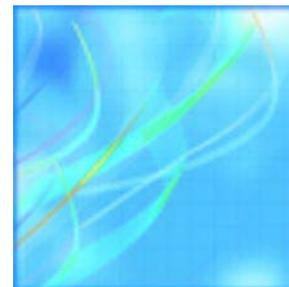


Waste Management Industry Survey: Business and Government Sectors



2008



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Statistics Canada
Environment Accounts and Statistics Division
Environmental Protection Accounts and Surveys

Waste Management Industry Survey: Business and Government Sectors

2008

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

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Preface

This report presents the results of the 2008 *Waste Management Industry Survey: Business Sector* and the 2008 *Waste Management Industry Survey: Government Sector*. These surveys gathered information on the financial characteristics and waste management activities undertaken by companies, local governments and other public waste management bodies.

These services included the collection and transportation of wastes and of materials destined for recycling, the operation of non-hazardous and hazardous waste disposal facilities, the operation of transfer stations and the treatment and disposal of wastes deemed to be hazardous.

The results of these surveys provide a picture of physical characteristics of waste disposal and recycling as well as financial and employment features of businesses and local governments that provide waste management services.

The data have been analyzed and presented at a provincial level wherever it was possible to do so without compromising confidentiality.

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Highlights

- Nationally, the amount of waste sent to private and public waste disposal facilities remained relatively stable between 2006 and 2008, totalling about 26 million tonnes. New Brunswick saw the greatest decline in waste disposal, with a drop of approximately 6% between 2006 and 2008. Saskatchewan had the highest increase, at approximately 8% over the same period.
- Residential waste disposal fell by 4% from 2006, while non-residential disposal rose by 2%. Alberta had the highest proportion of waste disposed from non-residential sources at 76%.
- The amount of waste diverted per Canadian to recycling or organic processing facilities rose from 237 kilograms to 254 kilograms per person.
- The total quantity of materials sent to recycling or organic processing facilities increased by approximately 10% to 8.5 million tonnes in 2008. The largest increase in diversion was for electronic materials, at 115%.
- Operating revenues for governments from the provision of waste management services reached \$1.8 billion in 2008. Current expenditures totalled \$2.6 billion, compared to \$2.1 billion in 2006. Full-time employment in the government sector of the waste management industry rose by approximately 5%.
- Between 2006 and 2008, revenues of Canadian businesses providing waste management services climbed 13%. Full-time employment by these businesses increased nationally by about 13% during the same period.

Analysis

Total waste

In 2008, Canadians produced over 1,031 kilograms of waste per person, virtually the same per capita production as in 2006. Of this total, 777 kg went to landfills or was incinerated while 254 kg was diverted from landfill. Overall, this translated into 34 million tonnes of waste handled by the waste management industry; 26 million tonnes of that waste was disposed of in landfills or was incinerated and over 8 million tonnes was diverted or processed through material recovery facilities or centralized composting operations.

Approximately 21 million tonnes of waste generated came from non-residential sources while the other 13 million tonnes was from residential sources.

Disposal

Canadians sent approximately 26 million tonnes of waste for disposal to landfills or incinerators in 2008, about the same quantity as in 2006. This followed a 3% increase between 2004 and 2006.

The amount of waste sent for disposal declined in most provinces, except for Manitoba, Saskatchewan and Alberta. New Brunswick saw the most significant drop in its waste disposal from 2006 to 2008 at 6%. For its part, Saskatchewan recorded the largest increase in waste sent for disposal, up about 8% from 2006 to 2008.

One-third of waste for disposal came from residential sources while the other two-thirds came from non-residential sources. These proportions were virtually unchanged from 2006 and 2004. Waste from residential sources totalled 8.5 million tonnes. Non-residential waste rose by slightly less than 2% over the same period to 17.3 million tonnes in 2008.

Rates of disposal

Per capita measures of waste disposal provide a way of examining changes in disposal while at the same time accounting for the effects of population. In some cases, increases in the amount of waste being sent for disposal can be attributed to population growth and not necessarily to an increase in the intensity of waste production.

On average, each Canadian was responsible for 777 kilograms of waste disposal in 2008. Nova Scotia had the lowest per capita disposal at 378 kilograms, followed by British Columbia (641 kilograms) and New Brunswick (642 kilograms). In contrast, Alberta had the highest quantity of waste disposal per person at 1,122 kilograms. Newfoundland and Labrador, Quebec, Manitoba and Saskatchewan also exceeded the national average for per capita waste disposal in 2008.

Sources of waste for disposal

Waste from non-residential sources usually accounts for the majority of waste for disposal. This held true in 2008 with non-residential sources contributing 67% of the waste for disposal while 33% came from residential sources.

Alberta had the highest proportion of waste disposed from non-residential sources at 76%, followed by Saskatchewan at 68%. Newfoundland and Labrador had the lowest proportion at 47%.

On a per capita basis, there were 256 kilograms of residential waste and 520 kilograms of non-residential waste for each Canadian (Text table 1). Nova Scotia had the lowest per capita disposal from residential sources at 158 kilograms. Ontario and British Columbia were also below the national average at 250 kilograms and 219 kilograms respectively. Alberta was close to the national average in per capita residential waste disposed, but the amount of non-residential waste per capita was much higher than in all other provinces and territories, at 855 kilograms. Saskatchewan ranked second in non-residential waste disposal per capita with 605 kilograms, followed by Quebec at 530 kilograms per capita.

Text table 1
Disposal of waste by source, province and territory, 2008

	Residential proportion of waste	Non-residential proportion of waste	Residential sources per capita	Non-residential sources per capita
	percent		kilograms	
Canada	33	67	256	520
Newfoundland and Labrador	53	47	429	382
Prince Edward Island	x	x	x	x
Nova Scotia	42	58	158	220
New Brunswick	49	51	313	329
Quebec	33	67	265	530
Ontario	34	66	250	495
Manitoba	41	59	332	469
Saskatchewan	32	68	286	605
Alberta	24	76	267	855
British Columbia	34	66	219	422
Yukon, Northwest Territories and Nunavut	x	x	x	x

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 051-0001 and 153-0041.

Diversion

The amount of materials diverted, either for recycling or composting, increased by about 10% to almost 8.5 million tonnes in 2008. Slightly less than half (49%) of diverted materials came from non-residential sources, virtually the same proportion as in 2006. New Brunswick (77%), British Columbia (59%), Quebec (58%) and Manitoba (56%) had higher proportions of waste diverted from non-residential sources than the national average.

There was an increase in the diversion of most materials, regardless of source, but the largest increase was in electronic materials, up 115% from 2006. Plastic materials prepared for recycling had the second largest increase in diversion, up 40% from 2006.

Paper fibres, including newsprint, cardboard and mixed paper fibres, make up the largest portion of all diverted materials, accounting for 41%. Organic materials diverted rose from 26% in 2006 to 29% in 2008.

Waste management industry financial characteristics

Local government sector

Operating revenues

Operating revenues for local governments from the provision of waste management services totalled nearly \$1.8 billion in 2008.¹

1. Revenues from the collection of municipal levies are included in this total; prior to 2008 these revenues were not specifically reported. Comparison of 2008 local government operating revenues with previous years is not recommended.

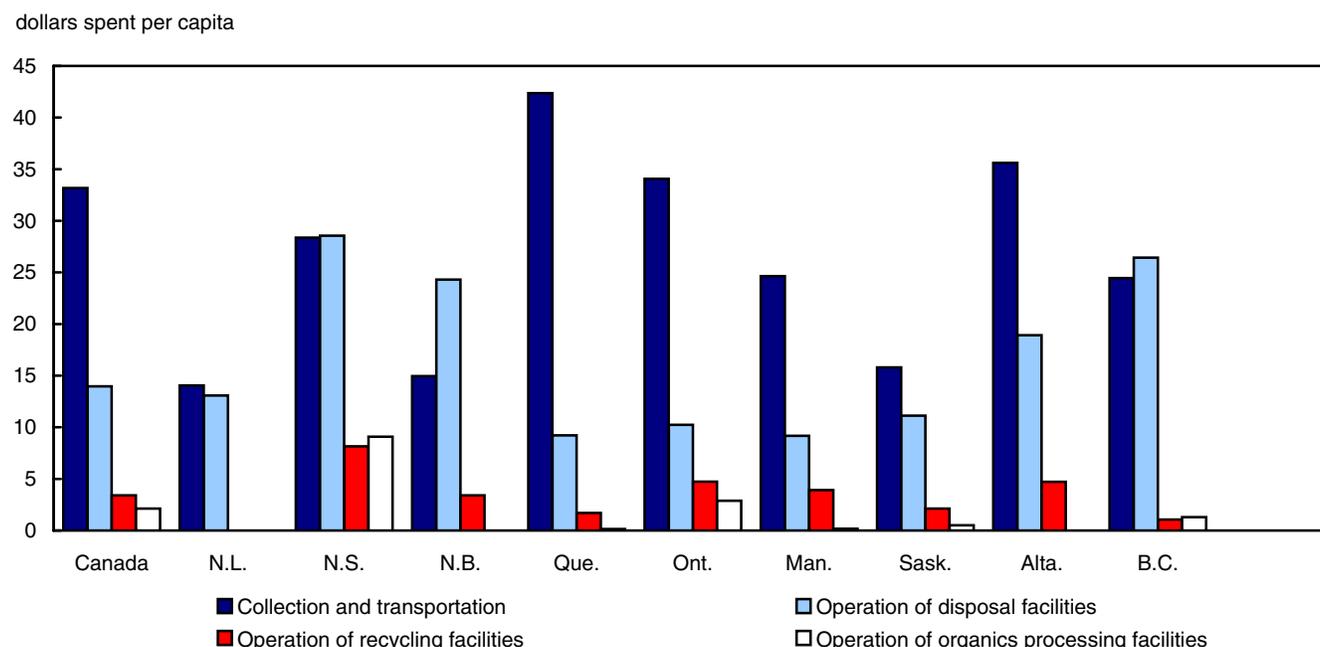
Current expenditures

Total current expenditures by local governments in Canada increased from \$2.1 billion in 2006 to \$2.6 billion in 2008. At \$1.1 billion, collection and transportation continued to account for the majority of current expenditures in 2008, followed by operation of disposal facilities (\$465 million) and tipping fees (\$368 million). Current expenditures on the operation of recycling facilities fell approximately 34% between 2006 and 2008 to \$113 million.

Capital expenditures totalled \$494 million in 2008, up by over 58% from 2006.

To get a clearer picture of waste management at the provincial level, it is useful to look at the per capita expenditures on waste management activities as well as the per capita quantity of waste diverted from landfill. Nova Scotia and British Columbia spent the most per capita (nearly \$30 per person compared to the national average of \$14 per person) on the operation of disposal facilities (Chart 1). Nova Scotia also led in expenditures on recycling facilities at \$8 per person, compared to the national average of \$3 per person. Lastly, Nova Scotia also spent the most per person on the operation of organics processing facilities at \$9 per person compared to the national average of \$2 per person.

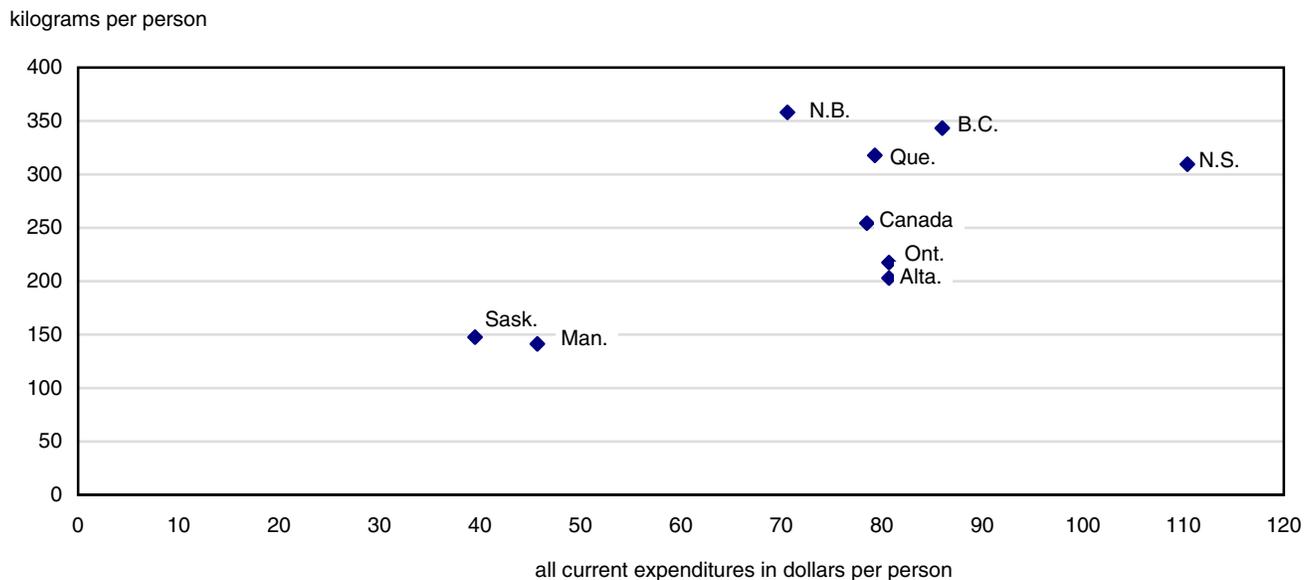
Chart 1
Selected current local government expenditures ¹ related to waste management, 2008



1. Data for Prince Edward Island, Yukon, Northwest Territories and Nunavut are not included in order to meet the confidentiality requirements of the *Statistics Act*. For the same reason, the government expenditures related to the operation of organics processing facilities for Alberta are not included.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 51-0001 and 153-0045.

Chart 2
Waste diverted and local government current expenditures per capita, 2008



Note(s): Data for Newfoundland and Labrador, Prince Edward Island, Yukon, Northwest Territories and Nunavut are not included in order to meet the confidentiality requirements of the *Statistics Act*.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 051-0001, 153-0043 and 153-0045.

An examination of per capita expenditures on waste management activities and the amount of waste diverted per capita indicates that those provinces that spent more money per capita were generally able to divert greater amounts of waste per person (Chart 2).

Nova Scotia, British Columbia, Alberta, Ontario and Quebec local governments all spent more than the national average of \$79 per person on waste management. New Brunswick, British Columbia, Quebec and Nova Scotia diverted more than the national average of 254 kilograms per person from landfill.

On the contrary, local governments in Manitoba and Saskatchewan spent \$46 or less per person on waste management and the quantity of waste diverted in these provinces was at least 100 kilograms per person less than the national average of 254 kilograms per person.

Business sector

Operating revenues

In Canada, revenues for businesses in the waste management industry increased from 2006 to 2008 by 13% to \$5.8 billion. The highest growth in revenues occurred in Alberta (73%), New Brunswick (65%) and Newfoundland and Labrador (52%).

