.1
	%	2.6	3.8	6.4	87.1	100.0
Total	\$m	191.0	298.1	354.7	1 840.4	2 684.2
	%	7.1	11.1	13.2	68.6	100.0
Expenses						
Labour costs	\$m	41.4	81.4	103.5	493.3	719.5
	%	5.8	11.3	14.4	68.6	100.0
Contract expenses for waste management services	\$m	*8.4	26.6	24.0	210.8	269.8
	%	3.1	9.9	8.9	78.1	100.0
Other	\$m	106.7	170.5	190.4	1 001.3	1 468.9
	%	7.3	11.6	13.0	68.2	100.0
Total	\$m	156.5	278.5	317.9	1 705.3	2 458.2
	%	6.4	11.3	12.9	69.4	100.0
Operating profit before tax	\$m	^ 34.4	^ 19.6	36.6	136.0	226.6
	%	15.2	8.6	16.2	60.0	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

7

SELECTED RATIOS BY EMPLOYMENT SIZE, Private and public trading sector

		0-4 persons	5-19 persons	20-99 persons	100 or more persons	Total
Total income per person employed	\$m	129.0	149.5	160.5	211.5	186.6
Operating profit margin	%	^ 18.3	^ 6.6	10.5	7.5	8.5
Operating profit before tax per person employed	\$'000	^ 23.2	^ 9.8	16.6	15.6	15.8
Labour costs per employee	\$'000	34.3	41.5	46.9	56.7	51.1
Labour costs to total expenses	%	26.5	29.2	32.5	28.9	29.3
Payments to contractors/subcontractors for waste management services to total expenses	%	*5.3	9.6	7.6	12.4	11.0
Income from the collection and transport of waste to total income	%	88.3	68.6	57.0	55.4	59.4
Income from the treatment/processing and/or disposal of waste to total income	%	*3.5	24.1	30.7	18.8	19.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

8

SOLID LANDFILL WASTE QUANTITIES BY STATES AND TERRITORIES (a)

	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory
	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t
Domestic and municipal	1 657	2 132	1 108	na	741	na	na	82
Commercial, industrial, construction and demolition								
Commercial and industrial	2 358	na	522	na	420	na	na	98
Construction and demolition	1 193	na	200	na	1 535	na	na	27
Total	3 551	2 790	722	na	1 955	na	na	125
Other	—	545	986	na	—	na	na	—
Total(b)	5 208	5 467	2 815	1 252	2 696	na	na	207

— nil or rounded to zero (including null cells)

na not available

(a) Data as reported by state and territory government departments and Environment Protection Authorities across all industries. Refer to the Technical Note on page 24 for an explanation of what the data represent.

(b) Caution should be exercised when making state comparisons due to scope differences across states and territories. Refer to the Technical Note on page 24 for further information.

WASTE QUANTITIES OTHER THAN LANDFILL, Private and public trading sector

	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>South Australia</i>	<i>Western Australia</i>	<i>Tasmania</i>	<i>Northern Territory</i>	<i>Australian Capital Territory</i>	<i>Australia</i>
	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t	'000 t
Received at liquid treatment plants operated by waste management businesses(a)	^ 263.6	166.9	172.3	np	np	np	np	np	698.1
Received for disposal at other facilities by waste management businesses(b)	41.5	41.3	24.5	np	np	np	np	np	123.5

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Excluded waste received at sewage treatment plants, landfills and transfer stations.

(b) Excluded waste not handled by waste management services businesses and waste disposed of at landfills.