Operating expenditures

Gross operating expenditures incurred by waste management firms increased by 19% from 2006 to \$5.1 billion in 2008. During the same period, capital expenditures rose by 36% to almost \$412 million. Capital expenditures vary significantly from year to year.

Firms in all provinces increased their operating expenditures between 2006 and 2008. Firms in several provinces posted increases in operating expenditures that exceeded the national average (19%); this was the case for businesses in Alberta (79%), New Brunswick (63%), Newfoundland and Labrador (60%), Manitoba (41%), the territories (37%) and Saskatchewan (22%).

Businesses in Prince Edward Island maintained relatively stable operating expenditures, while those in British Columbia, Ontario, Nova Scotia and Quebec incurred moderate increases, at 16%, 11%, 5% and 4% respectively.

Employment, local government and business sectors

The number of full-time workers employed in the waste management industry in 2008 totalled 31,344 for the government and business sectors combined, an increase of 11% from 2006. Over three-quarters of those employed in the waste management industry work in the business sector. Full-time employment in the business sector was up 13% across the country between 2006 and 2008, while during the same period employment in the government sector of waste management rose by 5%.

Related products

Selected publications from Statistics Canada

16-002-X	EnviroStats
16-201-X	Human Activity and the Environment
16-253-X	Canadian Environmental Sustainability Indicators: Socio-economic Information
16-257-X	Environment Accounts and Statistics Product Catalogue
16F0006X	Environmental Protection Expenditures in the Business Sector

Selected CANSIM tables from Statistics Canada

153-0041	Disposal of waste, by source, Canada, provinces and territories, biennial
153-0042	Materials diverted, by source, Canada, provinces and territories, biennial
153-0043	Materials diverted, by type, Canada, provinces and territories, biennial
153-0044	Business sector characteristics of the waste management industry, Canada, provinces and territories, biennial
153-0045	Local government characteristics of the waste management industry, Canada, provinces and territories, biennial

Selected surveys from Statistics Canada

1736	Waste Management Industry Survey: Government Sector
2009	Waste Management Industry Survey: Business Sector

Selected summary tables from Statistics Canada

- *Disposal and diversion of waste, by province and territory*
- *Waste disposal by source, province and territory*

Statistical tables

Table 1-1
Disposal of waste — Province and territory

	Total waste disposal			Waste disposal per capita		
	2006	2008	Percentage change 2006 to 2008	2006	2008	Percentage change 2006 to 2008
	tonnes		percent	kilograms		percent
Canada	25,925,964^r	25,871,310	-0.2	796^r	777	-2.4
Newfoundland and Labrador	428,809 ^r	410,590	-4.2	840 ^r	811	-3.5
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	359,105 ^r	354,231	-1.4	383 ^r	378	-1.2
New Brunswick	511,706 ^r	479,461	-6.3	686 ^r	642	-6.5
Quebec	6,317,393 ^r	6,158,152	-2.5	828 ^r	794	-4.0
Ontario	9,710,459 ^r	9,631,559	-0.8	767 ^r	745	-2.9
Manitoba	904,272 ^r	966,199	6.8	764 ^r	801	4.9
Saskatchewan	833,753	902,943	8.3	840	891	6.0
Alberta	3,819,872	4,029,435	5.5	1,117	1,122	0.5
British Columbia	2,917,080	2,811,568	-3.6	687	641	-6.7
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x

Note(s): Figures may not add up to totals due to rounding. Total amount of non-hazardous waste disposal in public and private waste disposal facilities includes waste that is exported out of the source province or out of the country for disposal. This does not include waste disposal in hazardous waste disposal facilities or waste managed by the waste generator on site.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 051-0001 and 153-0041.

Table 1-2
Disposal of waste — Source, province and territory

	Residential sources ¹		Non-residential sources ²		All sources	
	2006	2008	2006	2008	2006	2008
	tonnes					
Canada	8,893,494^r	8,536,891	17,032,470^r	17,334,419	25,925,964^r	25,871,310
Newfoundland and Labrador	227,618	216,992	201,192 ^r	193,598	428,809 ^r	410,590
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	169,337	148,060	189,768 ^r	206,171	359,105 ^r	354,231
New Brunswick	263,580 ^r	233,703	248,125 ^r	245,758	511,706 ^r	479,461
Quebec	2,125,704 ^r	2,052,182	4,191,690 ^r	4,105,970	6,317,393 ^r	6,158,152
Ontario	3,411,642 ^r	3,231,399	6,298,818 ^r	6,400,160	9,710,459 ^r	9,631,559
Manitoba	425,304 ^r	400,297	478,968 ^r	565,902	904,272 ^r	966,199
Saskatchewan	296,062	289,760	537,691	613,182	833,753	902,943
Alberta	973,683	958,539	2,846,189	3,070,895	3,819,872	4,029,435
British Columbia	956,968	960,472	1,960,113	1,851,097	2,917,080	2,811,568
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x

1. Residential non-hazardous waste disposal includes solid waste produced by all residences and includes waste that is picked up by the municipality (either using its own staff or through contracting firms), and waste from residential sources that is self-hauled to depots, transfer stations and disposal facilities.

2. Non-residential non-hazardous solid waste are those wastes generated by all sources excluding the residential waste stream. These include: industrial materials, which are generated by manufacturing, and primary and secondary industries, and is managed off-site from the manufacturing operation; commercial materials, which are generated by commercial operations, such as, shopping centres, restaurants, offices, and others; and institutional materials which are generated by institutional facilities, such as, schools, hospitals, government facilities, seniors homes, universities, and others. These wastes also include construction, renovation and demolition non-hazardous waste, also referred to as DLC (demolition, land clearing and construction waste). These refer to wastes generated by construction, renovation and demolition activities. It generally includes materials, such as, wood, drywall, certain metals, cardboard, doors, windows, wiring, and others. It excludes materials from land clearing on areas not previously developed as well as materials that include asphalt, concrete, bricks and clean sand or gravel.

Note(s): Figures may not add up to totals due to rounding. Total amount of non-hazardous waste disposal in public and private waste disposal facilities includes waste that is exported out of the source province or out of the country for disposal. This does not include waste disposal in hazardous waste disposal facilities or waste managed by the waste generator on site.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0041.

Table 2
Diversion of waste by province and territory

	Total materials diverted			Diverted materials per capita			Diversion rate	
	2006	2008	Percentage change 2006 to 2008	2006	2008	Percentage change 2006 to 2008	2006	2008
	tonnes		percent	kilograms		percent		
Canada	7,727,030 ^r	8,473,257	9.7	237 ^r	254	7.2	23.0 ^r	24.7
Newfoundland and Labrador	x	x	x	x	x	x	x	x
Prince Edward Island	x	x	x	x	x	x	x	x
Nova Scotia	275,983	289,950	5.1	294	310	5.2	43.5	45.0
New Brunswick	252,174	267,467	6.1	338	358	5.9	33.0	35.8
Quebec ¹	2,434,300 ^r	2,463,600	1.2	319 ^r	318	-0.4	27.8 ^r	28.6
Ontario	2,396,856	2,810,900	17.3	189	217	14.9	19.8	22.6
Manitoba	152,799	170,377	11.5	129	141	9.5	14.5	15.0
Saskatchewan	106,868	149,619	40.0	108	148	37.0	11.4	14.2
Alberta	652,637	728,536	11.6	191	203	6.3	14.6	15.3
British Columbia	1,366,191	1,505,112	10.2	322	343	6.6	31.9	34.9
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x	x	x

1. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): Figures may not add up to totals due to rounding. This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 051-0001, 153-0041 and 153-0043.

Table 3
Materials diverted by source, province and territory

	Residential sources ¹		Non-residential sources ²		All sources	
	2006	2008	2006	2008	2006	2008
	tonnes					
Canada	3,722,843 ^r	4,360,505	4,004,187 ^r	4,112,752	7,727,030 ^r	8,473,257
Newfoundland and Labrador	x	x	x	x	x	x
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	138,869	149,961	137,114	139,989	275,983	289,950
New Brunswick	32,675	62,076	219,499	205,391	252,174	267,467
Quebec ³	912,260 ^r	1,046,000	1,522,040 ^r	1,417,600	2,434,300 ^r	2,463,600
Ontario	1,511,467	1,878,899	885,389	932,001	2,396,856	2,810,900
Manitoba	70,239	74,168	82,560	96,209	152,799	170,377
Saskatchewan	38,578	78,381	68,290	71,238	106,868	149,619
Alberta	329,541	391,709	323,094	336,827	652,637	728,536
British Columbia	625,827	614,204	740,364	890,908	1,366,191	1,505,112
Yukon, Northwest Territories and Nunavut	x	x	x	x	x	x

1. Residential non-hazardous recyclable materials include solid non-hazardous materials produced in all residences and include non-hazardous materials that are picked up by the municipality (either using its own staff or through contracting firms) and non-hazardous materials from residential sources that are self-hauled to depots, transfer stations and disposal facilities.

2. Non-residential sources include solid non-hazardous recyclable material from the Industrial, Commercial, and Institutional (IC and I) sector as well as the Construction, Renovation and Demolition sector (CRD). Materials are those generated by all IC and I and CRD sources in a municipality, and are excluded from the residential waste stream.

3. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): Figures may not add up to totals due to rounding. This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM tables 153-0042 and 153-0043.

Table 4-1
Materials diverted by type, province and territory — 2006

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec ¹	Ontario
tonnes						
All materials	x	x	275,983	252,174	2,434,300 ^r	2,396,856
Newsprint	x	x	33,128	10,011	593,000	380,281
Cardboard and boxboard	x	x	31,373	9,808	462,540	474,211
Mixed paper	x	x	8,592	x	130,460	194,698
Glass	x	x	1,511	0	95,000	179,341
Ferrous metals	x	0	2,962	x	111,800	80,794
Copper and aluminum	x	0	x	x	10,000	21,290
Mixed metals	x	x	x	x	18,500	22,343
White goods	x	x	4,700	x	248,000	22,023
Electronics	0	0	0	x	3,000	4,251
Plastics	x	x	4,540	864	95,000	60,195
Tires	x	x	x	x	70,000	4,948
Construction, renovation and demolition	0	0	51,263	10,633	236,000	187,353
Organics	0	x	133,934	x	360,000	732,200
Other materials	x	0	1,808	323	1,000	32,927
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut	Canada
tonnes						
All materials	152,799	106,868	652,637	1,366,191	x	7,727,030 ^r
Newsprint	34,240	19,905	65,119	x	x	1,261,891
Cardboard and boxboard	44,442	16,925	121,886	280,131	x	1,471,315
Mixed paper	17,710	3,195	78,657	x	x	688,003
Glass	7,973	x	x	39,406	x	378,003
Ferrous metals	18,360	x	20,034	22,811	x	278,036
Copper and aluminum	3,227	x	x	x	x	51,225
Mixed metals	3,779	2,065	14,745	81,595	x	148,231
White goods	x	3,092	12,099	7,158	x	299,397
Electronics	x	x	2,631	x	0	11,357
Plastics	5,696	4,637	14,852	44,956	x	232,339
Tires	955	x	2,508	35,987	x	138,646
Construction, renovation and demolition	2,704	x	34,300	188,323	x	715,364
Organics	12,490	3,627	231,459	292,031	x	2,006,461
Other materials	353	x	6,099	1,575	x	46,763

1. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): Figures may not add up to totals due to rounding. This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0043.

Table 4-2
Materials diverted by type, province and territory — 2008

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec ¹	Ontario
tonnes						
All materials	x	x	289,950	267,467	2,463,600	2,810,900
Newsprint	x	x	34,771	12,287	310,000	494,116
Cardboard and boxboard	x	x	27,271	15,111	456,000	419,690
Mixed paper	x	0	7,399	x	376,000	210,720
Glass	x	x	1,222	x	103,000	143,780
Ferrous metals	0	0	4,244	1,499	134,400	110,467
Copper and aluminum	x	x	581	x	19,200	17,363
Mixed metals	x	x	1,462	3,540	0	22,364
White goods	0	0	x	x	270,000	12,376
Electronics	0	0	x	x	7,000	4,419
Plastics	x	x	6,303	1,518	113,000	98,594
Tires	0	x	x	298	73,000	8,087
Construction, renovation and demolition	0	0	40,368	x	211,000	209,628
Organics	0	x	158,419	225,081	384,000	1,029,510
Other materials	x	x	2,400	954	7,000	29,786
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut	Canada
tonnes						
All materials	170,377	149,619	728,536	1,505,112	x	8,473,257
Newsprint	45,638	18,796	84,239	124,979	x	1,132,398
Cardboard and boxboard	38,249	39,332	115,789	260,478	x	1,400,907
Mixed paper	10,263	8,158	86,941	x	x	931,358
Glass	7,361	x	x	x	x	421,007
Ferrous metals	x	x	20,685	34,193	x	350,370
Copper and aluminum	4,146	x	6,814	x	x	58,950
Mixed metals	4,052	1,143	20,266	73,471	x	127,033
White goods	x	2,743	x	12,192	x	312,988
Electronics	99	x	5,429	x	0	24,367
Plastics	9,247	4,863	26,342	64,864	x	325,868
Tires	1,499	x	3,392	x	667	158,336
Construction, renovation and demolition	2,331	x	54,056	198,480	0	720,076
Organics	x	12,190	231,544	343,586	x	2,439,223
Other materials	703	1,009	10,111	9,101	x	70,375

1. Waste diversion data are derived from a survey administered by RECYC-QUÉBEC.

Note(s): Figures may not add up to totals due to rounding. This information covers only those companies and local waste management organizations that reported non-hazardous recyclable material preparation activities and refers only to that material entering the waste stream and does not cover any waste that may be managed on-site by a company or household. Additionally, these data do not include those materials transported by the generator directly to secondary processors, such as, pulp and paper mills while bypassing entirely any firm or local government involved in waste management activities.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0043.

**Table 5-1
Waste management industry by province and territory — Business sector characteristics**

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	number					
Number of businesses						
2006	24	5	56	49	414	410
2008	21	9	63	52	425	481
Total employees¹						
2006	226	105	804	627	5,430	9,547
2008	194	111	863	598	5,949	10,589
Full-time employees						
2006	171	105	716	494	5,106	9,243
2008	166	111	x	548	5,735	10,342
Part-time employees						
2006	55	0	88	133	324	304
2008	28	0	x	50	214	247
	thousand dollars					
Operating revenues²						
2006	20,952	18,699	120,663	70,146	1,043,895	2,353,301
2008	31,771	19,384	129,278	116,072	1,071,505	2,456,664
Operating expenditures²						
2006	17,906	15,538	110,850	66,206	895,108	2,003,318
2008	28,647	15,543	116,422	107,972	933,828	2,218,034
Capital expenditures²						
2006	626	x	5,688	6,802	67,559	145,938
2008	x	x	6,956	5,474	46,028	149,840
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut	Canada
	number					
Number of businesses						
2006	26	37	193	231	11	1,477
2008	38	44	249	254	13	1,649
Total employees¹						
2006	547	1,064	2,529	2,923	69	23,871
2008	531	1,119	3,054	3,443	99	26,550
Full-time employees						
2006	510	888	2,372	2,821	59	22,485
2008	511	x	2,888	3,342	91	25,327
Part-time employees						
2006	37	176	157	102	10	1,386
2008	20	x	166	101	8	1,223
	thousand dollars					
Operating revenues²						
2006	115,736	99,838	556,758	765,511	10,913	5,176,411
2008	157,140	121,504	960,537	769,012	14,879	5,847,745
Operating expenditures²						
2006	89,925	87,239	438,647	575,130	9,270	4,309,137
2008	126,917	106,068	786,955	665,607	12,728	5,118,722
Capital expenditures²						
2006	x	6,631	31,537	23,909	1,657	303,221
2008	13,963	19,487	142,289	24,225	x	411,651

1. Includes full and part-time employees. All employment estimates obtained from administrative data were counted as full-time employees.

2. Includes only those revenues and expenditures related to waste management activities.

Note(s): Figures may not add up to totals due to rounding. This table includes administrative data for businesses that were below the survey threshold for inclusion. As businesses may operate in more than one province or territory, the national totals will not equal the sum of the provincial totals.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0044.

Table 5-2
Waste management industry by province and territory — Government sector characteristics

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	number					
Total employees ¹						
2006	112	x	315	211	702	3,134
2008	127	x	308	219	766	3,184
Full-time employees						
2006	75	x	276	172	454	2,737
2008	88	x	275	176	464	2,761
Part-time employees						
2006	37	x	39	39	248	397
2008	39	x	33	43	302	423
	thousand dollars					
Operating revenues ²						
2006	4,606	x	41,092	38,824	166,376	309,055
2008	6,717	x	62,041	57,236	345,563	557,189
All current expenditures ³						
2006	14,730	x	89,276	50,197	422,753	872,572
2008	15,215	x	103,392	52,751	614,748	1,043,263
Capital expenditures						
2006	2,102	x	35,373	10,615	67,204	107,384
2008	x	x	20,851	13,205	112,594	187,847
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut	Canada
	number					
Total employees ¹						
2006	228	269	1,220	864	x	7,146
2008	211	270	1,409	910	x	7,502
Full-time employees						
2006	168	161	990	641	x	5,744
2008	166	188	1,128	693	x	6,017
Part-time employees						
2006	60	108	230	223	x	1,402
2008	45	82	281	217	x	1,485
	thousand dollars					
Operating revenues ²						
2006	26,376	15,064	174,495	235,891	x	1,036,903
2008	49,172	23,600	282,854	374,797	x	1,786,806
All current expenditures ³						
2006	47,332	28,653	222,623	297,181	x	2,066,919
2008	55,102	40,056	289,758	376,941	x	2,615,641
Capital expenditures						
2006	2,812	6,277	44,761	34,808	x	312,028
2008	3,985	7,768	89,637	27,635	x	493,866

1. Includes full-time and part-time employees working in the waste management activities of surveyed municipalities.

2. Includes revenues collected specifically for waste management purposes by local governments and other public waste management organizations that provided waste management services. They do not include general municipal tax revenues. Revenues from the collection of municipal levies are included in this total; prior to 2008 these revenues were not specifically reported. Comparison of 2008 local government operating revenues with previous years is not recommended.

3. Includes current expenditures directed towards waste management services.

Note(s): Figures may not add up to totals due to rounding. This table includes local governments, waste management boards and commissions and provincial bodies responsible for the delivery of waste management services. No estimates have been made for non-surveyed municipalities.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0045.

Table 6
Current expenditures by local governments on waste management by activity, province and territory

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
thousand dollars						
Collection and transportation						
2006	6,958	x	22,183	9,294	269,093	375,619
2008	7,117	x	26,579	11,174	328,337	440,477
Tipping fees						
2006	1,396	x	9,158	6,094	38,465	83,998
2008	1,444	x	10,933	6,944	134,598	139,614
Operation of disposal facilities						
2006	6,070	x	26,985	20,968	70,842	137,406
2008	6,621	x	26,757	18,159	71,511	132,397
Operation of transfer stations						
2006	0	x	4,056	1,837	2,098	45,946
2008	0	x	6,581	x	6,458	88,250
Operation of recycling facilities						
2006	x	0	7,735	x	18,584	109,177
2008	0	0	7,635	2,541	13,169	61,229
Operation of organics processing facilities						
2006	0	0	7,341	x	4,431	26,004
2008	0	0	8,511	x	1,120	37,355
Contributions to landfills post closure and maintenance fund ¹						
2006	..	..	..	..	..	..
2008	0	0	4,283	1,218	4,084	21,091
Other current expenditures						
2006	x	x	11,818	x	19,240	94,421
2008	33	x	12,112	7,784	55,470	122,850
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon, Northwest Territories and Nunavut	Canada
thousand dollars						
Collection and transportation						
2006	23,435	13,236	93,001	88,310	x	911,676
2008	29,712	16,022	127,899	107,174	x	1,105,294
Tipping fees						
2006	7,234	521	11,407	32,105	x	194,634
2008	5,115	x	16,464	47,694	x	368,260
Operation of disposal facilities						
2006	9,730	7,999	46,287	89,704	x	419,003
2008	11,053	11,274	67,937	115,902	x	465,221
Operation of transfer stations						
2006	791	328	13,263	39,721	x	109,038
2008	x	678	13,986	49,142	x	168,638
Operation of recycling facilities						
2006	4,913	1,795	17,222	7,599	x	171,351
2008	4,716	2,155	16,964	4,664	570	113,643
Operation of organics processing facilities						
2006	640	x	x	6,329	x	70,624
2008	208	511	x	5,701	x	71,045
Contributions to landfills post closure and maintenance fund ¹						
2006	..	..	..	..	..	..
2008	1,244	x	9,225	10,179	x	58,401
Other current expenditures						
2006	589	4,251	17,174	33,414	x	190,593
2008	x	1,851	x	36,485	x	265,139

1. Contributions to landfills post closure and maintenance fund were reported as other expenditures prior to 2008.

Note(s): Figures may not add up to totals due to rounding. Includes current expenditures directed towards waste management services.

Source(s): Statistics Canada, Environment Accounts and Statistics Division, CANSIM table 153-0045.

Introduction

The following information should be used to ensure a clear understanding of the underlying methodology of the *Waste Management Industry Survey* and of key aspects of the data quality. This information will provide a better understanding of the strengths and limitations of the data and of how they can be effectively used and analysed. The information may be of particular importance when making comparisons with data from other surveys or sources of information and in drawing conclusions regarding change over time.

Why is there a need for information on the waste management industry?

A general increase in environmental awareness has raised concerns over the impacts that our activities have on the environment. The waste produced by society can impact the environment in various ways. For example, the generation and disposal of waste may contribute to soil and water contamination, while methane gas that is not captured at landfills adds to the accumulation of greenhouse gases in the atmosphere.

In turn, statistics on volumes of waste can help measure the effectiveness of environmental practices and policies. Canadians have access to an ever increasing array of environmental information on a variety of issues, including waste. As environmental awareness increases, Canadians need reliable environmental statistics in order to make informed decisions regarding their own patterns of consumption. As well, waste statistics can be used by researchers and policy makers to analyze industry trends and implement appropriate policy mechanisms.

The waste management industry

The services provided by the waste management industry include the collection and transportation of waste and materials destined for recycling (including composting), the operation of non-hazardous and hazardous waste disposal facilities, the operation of transfer stations, the operation of recycling and composting facilities and the treatment of hazardous waste.

The Canadian waste management industry embodies two inter-related elements. Waste management services can be provided directly by a public body, such as a local government (for example, city, town, regional district) or a waste management board or commission whose purpose is to coordinate the provision of such services. For example, a number of local governments may agree to jointly administer a landfill or a recycling facility.

Private firms are the second source of waste management services. Local governments may enter into contracts with these firms to provide certain waste management services or the businesses may directly enter into such arrangements with clients other than local governments. For example, a region may contract out curb-side waste and/or recycling services to a company and this same company may enter into separate agreements with apartment complexes or industrial operations.

Local government and other waste management service providers

For the purposes of this report, local government in Canada includes all government and quasi-governmental entities below the provincial or territorial level. Within this broad category, administrative functions are divided among municipalities, special purpose boards and local school districts. A further distinction is made between upper and lower tier municipalities. In this report, for the purpose of simplicity, the term local government is used to denote any of the following public organizations:

Upper-tier municipalities are those encompassing one or more local government entities, such as metropolitan corporations, regional districts, regional municipalities and counties.

Lower-tier municipalities are typically those whose borders can lie within or outside the jurisdiction of another level of municipality. These lower tier municipalities can include cities, towns, villages, townships, rural municipalities, districts and counties, and some quasi-municipalities, including local government districts and local improvement districts.

Other public waste service providers can come in a variety of forms, but as a rule consist of a group of local municipalities (usually at the lower tier level) who collectively provide a waste management service. A group such as this will typically oversee the contracting out of a specific service or set of services (for example, the operation of a materials recycling facility) but sometimes will also provide a service themselves (for example, the operation of a landfill).

Defining waste and its components

Waste management activities take many different forms and involve many different participants. This presents challenges when trying to prepare an integrated picture of activities, including the total materials managed.

One common thread is that all the materials handled are unwanted by their producer. The unwanted materials may be by-products of a production process— for example, fly ash from a furnace. Alternatively they might be products, the inherent value of which has been consumed from the perspective of the current holder—for example, a newspaper that has been read or a package that has been opened and emptied of its contents.

Concepts and definitions in the waste management area have been evolving over the past several years. The most common source of difficulty is in classifying types of waste. Strategies to compile waste statistics reflect the specific needs of statistical and analytical projects: by type (municipal solid non-hazardous waste, hazardous waste); by generator or by generating activity (residential, industrial, commercial, institutional and construction and demolition projects) as well as by type of material. The differences in the terminology that the various respondents use can create many operational difficulties when surveys are in the field. (See Data quality, concepts and methodology — Definitions section). Progress is being made on both the national and international fronts toward the development and implementation of consistent classifications and measurement methodologies of waste management industry activities as well as the materials that this industry handles.

Overall approach: data sources and methodology

General methodology

This report presents the physical quantities, types and sources of waste and recyclable materials as well as financial and employment characteristics of the waste management industry. These estimates are based on the integration of two waste surveys conducted by Statistics Canada on a biennial basis: the *Waste Management Industry Survey: Business Sector* and the *Waste Management Industry Survey: Government Sector*. Essentially the same questions were asked for the waste and recyclable quantities and types sections of both surveys, however the financial sections differed somewhat.

To arrive at physical totals for the disposal and recycling sections, data from the two surveys were combined and duplicate entries were removed. These duplicates occur because operating arrangements of disposal and recycling activities can vary. Sites may be owned and operated by the same entity, but some sites may be owned by a government body and operated by a private firm. Since in some cases an owner of a facility may not have necessarily been the operator and the survey may have been completed by both the owner and the operator, care was taken to ensure that the information from each facility was only counted once. In these cases the information reported by the owner of the facility was typically used. However, in cases where there was a large difference in the information reported by the two respondents, further research was done to determine the reason for the discrepancy, and the appropriate response was used.

Not all of the population may have access to, or use, formal disposal or recycling facilities. In rural areas especially, arrangements can be made with a landowner to use property for the purpose of small-scale disposal sites (“dumps”). For this reason and others, a survey coverage population was developed using information provided by survey respondents as well as from other sources about the municipalities that were served by disposal and recycling facilities. Total populations were calculated for these municipalities using Statistics Canada data.¹ The difference between the total population and the covered population was calculated. A provincial per capita disposal figure was applied to this undercovered population, and this total was added to the survey total to arrive at an adjusted disposal figure. The undercovered portion of the population is small and has been decreasing with each iteration of the survey.

It is assumed that all Canadians produce waste and that this waste must be disposed of in some manner, thus requiring an adjusted disposal figure. However, the same adjustment was not made to the recycling figures. Unlike waste, which can be disposed of in a hole at the back of someone’s property, material to be recycled must be prepared and processed. While the smallest recycling depots may not be surveyed because they fall below the municipal population or business size thresholds for selection, the major material recovery facilities where this material is processed are covered by the survey. Therefore, most recycled material that falls within the conceptual parameters of this survey is captured and accounted for in the final estimate.

Reference period

The Waste Management Industry Surveys are biennial surveys. The information contained in this report reflects the total revenues, total operating and capital expenditures, total employment and waste quantities covering the financial year ending between April 1, 2008 and March 31, 2009.

1. Statistics Canada, CANSIM, table 051-0001, “Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual”.

Coverage

The classification of waste management services

The North American Industry Classification System (NAICS) is an industry classification system developed by the statistical agencies of Canada, Mexico and the United States. Created against the background of the North American Free Trade Agreement, it is designed to provide common definitions of the industrial structure of the three countries and a common statistical framework to facilitate the analysis of the three economies. NAICS is based on supply side or production oriented principles, to ensure that industrial data, classified to NAICS, is suitable for the analysis of production-related issues such as industrial performance.

Businesses falling into the following NAICS classifications are considered to be “in scope” for the *Waste Management Industry Survey: Business Sector*.

56211 Waste collection: This industry comprises establishments primarily engaged in collecting and hauling non-hazardous or hazardous waste within a local area. Establishments engaged in hazardous waste collection may be responsible for treating and packaging the waste for transport. Waste transfer stations are also included.

56221 Waste treatment and disposal: This industry comprises establishments primarily engaged in operating landfill sites, incinerators, or other treatment or disposal facilities for non-hazardous or hazardous waste. Establishments that integrate the collection, treatment and disposal of waste are also included.

56292 Material recovery facilities: This industry comprises establishments primarily engaged in operating facilities in which recyclable materials are removed from waste, or mixed recyclable materials are sorted into distinct categories and prepared for shipment.

56299 All other waste management services ^{CAN}: This Canadian industry comprises establishments, not classified to any other industry, primarily engaged in waste management activities.

Note that missing from this list of classifications is NAICS 56291, Remediation Services. While in the same NAICS grouping as the waste management industry, this industry is not included as it does not provide waste management services as defined by the Canadian Council of Ministers of the Environment.

Source(s): Statistics Canada, North American Industry Classification System (NAICS) 2002, www.statcan.ca/english/Subjects/Standard/naics/2002/naics02-index.htm.

Business sector

The 2008 *Waste Management Industry Survey: Business Sector* asked firms to report information on their waste management activities for each of their provincial and territorial operations. Businesses were selected based on the size of their workforce as well as the level of their total revenues. The threshold (based on revenue and employment levels) that was used to include or exclude a particular business from the survey mailout depended on the province or territory in which they operated. For example, surveyed businesses from Newfoundland and Labrador had a lower revenue and employment cut-off than those from Ontario.

The survey frame for the 2008 business survey was based on the 2006 survey supplemented and updated with information from the Statistics Canada Business Register (BR) and industry directories. Firms selected from the BR are a subset of the Waste Management and Remediation Services NAICS 562 (See text box “**The classification of waste management services**”). The combined list was cross-checked with other industry directories to avoid double-surveying of units.