		New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
Organisations undertaking waste management activities at end June	no.	169	78	125	66	132	29	7	1	607
	%	27.8	12.9	20.6	10.9	21.7	4.8	1.2	0.2	100.0
Employment at end June	no.	1 651	707	909	293	673	119	13	16	4 381
	%	37.7	16.1	20.7	6.7	15.4	2.7	0.3	0.4	100.0
Selected income from waste management activities										
Collection and transport of waste	\$m	^ 22.0	11.4	^ 3.9	^ np	*18.8	np	np	—	^ 61.1
	%	36.0	18.6	6.4	np	30.8	np	np	—	100.0
Treatment/processing and/or disposal of waste	\$m	62.1	34.5	34.6	np	16.9	np	np	5.4	181.3
	%	34.2	19.0	19.1	np	9.3	np	np	3.0	100.0
Conditional grants from government	\$m	5.6	3.1	^ 1.2	0.6	^ 2.1	np	np	—	13.1
	%	42.7	23.7	9.3	4.8	16.0	np	np	—	100.0
Other income from waste management activities	\$m	^ 9.0	4.9	8.0	0.5	^ 6.6	np	np	—	29.4
	%	30.5	16.6	27.2	1.7	22.5	np	np	—	100.0
Expenses for waste management activities										
Wages and salaries	\$m	84.1	29.0	29.8	8.6	^ 20.3	4.4	0.4	1.3	177.8
	%	47.3	16.3	16.7	4.8	11.4	2.5	—	0.7	100.0
Contract and subcontract expenses for waste management activities										
Collection and transport of waste	\$m	101.4	67.7	59.6	24.3	33.7	7.4	2.1	3.9	300.0
	%	33.8	22.6	19.9	8.1	11.2	2.5	0.7	1.3	100.0
Collection and transport of recyclables (including green waste)	\$m	83.6	49.0	20.2	11.0	14.4	2.8	0.4	3.3	184.7
	%	45.2	26.5	11.0	6.0	7.8	1.5	0.2	1.8	100.0
Treatment/processing and/or disposal of waste	\$m	21.7	23.0	40.6	10.3	*11.2	^ 3.5	1.5	2.2	114.1
	%	19.1	20.2	35.6	9.0	9.8	3.1	1.3	1.9	100.0
Treatment/processing of recyclables (including green waste)	\$m	12.9	13.4	9.2	3.4	8.4	np	np	1.7	49.9
	%	25.9	26.8	18.5	6.8	16.9	np	np	3.3	100.0
Other	\$m	5.0	3.0	7.4	^ 1.0	*3.0	np	np	—	20.9
	%	23.8	14.4	35.3	4.9	14.3	np	np	—	100.0
Total	\$m	224.6	156.1	137.0	50.0	70.8	15.3	4.9	11.0	669.7
	%	33.5	23.3	20.5	7.5	10.6	2.3	0.7	1.6	100.0
Fees for the treatment/processing and/or disposal of waste	\$m	93.6	27.6	^ 8.6	3.3	16.0	np	np	—	154.9
	%	60.4	17.8	5.6	2.2	10.3	np	np	—	100.0
Waste disposal levies/contributions paid directly to the EPA	\$m	15.2	5.7	0.2	3.7	0.9	np	np	—	25.9
	%	58.8	22.0	0.8	14.4	3.6	np	np	—	100.0
Other	\$m	89.5	30.0	57.3	^ 11.6	21.7	np	np	—	216.1
	%	41.4	13.9	26.5	5.4	10.0	np	np	—	100.0
Total	\$m	507.0	248.4	232.9	77.3	129.7	27.8	9.1	12.3	1 244.3
	%	40.7	20.0	18.7	6.2	10.4	2.2	0.7	1.0	100.0
Net capital expenditure on solid waste management(a)	\$m	18.2	6.6	15.3	^ 0.9	7.4	np	np	—	50.2
	%	36.3	13.2	30.4	1.8	14.7	np	np	—	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Comprised acquisitions less disposals for plant, machinery, equipment and land used for solid waste management activities.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents results from a survey of waste management services organisations for the reference year 2002–03. This is the second ABS survey on this topic, with the previous collection being conducted in respect of the 1996–97 reference period.

2 Results for the general government sector are preliminary only. Final results for this sector will be available in August 2004. Inquiries about these final results should be made by telephoning the contact person listed on the front page.

SCOPE

3 The scope of the survey was all employing private and public trading sector businesses on the ABS Business Register, classified to class 9634 — WASTE DISPOSAL SERVICES — of the Australian and New Zealand Standard Industrial Classification (ANZSIC). ANZSIC class 9634 consists of businesses mainly engaged in the collection and/or disposal of refuse (except through sewerage systems).

4 The scope was also expanded to include the waste specific management activities of the general government sector. General government organisations included all local government authorities (excluding aboriginal councils) and the Australian Capital Territory's Department of Urban Services.

STATISTICAL UNITS DEFINED ON THE ABS REGISTER

Private and public trading sector

5 For the private and public trading sector the ABS uses an economics statistics model on the ABS Business Register to describe the characteristics of businesses, and the structural relationships between related businesses. The units model is also used to break groups of related businesses into relatively homogeneous components that can provide data to the ABS.

6 In mid-2002, to better use the information available as a result of The New Tax System (TNTS), the ABS changed its economic statistics units model. The new units model allocates businesses to one of two sub-populations. The vast majority of businesses are in what is called the Australian Taxation Office (ATO) Maintained Population, while the remaining businesses are in the ABS Maintained Population. Together, these two sub-populations make up the ABS Business Register population.

ATO Maintained Population

7 Most businesses and organisations in Australia need to obtain an Australian Business Number (ABN), and are then included on the ATO Australian Business Register. Most of these businesses have simple structures, therefore the unit registered for an ABN will satisfy ABS statistical requirements. For these businesses, the ABS is aligning its statistical units structure with the ABN unit. The businesses with simple structures constitute the ATO Maintained Population, and the ABN unit will be used as the economic statistics unit for all economic collections.