For those firms not included in the survey because of their small size, administrative data on total operating revenues and total employment obtained from Tax Data Division and Statistics Canada’s Business Register were used to estimate their contribution to the industry.

Government sector

Local governments and other public waste management bodies were selected for the *Waste Management Industry Survey: Government Sector* on the basis of a municipal population threshold that varied by province and whether or not a disposal, recycling and/or composting facility operated within their jurisdiction.

The mailing list for the 2008 survey was based on past survey information and supplemented by information obtained from provincial sources.

Municipalities as well as regional waste management service boards in the province of Quebec were added to the survey frame for the 2008 survey. Estimates for financial and employment data for the local government sector as well as disposal data were taken from these surveys. In the past, municipalities in this province have been excluded from the survey as the information was obtained from provincial sources.

Variables measured

For the reference year 2008, respondents were asked to report the following information:

- specific types of waste management activities conducted by the respondent;
- total quantities of non-hazardous and hazardous waste managed in disposal facilities, recycled, composted, exported, and imported;
- sources of waste and recyclable and compostable material;
- total revenues realized from the sale of waste management services;
- total operating and capital expenditures; and
- total employment.

Data collection and processing

Data collection for both surveys took place during the spring, summer, and fall of 2009. Survey questionnaires were mailed to a total of 1,422 businesses and local governments. The responses were returned by mail. The questionnaires were addressed to a contact person who was either responsible for, or had knowledge of, the waste management operations of the survey unit.

For businesses that had operations in more than one province, a separate questionnaire was completed for each province in which the waste management business operated. For example, a business with operations in three provinces completed three questionnaires, each one describing the activities within a province. This was not a concern for the government sector.

Follow-ups by fax and/or telephone were carried out after the return due date to remind respondents to return their questionnaires.

Questionnaires were edited in two steps. First, validity edits were applied to ensure that responses to particular questions fell within a limited range of possible values. This type of editing was applied mostly to the questions on quantities but was also used to identify unusual values in the financial sections. A second step, consistency edits, was then undertaken. These identified occasions where the responses in one section of the questionnaire were logically inconsistent with those given in other sections.

Additional follow-up was carried out to collect missing data and to correct inconsistencies. The survey collection period was closed by early November 2009.

Government sector waste management

Many local governments use the services of private sector waste management firms. It was essential that both the questionnaire structure and particular wording enabled respondents to distinguish between services they provided with their own employees and those which they contracted out. In the processing phase it frequently became necessary to contact respondents to clarify the nature of these relationships.

In addition, groups of municipalities work together to provide waste management services for their residents. In many areas, different tiers of local governments exist and governments in each tier may be involved in aspects of waste service delivery. Many alternative forms of service delivery were identified, for example:

1. A regional government might serve an area within which there are a number of local municipalities.
2. The upper tier government might provide all of the waste services.
3. Only the lower tier municipalities might provide services.
4. Both tiers might provide different services (for example, one operates a disposal facility; the other tier provides waste collection services).
5. Both tiers could be providing the same services to different parts of the region (a lower tier might run a disposal facility for just their municipality with the regional government running a disposal facility for the remainder of the region).
6. Municipalities in one or both tiers could act co-operatively through a separate government agency such as a regional waste commission that both collects waste and runs the disposal facility.
7. None of the governments in an area could be doing any waste management, leaving provision of waste services strictly to private sector firms.
8. A combination of the above scenarios.

Examples of each of these situations exist in Canada and both the survey vehicle and processing system had to be able to deal with these possibilities.

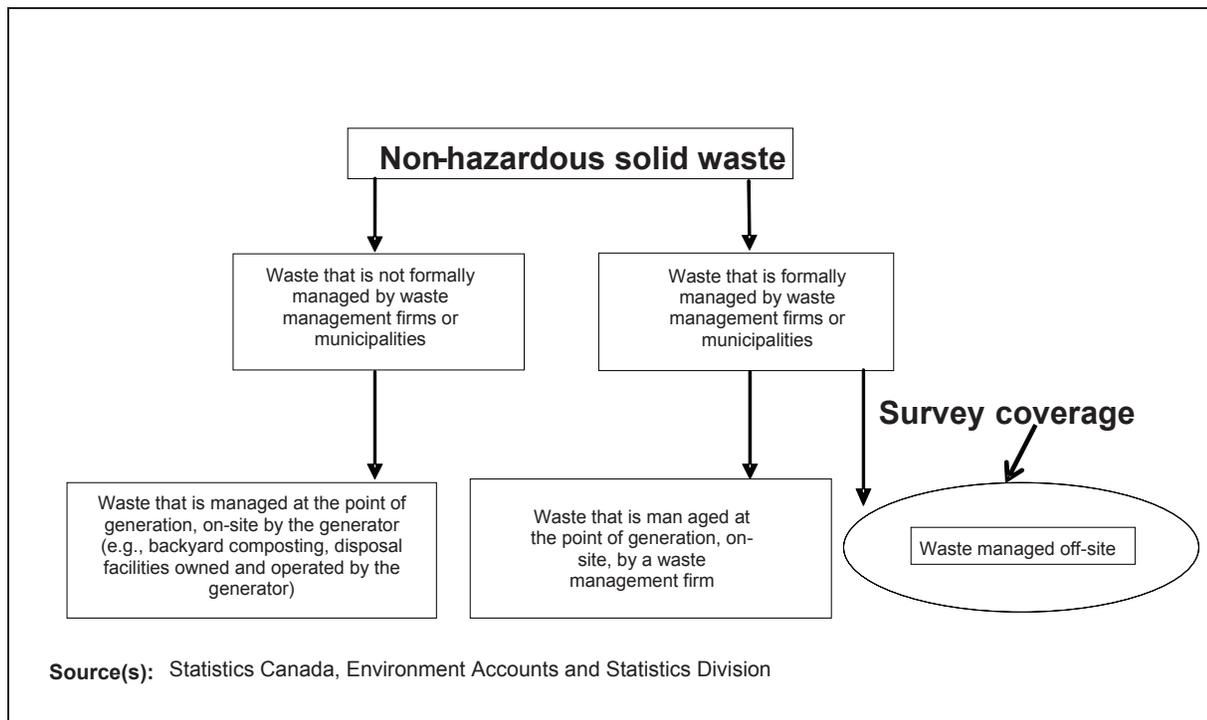
Extensive respondent follow-up was required in some cases. Returns for specific geographic areas were frequently processed together in order to build a clear picture of the service delivery area and to prevent either double counting or inadvertently missing pieces of information.

Evaluation of frame coverage

The estimates presented in this report refer only to waste and recyclable materials that have entered the managed waste stream; in other words, waste or recyclables that have been collected, processed or disposed of by a private waste management firm or local government organization. Therefore, waste or recyclables that are directly managed by the generator are not covered.

Figure 1

Waste management industry survey coverage



For example, waste created by a pulp and paper mill may be managed by the company on site or in another company-run facility without the assistance of separate service providers. As a result, these quantities would not be counted by either survey. Also, waste generators may manage some waste materials themselves. Many households and businesses have on-site composters that handle at least a portion of home and garden organic waste. While the amounts of compostable materials handled through central composting programs are included in the report, the on-site component is not. In addition, any unconventional methods of waste disposal, such as illegal dumping are not included in the survey coverage. (The above points are illustrated in Figure 1).

In-scope establishments

A total of 1,093 fully completed and partially completed in-scope questionnaires were returned for the 2008 survey cycle; 411 for the business sector and 682 for the government sector. For those questionnaires that were not returned, 155 were considered to be in-scope resulting in a combined total of 1,248 in-scope respondents for the two surveys.

Closures, mergers and acquisitions, out-of-scope establishments

Since the 2006 survey, some structural changes have occurred in the waste management industry. In the business sector, of the establishments surveyed, 7 went out of business and 3 mergers took place. Another 21 businesses that had provided waste management services in 2006 did not provide these services in 2008 and were determined to be out-of-scope for the purpose of this survey. Among the local governments surveyed, 11 municipalities amalgamated, becoming either a part of an existing municipality or forming a new municipality and another 2 were found to be out-of scope for the 2008 cycle.

Data accuracy

Many factors affect the accuracy of data produced in a survey. For example, respondents may have made errors in interpreting questions, answers may have been incorrectly entered on the questionnaires, and errors may have been introduced during the data capture or tabulation process. Every effort was made to reduce the occurrence of such errors in the survey. These efforts included: a complete verification of keyed data, validity and consistency edits, extensive follow-up with the large businesses, and consultation with selected government departments and industry associations.

Response burden

In order to track and thus make improvements to lessen the burden that these surveys impose on respondents, they were asked to indicate the amount of time spent completing the questionnaire. The mean average number of hours reported by the respondents was 3.0.

In general, errors such as incomplete coverage of the universe, incorrect classification of business or government activity and inconsistencies in working definitions can be reduced if the survey is repeated at regular intervals and with sufficient frequency. In this way, the mailing list may be well maintained and the respondents will be familiar with the definitions used and the type of information required.

Incomplete coverage of the industry universe occurs when a firm in the industry is overlooked. If the reason for not including the firm is that it has been incorrectly included in another industry, this is termed a classification error. Such errors have an impact upon estimates. However, these errors are less frequent now than in the past with the adoption of the NAICS classification system (See "Data quality, concepts and methodology — Overall approach: data sources and methodology section") and see text box ("**The classification of waste management services**").

Assessing data accuracy

One way to assess data accuracy is to compare it to the trends of other data collected. For example, comparing the waste statistics for 2008 with those for 2006, it is apparent that there has been substantial revenue growth in the Canadian waste management industry. On a per capita basis, more non-hazardous waste was diverted during 2008 than in 2006, but approximately the same amount of non-hazardous waste was disposed in 2008 and 2006. The increase seen in the diverted waste quantity estimates are reflected in the financial and employment estimates of the business and government sectors of the industry. Furthermore, business financial data from 2008 were compared to administrative data from Statistics Canada's Business Register. Recycling estimates were also compared and validated with those of the provincial governments of Nova Scotia and Ontario.

Response rates

The overall response rate for the 2008 waste management industry surveys, based on the ratio of the number of completed and partially completed questionnaires to the total number of in-scope questionnaires, was 79% for the business sector and 93% for the government sector.

Imputation rates

Although most businesses and local governments were very co-operative in answering the survey, some could not provide all the data required in the format in which it was requested. For example, facilities operating without a weigh scale had difficulties answering questions about the weights of material collected or disposed of. In cases where values were missing from survey cells or where the respondent did not complete a questionnaire even after extensive follow-up, information was imputed.

Data reliability

Imputation rates are an indicator of data reliability. Imputation is a term that refers to the proportion of data that were not obtained directly through a survey but rather came from an administrative source or was estimated using defensible and replicable methodologies.

Imputation is necessary to “complete” the data picture when there are non or missing responses to certain questions or sets of questions.

Business sector

Employment and financial data for small firms that were not surveyed, as well as in-scope firms that did not respond, were imputed. Administrative sources such as the Statistics Canada Business Register and tax records were used to fill in the missing values.

For large firms, the imputed values were compared with values from previous years and other sources, such as annual reports and security exchange filings to ensure that the quality of the imputed values was high.

The overall imputation rate for the business financial variables was 21%.

Government sector

Historical data was used to fill in missing financial and employment values for the government sector survey. However due to the high response rate (93%) for this survey, very few values were in need of imputation.

Waste disposal and recycling

Imputation for missing values in the disposal and recycling sections involved a different set of processes. As these two sections on both the business sector survey and the government sector survey were identical, the results from the two surveys were easily combined. This made it possible to remove duplicate data and to obtain a completed response from partial responses. For example, in the case where a local government owns a landfill but contracts out its operation, both the government body and the contracted business reported for the landfill, the duplicated data were removed so that the landfill was accounted for only once. Also, each of the two respondents may not have been able to report for all aspects of the facility, but by combining responses a completed record could be obtained. To illustrate, a firm may have omitted the total quantity of waste disposed to the landfill but the municipality may have reported that value.

In cases where there were missing cell values in the completed survey forms, many of these values were obtained through an intensive period of follow-up through email or telephone calls. Any remaining values were obtained from provincial and local government contacts, industry experts and publicly available sources, such as the Internet.

The tables presented in this report cover the data that were determined to be of sufficient quality for publication at a disaggregated level. Data confidentiality considerations as well as imputation rates play a role in this assessment. Data must be released at a level where the disclosure of the identity of any respondent in any cell is not possible. In addition, the levels of imputation must remain within reasonable limits.

Data limitations

Every effort has been made to ensure that the estimates presented in this report are of both high quality and reliability. However, it is important to understand the limitations of the data presented. This knowledge will allow readers to make informed decisions before conducting further research or analysis using these estimates.

Coverage

As discussed in Section “Data quality, concepts and methodology — Overall approach: data sources and methodology– **Evaluation of frame coverage**”, the estimates presented in this report refer only to that material entering the waste stream and do not cover any waste that may be managed on-site by a company or household. While the majority of residential waste is handled by municipalities or private businesses, and thus included in the survey coverage, it is believed that a significant quantity of non-residential waste is managed on-site by industrial generators. Also, much is transported by the generator directly to secondary processors such as pulp and paper mills, thereby bypassing entirely any firm or local government involved in waste management activities. Anecdotal evidence suggests that these practices are becoming increasingly common.

Agricultural waste is not covered by these surveys. This waste is typically managed on-site or by specialized firms that are not classified by NAICS as part of the waste management industry.

In addition, these data do not include materials that were processed for reuse and resale, (for example, wholesale of scrap metals or used clothing), nor those materials that are collected through deposit-return systems and therefore not processed at a material recovery facility.

Classification and measurement of waste flows

Improvements are constantly being sought with a view to standardize definitions of waste concepts and methods to calculate waste flows in Canada. While with each survey cycle improvements are made, some inconsistencies remain. For example, some jurisdictions consider the reuse of asphalt as recycling while other jurisdictions do not. Some include landfill cover materials in their quantity calculations and some do not.

In addition, various methods of waste measurement exist. Some facilities measure waste quantities by weight while other use volume and still others have no method of measurement. As reporting standards are agreed upon, Statistics Canada’s waste management surveys will be revised appropriately.

Comparability of data and related sources

Comparisons between data sources

As mentioned in the section on Data Accuracy, without a nationally standardized system of classification and measurement it is difficult to compare quantities of waste and recyclables between municipalities. Issues of confidentiality also impede these comparisons.

Quebec

In previous survey cycles, response burden has been reduced in the province of Quebec by using the results from a provincial survey administered by RECYC-QUÉBEC. Estimates for diversion have been routinely used in the statistical tables in this report. This arrangement is reviewed after each survey cycle in order to determine whether the data collected and published by RECYC-QUÉBEC are indeed comparable to those data collected through Statistics Canada surveys.