ABS Maintained Population

8 For the population of businesses where the ABN unit is not suitable for ABS statistical requirements, the ABS will maintain its own units structure through direct contact with the business. These businesses constitute the ABS Maintained Population. This population consists mainly of large, complex and diverse businesses. The new statistical units model described below has been introduced to cover such businesses:

- *Enterprise Group*: This is a unit covering all the operations in Australia of one or more legal entities under common ownership and/or control. It covers all the operations in Australia of legal entities which are related in terms of the current Corporations Law (as amended by the *Corporations Legislation Amendment Act 1991*), including legal entities such as companies, trusts, and partnerships. Majority ownership is not required for control to be exercised.
- *Enterprise*: The enterprise is an institutional unit comprising (i) a single legal entity or business entity, or (ii) more than one legal entity or business entity within the same Enterprise Group and in the same institutional sub-sector (i.e. they are all classified to a single Standard Institutional Sector Classification of Australia sub-sector).

EXPLANATORY NOTES *continued*

ABS Maintained Population
continued

- *Type of Activity Unit (TAU)*: The TAU is comprised of one or more business entities, sub-entities or branches of a business entity within an Enterprise Group that can report production and employment data for similar activities. When a minimum set of data items are available, a TAU will be created which covers all the operations within an industry subdivision (and the TAU will be classified to the relevant subdivision of the ANZSIC). Where a business cannot supply adequate data for each industry, a TAU will be formed which contains activity in more than one industry subdivision.

9 For more information on the impacts of the introduction of the new economic statistics units model, refer to *Information Paper: Improvements in ABS Economic Statistics [Arising from The New Tax System]* (cat. no. 1372.0).

10 Prior to the 2002–03 cycle, the Waste Management Services Survey used the management unit as the statistical unit for the private and public trading sector. For issues of this publication relating to 2002–03 onwards, the statistical unit in the Waste Management Services Survey is the ABN unit for businesses with simple structures, and the TAU for businesses with complex structures. In most cases, ABN/TAU units concord with the management units used in the 1996–97 cycle.

COVERAGE

*Private and public trading
sector*

11 The frame used for private and public trading sector businesses in the Waste Management Services Survey, like most ABS economic surveys, was taken from the ABS Business Register. The ABS Business Register is primarily based on registrations to the Australian Taxation Office's Pay As You Go Withholding (PAYGW) scheme (and prior to 1 July 2000, the Group Employer (GE) scheme). The frame is updated quarterly to take account of new businesses which have ceased employing.

12 Businesses which have ceased employing are identified when the Australian Taxation Office cancels their PAYGW registration (or previously their GE registration). In addition, from July 1999 to the end of June 2000, businesses which did not remit under the GE scheme for the previous five quarters were removed from the frame. A similar process has recently been adopted to remove businesses which do not remit under the PAYGW scheme.

13 The introduction of The New Tax System has a number of significant implications for ABS business statistics, and these are discussed in: *Information Paper: ABS Statistics and The New Tax System* (cat. no. 1358.0) and *Information Paper: Improvements in ABS Economic Statistics [Arising from The New Tax System]* (cat. no. 1372.0).

IMPROVEMENTS TO COVERAGE

14 Data in this publication have been adjusted to allow for lags in processing new businesses to the ABS Business Register, and the omission of some businesses from the register. The majority of businesses affected, and to which the adjustments apply, are small in size.

15 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 ABS Business Register. Adjustments of this type will continue to be applied in future periods.

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

General government sector

17 The population used for organisations undertaking waste management related services was a listing of all local government authorities excluding Aboriginal and Island Councils and Community Government Councils.

EXPLANATORY NOTES *continued*

COMPARISON WITH OTHER ABS STATISTICS *Australian Industry*

18 Annual data for the waste management services industry will be published in *Australian Industry* (cat. no. 8155.0). There are important differences between the statistics published in the *Australian Industry* and *Waste Management Services* publications and users should exercise caution when making comparisons between the two sets of estimates.

19 The *Australian Industry* publication presents annual summary statistics at the ANZSIC class level. It shows the relative performance of each industry class, and allows patterns of change or growth to be analysed across particular segments of the Australian economy. The industry estimates presented in *Australian Industry* are used in the compilation of the National Accounts, and in the derivation of economy-wide indicators such as gross domestic product (GDP).

20 The *Waste Management Services* publication supplements the annual industry summary statistics with a detailed examination of the structure and performance of businesses involved in waste management services for the reference year of the survey.

21 One reason the two sets of estimates are different relates to the use of different industry coding practices. For the *Australian Industry* publication, businesses are coded to ANZSIC industry classes on the basis of the activity reported to the ATO when they registered for an ABN, or for more complex businesses, information reported directly to the ABS (see paragraphs 5–10). On the other hand, *Waste Management Services* presents estimates for industry classes based on detailed financial data reported in the survey. Approximately 25% of businesses in the Waste Management Survey, which were originally coded to ANZSIC Class 9634, were found to have predominant activity outside the scope of the collection (see paragraph 3), and have consequently been excluded from the results presented in this publication.

22 Differences in results also occurred because of differences in the scope of the two surveys. Firstly, non-employed units were included in the scope of *Australian Industry*, but generally excluded from *Waste Management Services*. Secondly, general government organisations were excluded from the scope of *Australian Industry*, but included in *Waste Management Services*.

HISTORICAL COMPARISONS

23 While comparisons are made between 2002–03 survey results and the earlier iteration of the Waste Management Services Survey, the reader should bear in mind that the survey has not been designed to support accurate estimates of change, and should exercise caution when comparing 2002–03 results to 1996–97 *Waste Management Services* results.

24 Revisions were made to the 1996–97 historical data to exclude units primarily engaged in the collection and transport, treatment and processing of, or sale of recyclables as these units should not have been in scope of ANZSIC class 9634.

25 The scope for the general government sector during 2002–03 excluded Aboriginal and Island Councils and Community Government Councils, whereas these units were in scope of the 1996–97 survey.

RELIABILITY OF THE DATA

26 When interpreting the results of a survey it is important to take into account factors that may affect the reliability of estimates. Such factors can be classified as either sampling or non-sampling error.

27 The estimates are based on information obtained from a randomly selected stratified sample of waste management services businesses in the Australian business population. Consequently, the estimates in this publication are subject to sampling variability, that is, they may differ from the figures that would have been obtained if all units had been included in the survey, that is if a census was conducted. One measure of the likely difference is given by the standard error (SE), which indicates the extent to

EXPLANATORY NOTES *continued*

RELIABILITY OF THE DATA *continued*

which an estimate might have varied by chance because only a sample of units was included.

28 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 was conducted and approximately 19 chances in 20 that the difference will be less than two SEs.

29 Sampling variability can also 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 sampling error in percentage terms, and this avoids the need to refer also to the size of the estimate.

30 The following table contains estimates of RSEs for a selection of the statistics presented in this publication.

RELATIVE STANDARD ERRORS FOR TABLE 1 SUMMARY OF OPERATIONS

	PRIVATE AND PUBLIC TRADING SECTOR
	2002-03
	%
Businesses at end June	5.0
Employment at end June	1.4
Income	
Collection and transport of waste	1.4
Treatment/processing and/or disposal of waste	1.6
Other	2.0
<i>Total</i>	1.1
Expenses	
Wages and salaries	1.1
Contract and subcontract expenses for waste management services	1.4
Fees for the treatment/disposal of waste	2.2
Other	1.1
<i>Total</i>	1.1
Operating profit before tax	3.6
Operating profit margin	3.2
Industry value added	1.1
Owner/drivers at end June	6.0

31 As an example of the above, an estimate of total income for private and public trading sector businesses in 2002-03 was \$2,684.2m and the RSE was estimated to be 1.1%, giving a SE of approximately \$29.5m. Therefore, there would be two chances in three that, if all units had been included in the survey, a figure in the range of \$2,654.7m to \$2,713.7m 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 \$2,625.2m to \$2,743.2m.

32 The sampling variability for final estimates at the state/territory level was higher than for Australian level aggregates. Within states/territories, the sampling variability, and therefore the RSEs of estimates for smaller states and territories are generally higher than for the larger states. Survey estimates for the smaller states and territories should

EXPLANATORY NOTES *continued*

RELIABILITY OF THE DATA

continued

therefore be viewed with more caution than those for other states. RSEs for New South Wales and Victoria are typically 1 to 2 times greater than the corresponding national figure for employment and financial estimates, and 1.6 to 2 times higher for estimates of numbers of organisations. RSEs in the other states and territories are up to 5 times greater than the corresponding national figure for employment and financial estimates, and up to 4.2 times higher for estimates of numbers of organisations (the wide range of values is a result of the different market shares of small and large businesses in each state/territory).

33 Errors other than those due to sampling may occur in any type of collection and are referred to as non-sampling error. For this survey, non-sampling error may result from such things as deficiencies in the register of businesses from which the sample was drawn, non-response, imperfections in reporting and/or errors made in compiling results. The extent to which non-sampling error affects the results of the survey is not precisely quantifiable. Every effort was made to minimise non-sampling error by careful design and testing of the questionnaire, efficient operating procedures and systems and the use of appropriate methodology. Survey estimates subject to a high level of non-sampling error have been suppressed or provided with relevant cautions.