Comparisons over time

Data obtained from the 2008 survey are comparable with data from previous years for the following variables:

- Disposal data: comparable with 2002, 2004, and 2006. Some caution should be exercised when comparing disposal data prior to 2002 as exported wastes were not included in the estimates prior to 2002.
- Recycling data: comparable with 2000, 2002, 2004, and 2006.
- Business sector financial data: Most variables comparable with 1995, 1996, 1998, 2000, 2002, 2004, and 2006. Some variables have been added or dropped from cycle to cycle.
- Local government sector financial data: Most variables comparable with 1994, 1996, 1998, 2000, 2002, 2004, and 2006. Some variables have been added or dropped from cycle to cycle. For the first time in 2008, gross revenues include fees received from municipal levies. Consequently, the government revenues increased significantly from 2006 to 2008. Therefore, comparison of 2008 local government operating revenues with previous years is not recommended.
- Some of the data for the years and variables listed above have been revised and the user should consult the Environment Accounts and Statistics Division for the latest estimates.

Revisions

The on-going development of nationally consistent methodologies will aid making future year-to-year comparisons possible. Data for the most recent year are subject to revisions. The overall biennial rate of revision for the disposal and diversion quantity data at the national level has been less than 5% in each of the past three survey cycles. Higher rates sometimes occur at the province/territory level. Revisions to financial and employment data have been negligible.

Measurement issues

Waste diversion generally refers to material that has avoided disposal through a combination of processes and actions, and refers to activities that handle the waste in such a way that it is not disposed of in landfills or incinerators.¹ There are several points to consider when using these data.

First, the diversion figures include only materials that were processed for recycling at publicly or privately owned material recycling facilities. The data do not include materials that were processed and reused by a business or public body on site as part of its production process or as part of a secondary economic activity. Those materials never entered the non-hazardous waste stream and therefore are not considered to be waste for the purposes of this survey.

Second, it is acknowledged that data from a large portion of the “reuse” category are not included in these tables. For example, used clothing that is donated to a retailer and resold is excluded, as are used appliances that are refurbished and resold. Deposit-return materials, such as beer bottles, are considered to be “reuse” and are not included in these tables unless they have been processed at a material recovery facility.

Third, these data do not include those materials managed by wholesalers of scrap metal, plastics or paper. As with the other data in this report, these data cover only those firms whose primary source of income accrues from waste management activities and those public bodies that provide waste management services.

Fourth, the agricultural sector is largely excluded from these data. Waste and recyclable materials (for example, dead livestock, manure) from farms are generally managed on-site by the producer or managed by firms who specialize in the management of agricultural waste. Most of these businesses are not classified as part of the waste management industry as defined by the North American Industry Classification System (NAICS).

Fifth, contaminated soil that is used as landfill cover or some other beneficial purpose at a disposal facility (for example, the building of berms) is excluded from these data. Other high tonnage excluded materials that should be noted are asphalt from roadworks, as well as debris from land clearing operations (for example, soil, brush, stumps).

Sixth, it is recognized that a potentially large quantity of materials diverted from landfills may be collected under stewardship or “take it back” programs. Stewardship programs exist at the national and provincial and territorial level for items such as tires, electronics, beverage containers, batteries, paint, used oil, etc. Some of these materials may be included in data collected by the survey if the firms involved in the collection and/or processing of these materials fall under the waste management industry as defined by NAICS, or if a municipality involved in the collection of materials or administration of a program has reported these materials on their survey.

Finally, composting data include tonnages managed through centralized programs that are owned and operated by municipalities, waste management boards or commissions as well as those facilities that are privately owned and operated. Compost data excludes estimates for on-site composting programs such as backyard composting. In addition, data from on-site composting of industrial wastes or wastes from primary resource extraction (for example, forestry or fishing) may be excluded if their main business activity does not fall under the waste management industry as defined by NAICS.

1. GAP Team, June 15, 2000, Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste Flow. Toronto, p. 15.

Definitions

Composting

Composting is an aerobic biological treatment process used most frequently in Canada at this time for management of biodegradable residential waste, such as leaf and yard or food wastes.

Construction and demolition waste

Includes wastes generated by construction, renovation and demolition activities. It generally includes materials such as wood, drywall, certain metals, cardboard, doors, windows, wiring, etc. It excludes materials from land-clearing on areas not previously developed, as well as materials such as asphalt, concrete, bricks and clean sand or gravel.

Disposal facility

A facility at which waste is landfilled, incinerated, or treated for final disposal.

Diversion

Diversion represents the quantity of materials diverted from disposal facilities and represents the sum of all materials processed for recycling at an off-site recycling or composting facility.

Generation

Total generation is the sum of total non-hazardous residential and non-residential solid waste disposed of in an off-site disposal facility and the total materials processed for recycling at an off-site recycling facility.

Hazardous waste

Includes all materials designated as hazardous, due to their nature or quantity, and requiring special handling techniques as specified by legislation or regulation.

Incineration

Incineration, in the context of waste, refers to the burning of waste. Most jurisdictions in Canada consider incineration to be disposal.

Industrial, commercial and institutional waste

Industrial, commercial, and institutional (IC & I) waste is the waste generated by all non-residential sources in a municipality, and is excluded from the residential waste stream. This includes:

- industrial waste, which is generated by manufacturing, primary and secondary industries, and is managed off-site from the manufacturing operation, and is generally picked up under contract by the private sector;

- commercial waste is generated by commercial operations such as shopping centres, restaurants, offices, etc. Some commercial waste (from small street-front stores, etc.) may be picked up by the municipal collection system along with residential waste;
- institutional waste is generated by institutional facilities such as schools, hospitals, government facilities, seniors homes, universities, etc. This waste is generally picked up under contract with the private sector.

Non-residential waste

Includes municipal solid non-hazardous waste generated by industrial, commercial and institutional sources as well as waste generated by construction and demolition activities.

Recyclable material

Any material that has reached the end of its useful life in the form or purpose for which it was initially made and that can be recycled into a material that has value as a feedstock in another production process.

Recycling

Recycling is the process whereby a material (for example, glass, metal, plastic, paper) is diverted from the waste stream and remanufactured into a new product or is used as a raw material substitute.

Residential waste

Includes solid waste from residential sources (households), and includes waste that is picked up by the municipality (either using its own staff or through contracting firms), or residential waste that is taken by the generator to depots, transfer stations and disposal facilities.

Sanitary landfill

A landfill that, at a minimum, accepts only specified types of wastes and whose access is controlled (by a fence or staff, for example) in order to monitor the types and quantities of wastes being deposited. Often, it also includes landfills that have technologies in place to keep wastes and leachate from contaminating the groundwater. These can include systems that collect the leachate in order to treat and dispose of it.

Tipping fees

These are fees that are paid to the owner, lessor or operator of a landfill for the right to dispose of waste within that landfill. These fees can be assessed on a weight-based (for example, per tonne), volume-based (per cubic metre) or per item (fees that differ according to the type of material being disposed, such as white goods or tires) basis. Tipping fees are sometimes known as disposal fees.

Transfer facility

A facility at which wastes transported by vehicles involved in collection are transferred to other vehicles that will transport the wastes to a disposal or recycling facility.

Waste

There have been several definitions of waste proposed in recent years. One common thread among these definitions is the concept that waste is a material that is unwanted by its producer. The unwanted materials may be by-products of a production process - fly ash from a furnace, for example. Alternatively they might be products, the inherent value of which has been consumed from the perspective of the current holder. For example, a newspaper that has been read, a package that has been opened and emptied of its contents, or an apple eaten to the core, are all similar insofar as they have lost their original inherent value from the consumers perspective.

Waste for disposal

All materials not wanted by their generator and which are discarded for management at waste disposal facilities (excludes materials destined for recycling and composting).

Waste management industry

For the purposes of these surveys, the waste management industry broadly includes all firms and public bodies operating in Canada that provide the services of collection, transportation, diversion, treatment or disposal of waste or recyclable materials.

Waste Management Industry Survey: Business Sector, 2008

Confidential when completed.

Si vous préférez ce questionnaire en français, veuillez nous appeler au numéro sans frais : 1-888-659-8229.

Collected under authority of *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S19.

Correct as required:

Legal name									
Operating name									
C/O									
Address									
City									
Province/Territory					Postal Code				

Please read before completing

PURPOSE OF SURVEY

This survey collects information that will help Canadians understand the contributions made by the waste management industry to Canada's economy and environment. The results will assist businesses in the industry as well as public policy makers to make sound decisions based on data that apply specifically to the waste management industry. **Statistics Canada is also conducting a survey of government sector waste management for 2008.** Together these surveys will provide a comprehensive picture of waste management in Canada.

CONFIDENTIALITY

Statistics Canada is **prohibited by law** from publishing any statistics which would divulge information obtained from this survey that relates to any identifiable respondent, without their previous written consent. The data reported will be treated in strict confidence and used for statistical purposes only. The confidentiality provisions of the *Statistics Act* are not affected by either the *Access to Information Act* or any other legislation.

AUTHORITY

This survey is conducted under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S19. **COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THE STATISTICS ACT.**

INQUIRIES

If you require assistance in completing this questionnaire or if you have any questions or comments regarding this survey, please contact:

Operations and Integration Division

Statistics Canada

Ottawa, Ontario K1A 0T6

Telephone (toll-free): **1-888-659-8229**

Fax: **1-800-755-5514**

E-mail: enviro-waste-bus@statcan.gc.ca

In all correspondence concerning this questionnaire, please quote the identification number that appears on the address label.

HOW TO COMPLETE THIS QUESTIONNAIRE

Use a black or blue pen

Fill in a circle OR Enter a number in a box

OR Print in a box

IMPORTANT:

Please refer to the definitions at the back of the questionnaire before answering. If your response for an item is zero, please write "0" in the corresponding box rather than leaving the cell blank. Where a response in dollars is requested, please answer in Canadian Dollars.

Please return this questionnaire within 30 days of receipt.

If you are unable to do so, kindly inform Operations and Integration Division of the expected completion date.

Statistics Canada use only

Rec.		
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Coll.

FSC

Section 1 - Business Information

Business type

1.1 This questionnaire should be completed for this company's operation in one province/territory only. If this company provides waste management services in more than one province/territory, a separate report for the other provinces/territories in which this company operates should be filled out. You may wish to photocopy this questionnaire or you may call us toll-free at 1-888-659-8229 to request additional questionnaires.

Province/territory for which this report applies:

101

1.2 Did this company provide waste management services in more than one province/territory in 2008?

102 Yes ▶ *Go to question 1.3* No ▶ *Go to question 1.4*

1.3 Please indicate the other provinces/territories in which this company provides waste management services and for which you will be returning reports. Mark all that apply.

121 N. L. 123 N. S. 125 Que. 127 Man. 129 Alta. 131 Y. T. 133 Nvt.
122 P. E. I. 124 N. B. 126 Ont. 128 Sask. 130 B. C. 132 N. W. T.

1.4 Please indicate which of the following waste management activities and/or services this company provides in the province/territory indicated in question 1.1. See definitions at the back of this questionnaire. Mark all that apply.

Non-hazardous waste (garbage), recyclables and organics

- 105 Waste collection, residential
- 106 Waste collection, non-residential (IC&I and C&D)
- 134 Waste hauling or transportation
- 108 Recyclable material collection/organic material collection, residential
- 109 Recyclable material collection/organic material collection, non-residential
- 112 Recycling/organic processing services (e.g., material recycling facility, composting facility)
- 110 Waste transfer station
- 114 Waste disposal/processing facility
- 135 Other non-hazardous waste services (*please specify*) ¹³⁶

Hazardous waste

- 107 Waste collection
- 111 Waste transfer facility
- 113 Waste treatment
- 137 Waste recycling
- 115 Waste disposal facility
- 138 Other hazardous waste services (*please specify*) ¹³⁹

Other waste management activities or services

- 116 Sewage treatment and containment
- 117 Other (*please specify*) ¹¹⁸

Reporting period

1.5 Financial information should be reported for this company's most recent fiscal year that ended at any time between April 1, 2008 and March 31, 2009.

Specify company's fiscal year Start: ¹¹⁹ Year Month Day End: ¹²⁰ Year Month Day

Section 2 - Collection/transportation of non-hazardous waste (garbage), recyclables, and organic material

For businesses engaged in only hazardous waste management activities/services, please proceed to Section 6: Financial and employment information.

Collection/transportation of non-hazardous waste (garbage)

2.1 In 2008, did this company provide or sub-contract services for the collection and/or transportation of non-hazardous waste to a landfill, incinerator / energy from waste facility, residual waste processor or a transfer station?

²⁰¹ Yes ▶ Go to question 2.2 No ▶ Go to question 2.3

2.2 Please specify the name(s) of the facility(ies) where waste was taken. Include only final destinations such as landfills, incinerators / energy from waste facilities, residual waste processors, etc. Do not specify transfer stations unless it is the final destination for waste collected/transported by this company.

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Collection/transportation of non-hazardous recyclable materials

2.3 In 2008, did this company collect/transport non-hazardous recyclable materials?

²¹² Yes ▶ Go to question 2.4 No ▶ Go to question 2.5

2.4 Please specify the name(s) of the facility(ies) where the recyclable materials were taken.

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Collection/transportation of organic materials

2.5 In 2008, did this company collect/transport organic materials for processing (e.g., composting, anaerobic digestion)?

246 Yes ▶ Go to question 2.6 No ▶ Go to section 3

2.6 Please specify the name(s) of the facility(ies) where the organic materials were processed.

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Section 3 - Waste diversion: Organic material processing and recycling

Organic material processing (composting, anaerobic digestion)

3.1 In 2008, did this company own and/or operate a facility where organic materials were processed?

Please include landfills or sites where organic materials were composted.

327 Yes ▶ Please complete the following. No ▶ Go to question 3.3

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 367

Please include all quantities of food waste, materials from source separated organics programs (SSO), leaf and yard waste as well as Christmas trees and pumpkins.

Name and owner of facility	Year opened	Quantity of materials entering the facility <i>(metric tonnes)</i>	Sources of materials <i>(percentage)</i> <i>(Please see definitions at the back of this questionnaire)</i>			Material disposed as processing residue (e.g., contaminated materials) <i>(%)</i>
			Residential <i>(%)</i>	Non-residential (IC&I and C&D) <i>(%)</i>	Totals should equal 100%	
329	331	332	368	369	100%	371
336	338	339	372	373	100%	375
343	345	346	376	377	100%	379
Total ▶		364				

3.2 Please indicate the quantity of each type of organic material processed at the facility(ies) listed in question 3.1.

Type of material	Quantity of organic materials (metric tonnes)	Type of material	Quantity of organic materials (metric tonnes)
Leaf & yard waste ▶	¹⁸³ 	Biosolids ▶	¹⁸⁵ 
Food waste / SSO materials ▶	¹⁸⁴ 	Other (please specify) ¹⁸⁶ <input type="text"/>	¹⁸⁹ 
Forestry waste / Wood waste ▶	¹⁸⁷ 	Other (please specify) ¹⁹⁰ <input type="text"/>	¹⁹¹ 
Agricultural waste ▶	¹⁸⁸ 	Other (please specify) ¹⁹⁴ <input type="text"/>	¹⁹² 

Recycling

3.3 In 2008, did this company own and/or operate a material recycling facility (MRF), recycling centre or drop-off depot (municipally or privately owned) where materials were prepared/collected for recycling?