34 Estimates that have an estimated relative standard error between 10% and 25% are annotated with the symbol '^'. These estimates should be used with caution as they are subject to sampling variability too high for some purposes. Estimates with an RSE between 25% and 50% are annotated with the symbol '*', indicating that the estimate should be used with caution as it is subject to sampling variability too high for most practical purposes. Estimates with an RSE greater than 50% are annotated with the symbol '**' indicating that the sampling variability causes the estimates to be considered too unreliable for general use.

35 Where figures have been rounded, discrepancies may occur between the sum of the components and the total. Similar discrepancies may occur between a proportion or ratio, and the ratio of the separate components.

REFERENCE PERIOD

36 Data contained in the tables in this publication for the private and public trading sector relate to employing businesses providing waste management services in Australia during the year ended June 2003. Financial estimates included the activity of any business that ceased or commenced operations during the year. Counts of businesses included only those that were operating at 30 June 2003. Employment estimates included only those persons working for a waste management services business during the last pay period ending in June 2003.

37 For the general government sector counts of organisations included all organisations that incurred waste management expenses and were operating at 30 June 2003. Employment estimates included only those persons working specifically on solid waste management services during the last pay period ending in June 2003.

ACKNOWLEDGMENT

38 ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

39 The ABS acknowledges the valuable contribution of the various state and territory government departments and Environment Protection Authorities in providing the waste quantities data to landfills presented in this publication.

DATA AVAILABLE ON REQUEST

40 Inquiries about these statistics and more detailed statistics than those presented in this publication should be made by telephoning the contact person listed on the front page.

EXPLANATORY NOTES *continued*

ABBREVIATIONS

'000 t	thousand tonnes
\$m	million dollars
ABN	Australian Business Number
ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATO	Australian Taxation Office
EPA	Environment Protection Authority
GDP	gross domestic product
GE	group employer
IVA	industry value added
OPBT	operating profit before tax
PAYGW	pay-as-you-go withholding
PCBs	polychlorinated biphenyls
RSE	relative standard error
SE	standard error
TAU	type of activity unit
TNTS	The New Tax System

TECHNICAL NOTE DATA COMPARABILITY

QUANTITIES OF WASTE AT LANDFILLS

1 The data presented in table 8 was produced using administrative by-product data from state and territory government departments and Environment Protection Authorities (EPAs) for quantities of waste received and disposed of at landfills.

2 This information relates to waste received from households and businesses across the economy, not just businesses in the waste management services sector.

3 Caution should be exercised in making any comparisons across states and territories as the data provided is not strictly comparable due to the variation in state/territory legislation, scope, concepts and definitions.

4 The following information provides a description of the scope and nature of each state's/territory's data.

New South Wales

5 The waste disposal data provided for New South Wales represents all solid and inert waste disposed to licensed landfills in the Sydney Metropolitan and Extended Regulated Areas during 2002–03.

6 Licensing applies to landfills that receive more than 5,000 tonnes of solid and/or inert waste per annum or are within an environmentally sensitive area. Liquid waste is banned from licensed landfills in New South Wales.

7 Any landfill receiving more than 20,000 tonnes of solid and/or inert waste per annum is required to use a weighbridge. All waste disposed in the Sydney metropolitan area and most of the extended regulated areas is weighed via a weighbridge.

8 Cover material is reported under the waste stream it was received from (i. e. commercial and industrial, construction and demolition, domestic or municipal), if disposed to landfill. This includes soil, clean excavated natural material, and virgin excavated natural material.

Victoria

9 The waste disposal data provided for Victoria represents all solid, inert and prescribed waste disposed to licensed landfills in the Melbourne Metropolitan and Rural Areas during 2002–03.

10 Licensing applies to landfills that serve more than 5,000 people. Liquid waste is banned from landfills in Victoria.

11 The data reported for Victoria were mainly based on weighbridge weights, however, a small amount of data was based on volumetric estimates. Waste sent to unlicensed landfills (small municipal landfills serving less than 5,000 people) was excluded from the data, however, this was considered relatively small.

12 The 'other' category for Victoria includes Prescribed Industrial Wastes only. Prescribed industrial wastes (listed in the *Environment Protection [Prescribed Wastes] Regulations 1998*) are generated from industrial sources and include hazardous wastes and other wastes that affect amenity e.g. via odour impacts).

13 Cover/Clean Fill material for Victoria was included in the different types of wastes.

14 Cover material is dense, inert and incombustible material used to cover the waste usually at the end of each days operation. This material is used to prevent odour, litter, etc., from escaping the landfill and is typically Clean Fill.