³⁸⁵ Yes ▶ Go to question 3.4

No ▶ Go to section 4

3.4 Please complete the following.

Name and owner of facility	Sources of materials (percentage) <i>(Please see definitions at the back of this questionnaire)</i>				Material disposed as processing residue (e.g., contaminated materials) (%)
	Residential (%)	Non-residential (IC&I) (%)	Construction and demolition (C&D) (%)	Totals should equal 100%	
²²⁵ <input type="text"/> <input type="text"/>	²²⁸ 	²²⁹ 	²³⁰ 	100%	³⁸⁶ 
²³² <input type="text"/> <input type="text"/>	²³⁵ 	²³⁶ 	²³⁷ 	100%	³⁸⁷ 
²³⁹ <input type="text"/> <input type="text"/>	²⁴² 	²⁴³ 	²⁴⁴ 	100%	³⁸⁸ 

Please list additional facilities in the Comments Section (Section 7).

3.5 Please indicate the quantities of materials marketed from the facilities indicated in 3.4. Only count quantities once. Exclude organic materials reported in question 3.1.

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 389

Type of material	Quantity of materials marketed (metric tonnes)	Type of material	Quantity of materials marketed (metric tonnes)
Newspprint, phone books, magazines ▶	314 <input type="text"/>	Plastic – PET (1)  ▶	391 <input type="text"/>
Corrugated cardboard ▶	315 <input type="text"/>	Plastic – HDPE (2)  ▶	392 <input type="text"/>
Mixed paper fibre and boxboard ▶	316 <input type="text"/>	All other plastic (3-7)  ▶	393 <input type="text"/>
Glass ▶	317 <input type="text"/>	Mixed plastics ▶	323 <input type="text"/>
Ferrous metals (including ferrous scrap metal) ▶	318 <input type="text"/>	Aseptic containers / tetra packs ▶	398 <input type="text"/>
White goods ▶	395 <input type="text"/>	Gable top containers (e.g., milk cartons) ▶	399 <input type="text"/>
Aluminum ▶	394 <input type="text"/>	Electronics ▶	396 <input type="text"/>
Copper ▶	390 <input type="text"/>	Tires ▶	397 <input type="text"/>
Mixed metals (ferrous and non-ferrous) ▶	322 <input type="text"/>	C & D materials (Please exclude asphalt, concrete, rubble and land clearing debris) ▶	324 <input type="text"/>
Other (Please specify) ³⁶⁶ <input type="text"/> ▶			325 <input type="text"/>
Total materials marketed ▶			326 <input type="text"/>

Section 4 - Management of non-hazardous waste (garbage)

Transfer Stations

4.1 In 2008 did this company own and/or operate a transfer station for non-hazardous waste?

⁵⁰¹ Yes ▶ Go to question 4.2

No ▶ Go to question 4.3

4.2 For each transfer station operated in this province/territory in 2008, please indicate the name, owner and provide your best estimate of the sources of waste and the total quantity of the waste managed through the transfer station.

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



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Name and location of transfer station	Owner of this facility if not self	Approximate percentage of total waste managed through the facility, by source			Weigh scale present? <i>If yes, fill in circle</i>	Quantity of waste managed through the transfer station <i>(metric tonnes)</i>
		Residential	Non-residential (IC&I)	Construction and demolition (C&D)		
503 <input type="text"/> <input type="text"/>	504 <input type="text"/> <input type="text"/>	505 <input type="text"/>	506 <input type="text"/>	507 <input type="text"/>	508 <input type="radio"/>	509 <input type="text"/>
510 <input type="text"/> <input type="text"/>	511 <input type="text"/> <input type="text"/>	512 <input type="text"/>	513 <input type="text"/>	514 <input type="text"/>	515 <input type="radio"/>	516 <input type="text"/>
517 <input type="text"/> <input type="text"/>	518 <input type="text"/> <input type="text"/>	519 <input type="text"/>	520 <input type="text"/>	521 <input type="text"/>	522 <input type="radio"/>	523 <input type="text"/>
524 <input type="text"/> <input type="text"/>	525 <input type="text"/> <input type="text"/>	526 <input type="text"/>	527 <input type="text"/>	528 <input type="text"/>	529 <input type="radio"/>	530 <input type="text"/>
531 <input type="text"/> <input type="text"/>	532 <input type="text"/> <input type="text"/>	533 <input type="text"/>	534 <input type="text"/>	535 <input type="text"/>	536 <input type="radio"/>	537 <input type="text"/>
538 <input type="text"/> <input type="text"/>	539 <input type="text"/> <input type="text"/>	540 <input type="text"/>	541 <input type="text"/>	542 <input type="text"/>	543 <input type="radio"/>	544 <input type="text"/>
Total waste managed through transfer stations ▶						545 <input type="text"/>

Waste (garbage) disposal or processing

4.3 Did this company own and/or operate a facility where waste was disposed/processed in 2008? *Include all types of landfills (e.g., sanitary, stabilized, bioreactor), incineration/thermal treatment (e.g., energy from waste, gasification) and residual waste processing (e.g., conversion of non-recyclable waste to an alternative fuel source).*

401 Yes ▶ Go to question 4.4

No ▶ Go to section 5

4.4 For each facility that this company operated in the province/territory in 2008, indicate the name, type of facility and the sources and amount of waste disposed/processed in the facility as measured by weigh scales or by providing your best estimate. *Please see definitions at the back of this questionnaire.*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 477

Name of facility	Owner of this facility if not self	Please indicate type of facility as Landfill (LF), Processor (P) or Incinerator (IN), (fill in one only)	Approximate percentage of total waste disposed/processed, by source			Weigh scale present? <i>If yes, fill in circle</i>	Quantity of waste disposed/processed in the facility in 2008 <i>(metric tonnes)</i>
			Residential	Non-residential (C&I)	Construction and demolition (C&D)		
403	404	405	407	408	409	410	411
412	413	414	416	417	418	419	420
421	422	423	425	426	427	428	429
430	431	432	434	435	436	437	438
439	440	441	443	444	445	446	447
448	449	450	452	453	454	455	456
457	458	459	461	462	463	464	465
466	467	468	470	471	472	473	474
Total waste disposed/processed in facilities ▶							475

Section 5 - Exports and imports of non-hazardous materials

Exports and imports of waste (garbage) for disposal/processing

5.1 Did this company transport/export non-hazardous waste for disposal/processing to another province/territory or to the U.S.A. in 2008? *Include direct shipments and shipments from transfer stations.*

⁶⁰¹ Yes ▶ *Please complete the following.* No ▶ *Go to question 5.2*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



⁶⁵⁵

Name and owner of facility	Location/Address	Quantity of waste sent to another province/territory <i>(metric tonnes)</i>	Quantity of waste sent to the U.S.A <i>(metric tonnes)</i>
⁶¹⁵ <input type="text"/>	⁶¹⁶ <input type="text"/>	⁶¹⁷ <input type="text"/>	⁶¹⁸ <input type="text"/>
⁶¹⁹ <input type="text"/>	⁶²⁰ <input type="text"/>	⁶²¹ <input type="text"/>	⁶²² <input type="text"/>
⁶²³ <input type="text"/>	⁶²⁴ <input type="text"/>	⁶²⁵ <input type="text"/>	⁶²⁶ <input type="text"/>
Total waste exported for disposal/processing ▶		⁶⁰⁷ <input type="text"/>	⁶¹⁰ <input type="text"/>

5.2 Was non-hazardous waste from outside this province/territory disposed/processed in this company's facility (e.g., landfill, incinerator/energy from waste, or residual waste processing facility) in this province/territory in 2008?

⁶⁴⁶ Yes ▶ *Please complete the following.* No ▶ *Go to section 5.3*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



⁶⁴⁷

	Quantity of waste from other provinces/territories <i>(metric tonnes)</i>	Quantity of waste from the U.S.A. <i>(metric tonnes)</i>
Total waste imported for disposal/processing ▶	⁶⁵¹ <input type="text"/>	⁶⁵³ <input type="text"/>

Exports and imports of recyclable materials and organic materials

5.3 Did this company transport/export recyclable materials to a material recycling facility (MRF) outside of this province/territory in 2008? Do not include exports of recyclable materials to end markets in other provinces or the U.S.A. Report organic material exports in question 5.4.

⁶⁵⁶ Yes ▶ Please complete the following. No ▶ Go to question 5.4

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



⁶⁵⁷

Name and owner of facility	Location/Address	Quantity of recyclables exported to another province/territory (metric tonnes)	Quantity of recyclables exported to the U.S.A. (metric tonnes)
⁶⁵⁸ <input type="text"/> <input type="text"/>	⁶⁵⁹ <input type="text"/> <input type="text"/>	⁶⁶⁰ <input type="text"/> <input type="text"/>	⁶⁶¹ <input type="text"/> <input type="text"/>
⁶⁶² <input type="text"/> <input type="text"/>	⁶⁶³ <input type="text"/> <input type="text"/>	⁶⁶⁴ <input type="text"/> <input type="text"/>	⁶⁶⁵ <input type="text"/> <input type="text"/>
Total recyclable materials exported ▶		⁶⁶⁶ <input type="text"/> <input type="text"/>	⁶⁶⁷ <input type="text"/> <input type="text"/>

5.4 Did this company transport/export organic materials for processing (e.g., composting, anaerobic digestion) to a facility outside of this province/territory in 2008?

⁶⁶⁸ Yes ▶ Please complete the following. No ▶ Go to question 5.5

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



⁶⁶⁹

Name and owner of facility	Location/Address	Quantity of organics processed in another province/territory (metric tonnes)	Quantity of organics processed in the U.S.A. (metric tonnes)
⁶⁷⁰ <input type="text"/> <input type="text"/>	⁶⁷¹ <input type="text"/> <input type="text"/>	⁶⁷² <input type="text"/> <input type="text"/>	⁶⁷³ <input type="text"/> <input type="text"/>
⁶⁷⁴ <input type="text"/> <input type="text"/>	⁶⁷⁵ <input type="text"/> <input type="text"/>	⁶⁷⁶ <input type="text"/> <input type="text"/>	⁶⁷⁷ <input type="text"/> <input type="text"/>
Total organic materials exported ▶		⁶⁸⁰ <input type="text"/> <input type="text"/>	⁶⁸¹ <input type="text"/> <input type="text"/>

5.5 Were recyclable materials and/or organic materials from outside this province/territory processed at this company's MRF or composting/anaerobic digestion facility in 2008?

683 Yes ▶ Please complete the following. No ▶ Go to section 6

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 684

	Quantity of recyclables from other provinces/territories (metric tonnes)	Quantity of recyclables from the U.S.A. (metric tonnes)	Quantity of organic materials from other provinces/territories (metric tonnes)	Quantity of organic materials from the U.S.A. (metric tonnes)
Total materials imported ▶	685 <input type="text"/>	686 <input type="text"/>	687 <input type="text"/>	688 <input type="text"/>

Section 6

Financial and employment information

6.1 Gross Operating Revenues. Indicate this company's 2008 gross revenues (to the nearest dollar) from the provision of waste management services. Do not net out expenditures.

Total revenues ▶ ⁸¹¹ \$

6.2 Please indicate the percentage of total gross revenues (reported in question 6.1) received from the provision of each of the following.

	Percentage
Collection of waste, recyclables, organics ▶	801 <input type="text"/>
Operation of a non-hazardous waste transfer facility, landfill, incinerator, processing facility ▶	805 <input type="text"/>
Operation of a MRF or organic processing facility/site ▶	804 <input type="text"/>
Operation of hazardous waste facilities (treatment, transfer, containment, recycling, incineration or disposal facility) ▶	806 <input type="text"/>
Sewage treatment/containment ▶	807 <input type="text"/>
Other waste management revenues (e.g., consulting, brokerage fees) ⁸³⁴ Please specify: <input type="text"/> ▶	808 <input type="text"/>
Sale of recovered materials ▶	809 <input type="text"/>
Other non-waste management revenues ⁸³⁵ Please specify: <input type="text"/> ▶	810 <input type="text"/>
Total should equal ▶	100%

6.3 Gross Operating Expenditures. Please report this company's 2008 gross operating expenses (to the nearest dollar). Include expenses reported in question 4.6 if applicable (post closure and maintenance fund).

Total operating expenditures ▶ ⁸²³ \$

6.4 Capital Expenditures. Report this company's total capital expenditures for 2008. Include any new (non-amortized) capital expenditures, new assets purchased in Canada and all imported assets (new and used).

Total capital expenditures ▶ ⁸³⁰ \$

6.5 Employment. Report the average number of full time (30 or more hours per week) and average number of part time (less than 30 hours per week) employees whose primary function is working on the waste management activities of this company in 2008. Do not specify full-time equivalents for part-time employees. Do not include contract employees or sub-contractor's employees.

		Average number of employees in 2008	
		Full-time	Part-time
Total employees ▶	⁸³²	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	⁸³³ <input type="text"/> <input type="text"/> <input type="text"/>

Section 7

Certification

7.1 I certify that the information contained in this report is correct and complete to the best of my knowledge.

Signature

Date

⁰⁰¹⁵ Year Month Day

Name of person completing this report

⁰⁰¹³

Telephone

⁰⁰¹⁷

Extension

⁰⁰²⁷

Title of person completing this report

⁰⁰¹⁴

Fax

⁰⁰¹⁶

E-mail address

⁰⁰¹⁸

Website address

⁰⁰²⁰

7.2 Approximately how much time was spent filling out this survey and calculating the figures required?

⁹⁰¹ Hours

Introduction

Waste statistics are important sets of information used to determine public policy and environmental practices. The Environment Accounts and Statistics Division of Statistics Canada plays a significant role in developing environmental statistics for Canada. One of the Division's objectives is to develop a complete set of statistics on the physical and financial dimensions of the management of waste.

What is waste?

There have been several definitions of waste proposed in recent years. One common thread among these definitions is the concept that waste is a material that is unwanted by its producer. The unwanted materials may be by-products of a production process – fly ash from a furnace, for example. Alternatively they might be products, the inherent value of which has been consumed from the perspective of the current holder – for example, a newspaper that has been read, a package that has been opened and emptied of its contents or an apple eaten to the core are all similar insofar as they have lost their original inherent value from the consumers perspective.

If these materials lose this inherent value to such a degree that permanent disposal is the most viable option or perhaps the only available option, then a waste services provider acts as an agent that relieves the generator of the waste of the burden of disposal.

However, the material may have value from the perspective of someone else – the newspaper can be used as an input at a pulp and paper plant or the apple can be used by a composting facility – thus a waste services provider may divert such a material from the waste stream. Value is reintroduced to the material through a process that treats the material in such a way as to enable it to be reintroduced back into the market place as a valuable good. For example, the newspaper may be collected and taken to a Material Recycling Facility (MRF) where it is sorted from other items, bundled and compacted – thus preparing it in such a fashion that it is marketable (valuable) to a buyer such as a pulp and paper mill.