15 Clean Fill consists of soil (being clay, silt, sand), gravel and rock, all being naturally occurring materials. Contamination levels must be less than those levels specified by EPA Victoria, otherwise the material must be described as prescribed industrial waste, namely contaminated soils (low level) or contaminated soils.

16 Some landfills licensed to receive contaminated soils (low level), which is a prescribed industrial waste, may use this material as cover, as well as Clean Fill.

Queensland

17 The waste disposal data provided for Queensland represents all solid, inert and regulated waste disposed to licensed landfills in the Metropolitan and Rural Areas during 2002–03.

18 Licensing applies to landfills that receive more than 50 tonnes of solid and/or inert waste per annum. Liquid waste is not landfilled in Queensland.

19 The data reported for Queensland were mainly based on weighbridge weights. A small amount of data was based on volumetric estimates (for small landfills). Waste sent to unlicensed landfills was excluded from the data, however, this was considered relatively small.

20 Data in 'other' is predominantly Cover material, but also includes Regulated Waste. Cover material includes Clean Fill, certain inert wastes as well as some low level contaminated soil. Regulated wastes are listed in the *Environment Protection Act 1994*, and include lead, certain acids and acid solutions, heat treatment salts, lime neutralised sludges, as well as other regulated wastes. There was 94,567 tonnes of regulated waste during 2002–03.

South Australia

21 The waste disposal data provided for South Australia represents all solid, inert and liquid waste disposed to licensed landfills in the Adelaide Metropolitan and Rural Areas during 2002–03.

22 Licensing applies to landfills that receive solid and/or inert or liquid waste.

23 The data reported for the Metropolitan area were based on weighbridge weights. Data for landfills in non-metropolitan areas disposing of more than 10,000 tonnes of solid waste per annum were also based on weighbridge weights. Data for most council landfills that receive less than 10,000 tonnes of solid waste per annum were based on population based estimates.

24 South Australian estimates include Waste Fill. Waste Fill includes clay, concrete, rock, sand, soil or other inert mineralogical matter in pieces not exceeding 100mm in length, and containing chemical substances in concentrations (calculated in a manner determined by the Authority) less than the concentrations for those substances set out in *Schedule 6*, but does not include waste consisting of, or containing, asbestos or bitumen.

Western Australia

25 The waste disposal data provided for Western Australia represents all solid and inert waste accepted at Perth Metropolitan landfill sites and those country landfill sites which accept waste generated in the metropolitan region at the end of June 2003. The 2002–03 data include only one country landfill site.

26 Some of the data reported for the Perth Metropolitan area were based on weighbridge weights, while other data were based on volumetric estimates based on conversion factors as set out in regulations to convert volumes to tonnes. All seven putrescible landfill sites and four out of twelve inert sites used weighbridges.

27 Licensing applies to landfills that receive more than 500 tonnes of solid waste per annum. Liquid waste is not landfilled in Western Australia.

28 Clean Fill that is used as Cover material is exempted from a landfill levy and is not included in the Western Australian estimates. Clean Fill which is disposed of to landfill is counted as waste. Clean Fill includes material that will have no harmful effects on the environment and which consists of rocks or soil arising from the excavation of undisturbed material.

Tasmania

29 Data on waste quantities disposed of at landfill are not available for 2002–03.

Northern Territory

30 Data on waste quantities disposed of at landfill are not available for 2002–03.

Australian Capital Territory

31 The waste disposal data provided for the Australian Capital Territory represents all solid, inert and hazardous waste disposed to licensed landfills in the Australian Capital Territory during 2002–03.

32 Licensing applies to landfills that receive more than 5,000 tonnes of waste per annum.

33 The data reported for the Australian Capital Territory were based on weighbridge weights.

34 Bushfire damaged material is excluded from the Australian Capital Territory data. Cover material which includes Clean Fill is also excluded.

GLOSSARY

Average annual percentage change	<p>A percentage change, p, from 1996–97 to 2002–03 is converted into an average annual change, a, as follows.</p> $a = (1 + p)^{1/6} - 1$ <p>The average annual percentage change is not an arithmetic average of the actual percentage changes from year to year. It is labelled the 'average' change because if any value increases by $a\%$ every year for six years, then at the end of the six years it will have grown by a total $p\%$.</p>
Bad and doubtful debts	<p>Bad and doubtful debts is the amount of accounts receivable that are either written off, or estimated to be uncollectible during an accounting period, that are expensed in a period's profit calculations.</p>
Collection and transport of recyclables	<p>This item relates to the collection and transport of segregated and co-mingled recyclables (including green waste/organic material) from the kerbside, drop-off centres and other sources (including businesses and commercial premises).</p>
Collection and transport of waste	<p>This item relates to the collection and transport of: domestic and municipal waste; commercial, industrial, construction and demolition waste; and liquid waste.</p>
Commercial, industrial, construction and demolition waste	<p>This is putrescible and/or inert waste arising from institutional, commercial, industrial activities and waste arising from demolition and building activities, e.g. demolition rubble and building off-cuts.</p>
Conditional grants from government	<p>This item includes capital and specific purpose operational grants received from Commonwealth and state government for solid waste management activities.</p>
Contract and subcontract expenses for waste management services	<p>These are contract expenses paid to other organisations for waste management services such as the collection and transport, processing, treatment and/or disposal of waste.</p>
Depreciation and amortisation	<p>Depreciation and amortisation are financial charges made in the accounts to reflect that part of the value of the asset which may be regarded as having been used up in producing revenue in a particular accounting period. Depreciation generally refers to physical (tangible) noncurrent assets and amortisation generally refers to intangible noncurrent assets.</p>
Domestic and municipal waste	<p>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.</p>
Employees	<p>Employees are all persons working for this business who receive remuneration in any part of the reference period, excluding working proprietors and partners.</p>
Employer contributions to superannuation funds	<p>Employer contributions to superannuation funds are the cost of the employer's contributions during the reference period made on behalf of employees, including salary sacrificed amounts.</p>
Employment at end June	<p>Employment represents all working proprietors and partners, and employees on the payroll for the last pay period ending in June. Employees absent on paid or prepaid leave are included. Non-salaried directors, subcontractors and persons solely paid by commission without a retainer are excluded.</p>
Fees for the treatment/processing and/or disposal of waste	<p>These are fees paid at waste management facilities (e.g. dumping and tipping fees at transfer stations and landfills).</p>
Fringe benefits tax	<p>Fringe benefits tax is payable by employers when certain benefits in excess of normal wages or salaries (e.g. free or discounted goods or services) are received by their employees (or associates of employees) in connection with their employment.</p>

GLOSSARY *continued*

Green waste/organic material	This data item includes all forms of green waste/organic material that are separated specifically for the purpose of recycling. Examples include segregated green waste from kerbside collection, tree loppings, street sweepings and lawn clippings etc.
Green waste recycling facility	This is a recycling facility which treats/processes green waste and/or organic material.
Hazardous waste	For the purpose of the Waste Management Services Survey, hazardous, special, listed, controlled or prescribed wastes are those wastes that, due to their toxic, infectious, radioactive, flammable or other character, require special treatment. Examples include waste oils, organic chemicals (e.g. PCBs), contaminated earth (e.g. with lead, hydrocarbons), medical wastes, asbestos, acids, reactive chemicals, pesticides and radioactive material.
Industry value added (IVA)	Industry value added for market producers is an estimate of the difference between the market value of the output of an industry and the purchases of materials and selected expenses incurred in the production of that output. For market producers, it has been derived by determining the income associated with the production (in this case sales of goods and services, changes in level of trading stock inventories, operational funding from government and capital work done by own employees for own use or for rental or lease), and subtracting the direct costs of producing these outputs (purchases of goods and services used in production of goods for resale and selective expenses related to the sale of goods and administrative expenses, exclusive of indirect taxes such as payroll tax, fringe benefits tax, land tax and land rates).
Insurance premiums	Insurance premiums are expenses incurred by an organisation in respect of different types of insurance policies but excluding workers' compensation and compulsory third party motor vehicle insurance.
Interest expenses	Interest expenses are outflows of funds related to the cost of borrowing money.
Interest income	Interest income is income earned through the lending out of funds owned by the entity.
Labour costs	These include staff related costs such as wages and salaries, fringe benefits tax and payroll tax, employer contributions to superannuation, workers' compensation premiums, and provision expenses for employee entitlements.
Landfill	A landfill is a naturally formed or excavated hole in the ground that is used for the disposal of waste.
Landfill operator	This is the individual, business or local government authority who operates the landfill as distinct from those who own the landfill.
Liquid waste (including sludge)	This is waste in a liquid physical state that would generally be processed at a liquid treatment plant.
Liquid treatment plant	This is a waste facility which is licensed to treat and/or dispose of liquid waste.
Materials recovery facility	This is a facility for separating and sorting co-mingled recyclables into their material types.
Net capital expenditure	This item comprises acquisitions less disposals for plant, machinery, equipment and land used for solid waste management activities.
On-road motor vehicle running expenses	These are expenses incurred using 'on-road' motor vehicles (including on-road garbage collection trucks) for business purposes and include such items as fuel, registration fees, compulsory third-party insurance premiums, and repair and maintenance.
Operating profit before tax	This item is a measure of profit/surplus (or loss/deficit), during the reference period, taken before extraordinary items are brought into account and prior to the deduction of income tax and appropriations to owners (i.e. dividends paid, drawings). It is generally derived by subtracting total expenses from total income, and adding the difference between closing inventory and opening inventory for the period.