What is the waste management industry?

The Canadian waste management industry embodies two inter-related elements – governments and other public organisations that provide or make provision for waste management services and private firms that supply these

services. To supply the information needed to depict these two elements, two survey vehicles are utilised. One is the Waste Management Industry: Business Sector Survey and the other is the Waste Management Industry: Government Sector Survey. Both of these surveys gather financial and human resource (e.g., revenues, expenditures, employment) and physical information (e.g., quantities of different types of waste disposed of or recycled) about the waste management industry.

For the purposes of these surveys, the waste management industry broadly includes all firms and public bodies operating in Canada that provide the services of collection, transportation, diversion, treatment or disposal of waste or recyclable materials. The majority of the establishment's revenue will come from provision of these services. To further define these broad activities:

- » Waste, recyclable and organic materials collection methods are curbside collection, back door pick-ups, and automated collection. The waste, recyclable or organic materials may be taken to an intermediate site or to a final disposal site.
- » Waste diversion includes any physical transformation of materials in preparation for recycling or reuse. Such activities include sorting, cleaning, and volume reduction as well as composting and anaerobic digestion.
- » Waste disposal facilities include landfills and incinerators/energy from waste facilities

Please exclude:

- » Wastes that are associated with primary resource extraction or harvesting (e.g. farm manure, fish waste from fish processing, market garden waste, orchard and urban forest tree prunings, mine or mill tailings, forest industry waste)
- » Conventional air pollutants
- » Liquid effluents from processing or manufacturing sites
- » Any materials used as landfill cover

- » Clean or contaminated soil including soil used as landfill cover
- » Industrial sludge
- » Gravel and rocks
- » By-products generically referred to as nuclear wastes
- » Oil field waste
- » Waste from portable toilets

This is consistent with the definition of waste used by the Canadian Council of Ministers of the Environment.

Estimating sources of waste (garbage), recyclables and organic materials

It is acknowledged that it is often very difficult to track the quantities of waste and recyclable materials by source unless the business or local government collects or prepares materials from only one source (e.g., a firm that collects waste

only from IC&I sources).

In this survey, you are being asked to estimate the proportion of materials by source of material at three points (if applicable and known) at the facility where organic material is processed, at the facility where recyclables are prepared and at disposal. If you engage in one or more of these activities, you will be asked to estimate the proportion of waste, recyclable or organic materials from residential, non-residential and construction and demolition sources. While it is recognized that such estimates may be difficult to make, you are asked to be as accurate as possible.

Definitions

Agricultural waste

All waste materials produced as a result of agricultural activities, including, for example, residues from the application of pesticides, herbicides, fertilizers and other chemicals, wastewater, manure, bedding material, etc.

Anaerobic digestion

A series of processes in which microorganisms break down biodegradable material in the absence of oxygen.

Bioreactor landfill

A landfill where water and air are circulated into a specifically designed landfill in order to cause accelerated biological decomposition of waste material.

Biosolids

Includes solid or semisolid material obtained from treated wastewater.

Bottom ash

The residue ash that remains after the incineration of a waste material.

Clean fill

Uncontaminated inert solid material including soil, rock, stone, dredged material, used asphalt, and brick, block or concrete. The soil is considered 'clean' because it has not been contaminated or affected, for example by a spill or release of toxic materials.

Composting

Composting is an aerobic biological treatment process used most frequently in Canada at this time for management of biodegradable waste such as leaf and yard waste or food wastes. See also anaerobic digestion.

Construction and demolition waste (C&D)

C&D waste, also referred to as DLC (demolition, landclearing and construction waste), refers to waste generated by construction and demolition activities. It generally includes materials such as brick, painted wood, drywall, metal, cardboard, doors, windows, wiring, etc. It excludes materials from land clearing on areas not previously developed. C&D waste can come from residential sources such as house renovations or from non-residential sources for example the construction or demolition of office buildings.

Contaminated soil

Soils containing materials that, by their nature, require controlled disposal.

Electronics

Electronics are items that function through the use of electricity and/or batteries. Also included are items that have a circuit board but do not necessarily require electricity from an outlet such as telecommunication equipment. Examples are personal computers, laptops, monitors, peripherals (e.g. printers, scanners), telephones, cell phones, facsimile machines, stereos, portable music players and children's toys containing electronic components.

Energy from waste (EFW)

EFW refers to any waste treatment that creates energy in the form of electricity or heat from a waste source. Most EFW processes produce electricity directly through combustion, or produce a combustible fuel commodity, such as methane, methanol, ethanol or synthetic fuels.

Ferrous metals

These are metals which contain iron. They may have small amounts of other metals or other elements added, to give the required properties. All ferrous metals are magnetic and give little resistance to corrosion. Steel is an example of a ferrous metal. The recycling of ferrous metals include but is not limited to the processing of tin/steel cans, strapping, as well as the extraction of metals from appliances.

Food waste

Includes food wastes and food scraps from households and non-residential sources such as grocery stores, restaurants, etc, destined for composting or anaerobic digestion.

Forestry waste

The debris or leftover waste from the management of forests. This would include trees, stumps, branches, etc., that were discarded.

Gasification

A process, in the context of waste, that uses heat, pressure and steam to convert materials directly into a combustible gas.

Hazardous waste

Includes materials or substances that given their corrosive, inflammable, infectious, reactive and toxic characteristics,

may present a real or potential harm to human health or the environment. Due to their hazardous nature they require special handling, storing, transportation, treatment and disposal as specified by the Transportation of Dangerous Goods Regulations (1985), The Canadian Environmental Protection Act (1988), The Basel Convention (1989), or the Export and Import of Hazardous Waste Regulations (1992).

Hazardous waste disposal

Disposal of hazardous waste at a facility that meets legal standards for the disposal of hazardous waste (e.g., by incineration, controlled confinement, landfilling and other methods).

Hazardous waste recycling

The recycling of hazardous wastes involves the treatment or processing of these wastes in order to reduce or transform them into a new or reuseable product or material that can in turn be used as an input into another production process.

Hazardous waste transfer facility or station

Consolidation, temporary storage, and preparation for transport of hazardous waste to an appropriate facility for treatment, disposal, or reuse. Includes drop-off center services, transfer and container stations.

Hazardous waste treatment

Treatment to reduce, eliminate, or transform hazardous waste. Processes include biological, chemical, and/or physical procedures; such processes may lead to disposal and/or to the recovery of recyclable material. Treatment services exclude incineration.

Household hazardous/special waste (HHW)

Materials generated by residential households that can not be collected in standard residential recycling programs and present a risk to municipal waste management systems because of their hazardous and/or toxic nature. This includes solid or liquid materials, or containers holding gases which have outlived their usefulness. This waste may be flammable, corrosive, explosive or toxic and therefore should not be disposed in landfills or sewage systems.

Incineration / thermal treatment

Incineration, in the context of waste, refers to the burning of waste. Incineration of waste materials converts the waste into incinerator bottom ash, flue gases, particulates, and heat, which can in turn be used to generate electric power. Most jurisdictions in Canada consider incineration to be disposal.

Industrial, commercial and institutional waste (IC&I, non-residential)

IC&I Waste (industrial, Commercial, and Institutional) is the waste generated by all non-residential sources in a municipality, and is excluded from the residential waste stream. This includes:

- » Industrial waste, which is generated by manufacturing, and primary and secondary industries, and is managed off-site from the manufacturing operation, and is generally picked up under contract by the private sector;
- » Commercial waste is generated by commercial operations such as shopping centres, offices, etc. Some commercial waste (from small street-front stores, etc.) may be picked up by the municipal collection system along with the residential waste;
- » Institutional waste is generated by institutional facilities such as schools, hospitals, government facilities, senior homes, universities, etc. This waste is generally picked up under contract with the private sector.

Landfill

A site, on land, that is used primarily for the disposal of waste materials. The contents of landfills can include garbage which is not processed, and also residual material from processing operations (MRF residues, incinerators ash, organic processing residues, etc).

Leaf and yard waste

Includes any waste collected from a yard or garden such as leaves, grass clippings, plants, tree trimmings and branches.

Material Recycling Facility (MRF)

A facility where materials that are collected for recycling are prepared or processed. The preparation or processing can include sorting, baling, cleaning, crushing, volume reduction and storing until shipment.

Metric tonne

A measure of weight equal to 1,000 kilograms or 2,204 pounds.

Non-hazardous waste (garbage)

Included in this category are materials, products or by-products for which the waste generator has no further use and which are received for disposal at waste disposal facilities or for processing at a waste processing facility.

Organic materials

Materials that are or were once living, such as leaves, grass, yard trimmings, agricultural crop residues, wood waste, and paper and paperboard products or food scraps.

Organic processing services

The breakdown of organic materials through either composting or anaerobic digestion processes.

Organic material collection, non-residential

Collection of organic material, (e.g., food scraps, leaves, grass, wood waste and paper products), from sources such as heavy and light industry, manufacturing, agriculture, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities.

Organic material collection, residential

Collection of organic material, (e.g., food scraps, leaves, grass, yard trimmings), from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection.

Plastic – PET (1)

Polyethylene Terephthalate, commonly abbreviated as PET or PETE, is a polymer resin of the polyester family. PET is identified by the number 1 recycling symbol. Commonly recyclable PET materials include 2 litre soda bottles, water bottles, cooking oil bottles, peanut butter jars.

Plastic – HDPE (2)

High Density Polyethylene is a polyethylene thermoplastic made from petroleum. HDPE is identified by the number 2 recycling symbol. Some commonly recycled HDPE materials include detergent bottles, milk jugs, and grocery bags.

Plastic - All others (3-7)

Polyvinyl Chloride – PVC (3), Low Density Polyethylene – LDPE (4), Polypropylene – PP (5), Polystyrene – PS (6), Other (7).

Common uses: (3) plastic pipes, outdoor furniture, shrink wrap, water bottles, (4) dry cleaning bags, produce bags, trash can liners, (5) aerosol caps, drinking straws, (6) packaging pellets, Styrofoam cups (7) food containers.

Post closure and maintenance fund (landfills)

This includes money set aside for the eventual costs associated with the maintenance and rehabilitation of a landfill after it closes. Such a fund is often called a landfill reserve fund.

Processing residue

Material that was originally diverted from disposal either to be recycled or composted, but was disposed due to the unsuitability of the material for recycling/composting (i.e. the type of material could not be processed or it was contaminated).

Quantity of materials entering the facility

The quantity, by weight, of unprocessed materials (e.g., organics) entering a processing facility (e.g., a central composting facility).

Recyclable material

Any material that has reached the end of its useful life in the form or purpose for which it was initially made and that can be recycled into a material that has value as a feedstock in another production process.

Recyclable material collection services, non-residential (non-hazardous)

Collection of non-hazardous recyclable material, (e.g., cardboard, paper, plastics, metals, glass), from sources such as heavy and light industry, manufacturing, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities. Recyclable material may be taken to an intermediate site such as a material recycling facility or transfer facility.

Recyclable material collection, residential (non-hazardous)

Collection of non-hazardous recyclable material e.g., cardboard, paper, plastics, metals, glass, from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection. Recyclable material may be taken to an intermediate site such as a material recovery facility or transfer facility. Recyclable material may be collected on a regular or flexible schedule.

Recycling

Recycling is defined as the process whereby a recyclable material (e.g., glass, metal, plastic, paper) is diverted from

the waste stream in order to be remanufactured into a new product, or is used as a raw material substitute.

Recycling centre / drop off depot

A facility or site where the public can bring materials for recycling or re-use. In some cases, household hazardous waste or special waste is accepted at these sites.

Recycling services (non-hazardous waste)

Recovery of recyclable material (e.g., cardboard, paper, plastics, metals, glass), from the non-hazardous waste stream by baling, cleaning, sorting, reducing volume and preparing for shipment. Generally these activities take place in a material recycling facility (MRF).

Residential waste

Residential waste refers to waste from primary and seasonal dwellings, which includes all single family, multi-family, high rise and low rise residences.

It includes:

- » The waste picked up by the municipality, (either using its own staff, or through contracted companies), and
- » The waste from residential sources which is self-hauled to depots, transfer stations and landfills.

Residual waste processing

An operation in which the physical or chemical properties of non-recyclable or compostable wastes are changed to reduce size and/or volume. Examples of waste processing are shredding, compaction & transformation.

Scrap metal

Any metal cutting or reject of a manufacturing operation, which may be suitable for recycling.

Sources of materials

Refers to the sources of generation of the waste or recyclable material. These sources are classified as residential, industrial, commercial and institutional (IC&I) and construction, renovation and demolition. It is sometimes difficult to ascertain the source of a given material because of lack of tracking or complex collection arrangements (e.g., when collection is contracted out or when collection vehicles pick up materials from a mix of sources on their routes).

Source separated organic materials (SSO)

Source separation of organics is the setting aside of organic waste materials at their point of generation (the home, office, or other place of business) by the generator. Examples of SSO materials are food scraps, soiled paper packaging such as ice cream boxes, muffin paper, flour and sugar bags, paper coffee cups and paper plates

Stabilized landfill

A stabilized landfill is similar to a conventional landfill except waste is screened and then mechanically and biologically treated prior to being landfilled. Screening of waste (usually from source separated collection programs) removes recyclable materials as well as other materials that should not be landfilled. The remainder is composted and then landfilled. This kind of waste treatment prior to landfilling reduces the production of landfill gas and leachate.

Tipping fees (disposal fees)

Also known as disposal fees, these are fees that are paid to the owner, lessor or operator of a landfill for the right to dispose of waste within that landfill. These fees can be assessed on a weight-based (e.g., per tonne), volume-based (per cubic metre) or per item basis (fees that differ according to the type of material being disposed, such as white goods or tires). Tipping fees may also be paid to the owner or operator of recycling facilities, organic material processing facilities, or waste processing facilities.

Transfer station (non-hazardous)

A facility at which wastes transported by vehicles involved in collection are transferred to other vehicles that will transport the wastes to a disposal (landfill or incinerator) or recycling facility.

Waste collection services, non-residential (non-hazardous)

Collection of non-hazardous waste, garbage, rubbish, refuse, trash and commingled material from sources such as heavy and light industry, manufacturing, agriculture, warehousing,

transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities. Waste may be taken to an intermediate site or to a final disposal site.

Waste collection services, residential (non-hazardous)

Collection of non-hazardous waste, garbage, rubbish, refuse, trash and commingled material from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection. Waste may be taken to an intermediate site or to a final disposal site.

Waste hauling or transportation

The transportation of waste from one site or geographic area to another. This excludes the collection of waste and is limited to activities such as waste exporting or the shipping of wastes from transfer station to disposal or processing facility.

White goods

Includes metal items such as: stoves, fridges, freezers, air conditioners, dehumidifiers, washers, dryers, hot water tanks, metal sinks, microwaves, and various other metal items.