GLOSSARY *continued*

Operating profit margin	This represents the percentage of an organisation's sales of goods and services which becomes profit after all operating expenses have been deducted. It is derived by expressing total operating profit before tax (OPBT) as a percentage of total sales of goods and services.
Organisations at end June	This is a count of organisations operating at the end of June 2003. It excludes any organisations that ceased operations during the financial year.
Other expenses (private and public trading sector)	This item includes all other operating expenses incurred and not included as a separate expense item (e.g. telecommunication, postal, mailing and courier services expenses; paper, printing and stationery expenses; advertising expenses; other management and administrative services; and other organisation expenses not included elsewhere).
Other expenses (general government sector)	This item includes all other expenses related to solid waste management activities (e.g. payments to other government organisations, running costs of on-road and off-road vehicles and equipment, other waste management licence fees, interest in respect of finance leases and legal costs).
Other recyclables	This item includes income from the sale of recyclables except for the sales of green waste/organic material.
Other solid waste	This is solid waste other than domestic and municipal, commercial and industrial, construction and demolition waste.
Owner/drivers	These are persons who owned and drove their own vehicles on a contract basis for a waste management business.
Payments to employment agencies for staff	This item refers to payments made by a business to an employment agency for the supply or recruitment of staff.
Payroll tax	Payroll tax is a tax levied by state and territory governments upon the amount of wages and salaries paid by a business.
Private and public trading sector	This includes non-financial organisations which are mainly engaged in providing market non-financial goods and services, and aim to cover most of their expenses from revenue.
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. forklifts, mobile plant and quarry dump trucks), compost bins, worm farms and waste containers, etc.
Recyclables	Recyclables are materials that have been segregated from the waste stream with a view to being used again as a material for products which may or may not be similar to the original. Recyclable materials include paper products, glass, aluminium containers, plastics, metals, used oil, green waste/organic material, concrete, wood and bricks, etc.
Renewable energy	This is a term which has been used to cover a range of activities related to the conversion of waste into useable energy, often as a by-product of waste management activities. This data item includes income from sources such as: sales of landfill gas; sales of electricity generated from landfill gas; and sales of waste for use in power generation schemes.
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 from 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.

GLOSSARY *continued*

Solid waste	This item relates to waste that is in a solid physical state. Solid waste is comprised of three categories: domestic and municipal waste; commercial, industrial, construction and demolition waste; and other solid waste. For full definitions of these categories please refer to the individual entries in this Glossary.
Transfer station	A conveniently located collection point for a community's solid waste. Waste is consolidated into fewer, larger loads and hauled to approved disposal or processing facilities.
Treatment/processing and/or disposal of waste	Waste treatment/processing includes any sorting or physical transformation of materials necessary prior to their disposal at a landfill, incinerator, etc.
Treatment/processing 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	<p>For the private and public trading sector this item refers to the gross wages and salaries (including capitalised wages and salaries) of all employees of the organisation. For the general government sector this item only refers to the wages and salaries of employees engaged in solid waste management activities.</p> <p>The item includes severance, termination and redundancy payments, salaries and fees of directors and executives, retainers and commissions of persons who received a retainer, bonuses, and annual and other types of leave. Provision expenses for employee entitlements (e.g. provisions for annual leave and leave bonus, long service leave, sick leave, and severance, termination and redundancy payments) are also included. Payments related to salary sacrifice and payments to self-employed persons such as consultants, contractors and persons paid solely by commission without a retainer are excluded.</p>
Waste	Waste is all material not wanted by the person or business whose activities produce it. Waste includes all materials that are intended for recycling, treatment or disposal without, or with only nominal, remuneration to the waste generator. Refer also to the definitions in this Glossary for liquid waste, sludge and solid waste.
Waste disposal levies/contributions paid to the Environment Protection Authority (EPA)	In New South Wales, Victoria, South Australia and Western Australia landfill sites are required to pay a waste disposal levy/contribution to their respective state EPAs. These levies vary considerably between the states, but are generally based upon the weight of waste disposed of at a landfill.
Waste management licence fees	These expenses include fees paid to government 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. They exclude waste disposal levies/contributions paid directly to the EPA.
Working proprietors and working partners of unincorporated businesses	<p>A working proprietor operates his or her own business (a sole proprietorship), while a working partner, along with one or more other partners, operates a partnership.</p> <p>Working proprietors and working partners are the owners of their business and as such they are not considered to be employees of that business.</p>
Workers' compensation costs	Workers' compensation is a compulsory insurance cover taken out by all employers, except for 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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