Wood waste

The primary constituents of wood waste are used lumber, trim, shipping pallets, trees, branches, and other wood debris from construction and demolition clearing and grubbing activities. It includes; dimensional lumber, plywood, particle board & fibre board, pallets/skids, crating, wood fencing, pressure treated lumber, wood shingles, wooden doors, creosoted wood products, demolition wood waste, painted wood.

Conversions

One cubic yard = 0.764 cubic metres

1 kilogram = 2.2 pounds

1 metric tonne = 1000kg = 2200 pounds

General Instructions

Please read before completing

This survey is intended for the jurisdiction responsible for the operation of a waste management program.

The term "jurisdiction" is used to represent any government, government agency, or waste management board or commission.

If this jurisdiction is an association of municipalities, an upper tier or a special organization with a mandate to manage waste for a number of lower-tier governments then please respond for the municipalities under your jurisdiction. All references in the questionnaire to this jurisdiction should be interpreted as all municipalities under this jurisdiction. Please provide a list of member municipalities in Section 1.

If you represent a lower-tier government and you do not maintain statistics on any of the functions covered by this questionnaire, please fill in Section 6 on employment and financial information indicating the fees/levies you pay to the upper tier. Please

also indicate in the Comments Section which upper tier or special organization is responsible for waste services for your municipality.

If this jurisdiction can only report some of the data required, please report the information that you can and indicate in the Comments Section who we might contact to obtain the missing information.

There are 7 sections to this survey. Please answer all sections of this survey unless we advise you to do otherwise.

If your municipality does not collect data in metric tonnes please indicate the measurement (truck loads; pounds, etc.) you are using in the spaces provided.

Authorization to release data

The provincial and territorial governments have requested access to the individual records of their respective provincial and territorial respondents to this survey. This request is being made in an effort to reduce the burden of response imposed on you, the municipal respondent, by this survey and other provincial and territorial surveys of waste management activities.

I hereby give permission to the Chief Statistician of Canada to authorize the release to the government department or ministry responsible for the collection of waste management statistics in my province or territory, of all information relating to this organization that has been provided to Statistics Canada through the *Waste Management Industry Survey: Government Sector, 2008*.

⁹⁰³ Yes ► Please complete the following.

No ► Go to Section 1

Name (type or print)

Date

Year	Month	Day
<input type="text"/>	<input type="text"/>	<input type="text"/>

Signature

Title

Municipality/organization

Address

Section 1 - Waste Management Services

Who are you responding for?

1.1 List all municipalities, cities, villages, towns and townships for which this jurisdiction provides waste management services. Please indicate, by filling in the appropriate circle, each service this jurisdiction provides to the municipality specified.

City/Municipality		Services provided by this jurisdiction			
		Collection <i>(Section 2)</i>	Disposal/ processing <i>(Section 4)</i>	Recycling/ organic material processing <i>(Section 3)</i>	Waste management planning/ administration <i>(Section 6)</i>
		Mark all that apply			
This Jurisdiction	101 <input type="text"/>	105 <input type="radio"/>	106 <input type="radio"/>	107 <input type="radio"/>	108 <input type="radio"/>
Municipality # 1	109 <input type="text"/>	113 <input type="radio"/>	114 <input type="radio"/>	115 <input type="radio"/>	116 <input type="radio"/>
Municipality # 2	117 <input type="text"/>	121 <input type="radio"/>	122 <input type="radio"/>	123 <input type="radio"/>	124 <input type="radio"/>
Municipality # 3	125 <input type="text"/>	129 <input type="radio"/>	130 <input type="radio"/>	131 <input type="radio"/>	132 <input type="radio"/>
Municipality # 4	133 <input type="text"/>	137 <input type="radio"/>	138 <input type="radio"/>	139 <input type="radio"/>	140 <input type="radio"/>
Municipality # 5	141 <input type="text"/>	145 <input type="radio"/>	146 <input type="radio"/>	147 <input type="radio"/>	148 <input type="radio"/>
Municipality # 6	149 <input type="text"/>	153 <input type="radio"/>	154 <input type="radio"/>	155 <input type="radio"/>	156 <input type="radio"/>
Municipality # 7	157 <input type="text"/>	161 <input type="radio"/>	162 <input type="radio"/>	163 <input type="radio"/>	164 <input type="radio"/>
Municipality # 8	165 <input type="text"/>	169 <input type="radio"/>	170 <input type="radio"/>	171 <input type="radio"/>	172 <input type="radio"/>
Municipality # 9	173 <input type="text"/>	177 <input type="radio"/>	178 <input type="radio"/>	179 <input type="radio"/>	180 <input type="radio"/>

Reporting period

1.2 Financial information should be reported for this jurisdiction's most recent fiscal year that ended at any time between April 1, 2008 and March 31, 2009.

Specify fiscal year Start: ¹⁸¹ Year Month Day End: ¹⁸² Year Month Day

Section 2 - Collection/transportation of non-hazardous waste (garbage), recyclables, and organic material

Collection/transportation of non-hazardous waste (garbage)

2.1 In 2008, was waste (garbage) in this jurisdiction collected and/or transported to a landfill, incinerator/energy from waste facility, residual waste processor or a transfer station?

201 Yes ▶ Please complete the following. No collection of waste ▶ Go to question 2.3

Was waste collected/transported by:

(Mark all that apply)

This jurisdiction's employees ▶ 203 Yes No

Contractors hired by this jurisdiction ▶ 204 Yes No

Please specify name(s) of contractor(s).

205

206

Another jurisdiction ▶ 269 Yes No

Please specify name(s) of jurisdiction(s).

270

271

2.2 Please specify the name(s) of the facility(ies) where waste was taken. Include only final destinations such as landfills, incinerators / energy from waste facilities, residual waste processors, etc. Do not specify transfer stations unless it is the final destination.

257

258

259

Collection/transportation of non-hazardous recyclable materials

2.3 In 2008, did this jurisdiction administer a curbside collection program for recyclable materials?

211 Yes ▶ Go to question 2.4 No ▶ Go to section 2.6

2.4 Were these materials collected/transported by:
(Mark all that apply)

This jurisdiction's employees ▶ ²¹³ Yes No

Contractors hired by this jurisdiction ▶ ²¹⁴ Yes No

Please specify name(s) of contractor(s).

215

216

Another jurisdiction ▶ ²⁷² Yes No

Please specify name(s) of jurisdiction(s).

273

274

2.5 Please specify the name(s) of the facility(ies) where the recyclable materials were taken.

261

262

263

Collection/transportation of organic materials

2.6 In 2008, did this jurisdiction administer a curbside collection program for organic materials destined for processing?

²⁴⁶ Yes ▶ *Go to question 2.7* No ▶ *Go to section 3*

2.7 Were these materials collected/transported by:
(Mark all that apply)

This jurisdiction's employees ▶ ²⁴⁷ Yes No

Contractors hired by this jurisdiction ▶ ²⁴⁸ Yes No

Please specify name(s) of contractor(s).

249

250

Another jurisdiction ▶ ²⁷⁵ Yes No

Please specify name(s) of jurisdiction(s).

276

277

2.8 Please specify the name(s) of the facility(ies) where the organic materials were taken for processing (e.g., composting, anaerobic digestion).

265

266

Section 3 - Waste diversion: Organic material processing and recycling

Organic material processing (composting, anaerobic digestion)

3.1 In 2008, did this jurisdiction own a facility where organic materials were processed? Please include landfills or sites where organic materials were composted.

³²⁷ Yes ▶ Please complete the following. No ▶ Go to question 3.3

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ ³⁶⁷

Please include all quantities of food waste, materials from source separated organics programs (SSO), leaf and yard waste as well as Christmas trees and pumpkins.

Name and operator of facility if not self	Year opened	Quantity of materials entering facility <i>(metric tonnes)</i>	Sources of materials <i>(percentage)</i> <i>(Please see definitions at the back of this questionnaire)</i>			Material disposed as processing residue (e.g., contaminated materials) <i>(%)</i>
			Residential <i>(%)</i>	Non-residential (IC&I and C&D) <i>(%)</i>	Totals should equal 100%	
³²⁹ <input type="text"/> <input type="text"/>	³³¹ <input type="text"/>	³³² <input type="text"/>	³⁶⁸ <input type="text"/>	³⁶⁹ <input type="text"/>	100%	³⁷¹ <input type="text"/>
³³⁶ <input type="text"/> <input type="text"/>	³³⁸ <input type="text"/>	³³⁹ <input type="text"/>	³⁷² <input type="text"/>	³⁷³ <input type="text"/>	100%	³⁷⁵ <input type="text"/>
³⁴³ <input type="text"/> <input type="text"/>	³⁴⁵ <input type="text"/>	³⁴⁶ <input type="text"/>	³⁷⁶ <input type="text"/>	³⁷⁷ <input type="text"/>	100%	³⁷⁹ <input type="text"/>
Total ▶		³⁶⁴ <input type="text"/>				

3.2 Please indicate the quantity of each type of organic material processed at the facility(ies) listed in question 3.1.

Type of material	Quantity of organic materials (metric tonnes)	Type of material	Quantity of organic materials (metric tonnes)
Leaf & yard waste ▶	183 	Biosolids ▶	185
Food waste / SSO materials ▶	184 	Other (please specify) ¹⁸⁶ <input type="text"/>	189
Forestry waste / Wood waste ▶	187 	Other (please specify) ¹⁹⁰ <input type="text"/>	191
Agricultural waste ▶	188 	Other (please specify) ¹⁹⁴ <input type="text"/>	192

Recycling

3.3 In 2008, did this jurisdiction own a facility (municipally or privately operated) that prepared materials for recycling? (e.g., material recycling facility MRF, recycling centre, drop-off depot)

³⁸⁵ Yes ▶ Go to question 3.4

No ▶ Go to section 4

3.4 Please complete the following.

Name and operator of facility if not self	Sources of materials (percentage) <i>(Please see definitions at the back of this questionnaire)</i>				Material disposed as processing residue (e.g., contaminated materials) (%)
	Residential (%)	Non-residential (IC&I) (%)	Construction and demolition (C&D) (%)	Totals should equal 100%	
225 <input type="text"/>	228 	229 	230 	100%	386
232 <input type="text"/>	235 	236 	237 	100%	387
239 <input type="text"/>	242 	243 	244 	100%	388

Please list additional facilities in the Comments Section (Section 7).

3.5 Please indicate for 2008, the quantities of materials marketed from the facilities indicated in question 3.4. Only count quantities once. Exclude organic materials reported in question 3.1.

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 389

Type of material	Quantity of materials marketed (metric tonnes)	Type of material	Quantity of materials marketed (metric tonnes)
Newspprint, phone books, magazines ▶	314 <input type="text"/>	Plastic – PET (1)  ▶	391 <input type="text"/>
Corrugated cardboard ▶	315 <input type="text"/>	Plastic – HDPE (2)  ▶	392 <input type="text"/>
Mixed paper fibre and boxboard ▶	316 <input type="text"/>	All other plastic (3-7)  ▶	393 <input type="text"/>
Glass ▶	317 <input type="text"/>	Mixed plastics ▶	323 <input type="text"/>
Ferrous metals (including ferrous scrap metal) ▶	318 <input type="text"/>	Aseptic containers / tetra packs ▶	398 <input type="text"/>
White goods ▶	395 <input type="text"/>	Gable top containers (e.g., milk cartons) ▶	399 <input type="text"/>
Aluminum ▶	394 <input type="text"/>	Electronics ▶	396 <input type="text"/>
Copper ▶	390 <input type="text"/>	Tires ▶	397 <input type="text"/>
Mixed metals (ferrous and non-ferrous) ▶	322 <input type="text"/>	C & D material (Please exclude asphalt, concrete, rubble and land clearing debris) ▶	324 <input type="text"/>
Other (Please specify) ³⁶⁶ <input type="text"/> ▶			325 <input type="text"/>
		Total materials marketed ▶	326 <input type="text"/>

Section 4 - Management of non-hazardous waste (garbage)

Transfer Stations

4.1 In 2008 did this jurisdiction own a transfer station for non-hazardous waste?

⁵⁰¹ Yes ▶ Go to question 4.2

No ▶ Go to question 4.3

4.2 For each transfer station owned in this province/territory in 2008, please indicate the name, operator and provide your best estimate of the sources of waste and the total quantity of the waste managed through the transfer station.

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



⁵⁰²

Name and location of transfer station	Operator of this facility if not self	Approximate percentage of total waste managed through the facility, by source			Weigh scale present? <i>If yes, fill in circle</i>	Quantity of waste managed through the transfer station <i>(metric tonnes)</i>
		Residential	Non-residential (IC&I)	Construction and demolition (C&D)		
503 <input type="text"/> <input type="text"/>	504 <input type="text"/> <input type="text"/>	505 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	506 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	507 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	508 <input type="radio"/>	509 <input type="checkbox"/> <input type="checkbox"/>
510 <input type="text"/> <input type="text"/>	511 <input type="text"/> <input type="text"/>	512 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	513 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	514 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	515 <input type="radio"/>	516 <input type="checkbox"/> <input type="checkbox"/>
517 <input type="text"/> <input type="text"/>	518 <input type="text"/> <input type="text"/>	519 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	520 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	521 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	522 <input type="radio"/>	523 <input type="checkbox"/> <input type="checkbox"/>
524 <input type="text"/> <input type="text"/>	525 <input type="text"/> <input type="text"/>	526 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	527 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	528 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	529 <input type="radio"/>	530 <input type="checkbox"/> <input type="checkbox"/>
531 <input type="text"/> <input type="text"/>	532 <input type="text"/> <input type="text"/>	533 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	534 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	535 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	536 <input type="radio"/>	537 <input type="checkbox"/> <input type="checkbox"/>
538 <input type="text"/> <input type="text"/>	539 <input type="text"/> <input type="text"/>	540 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	541 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	542 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	543 <input type="radio"/>	544 <input type="checkbox"/> <input type="checkbox"/>
Total waste managed through transfer stations ▶						545 <input type="checkbox"/> <input type="checkbox"/>

Waste (garbage) disposal or processing

4.3 Did this jurisdiction own a facility where waste was disposed/processed in 2008? *Include all types of landfills (e.g., sanitary, stabilized, bioreactor), incineration/thermal treatment (e.g., energy from waste, gasification), and residual waste processing (e.g., conversion of non-recyclable waste to alternative fuel source).*

401 Yes ▶ *Go to question 4.4*

No ▶ *Go to question 4.6*

4.4 For each facility that you owned in the province/territory in 2008, indicate the name, type of facility and the sources and amount of waste disposed/processed in the facility as measured by weigh scales or by providing your best estimate. *Please see definitions at the back of this questionnaire.*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 477

Name of facility	Operator of this facility if not self	Please indicate type of facility as Landfill (LF), Processor (P) or Incinerator (IN), (fill in one only)	Approximate percentage of total waste disposed/processed, by source			Weigh scale present? <i>If yes, fill in circle</i>	Quantity of waste disposed/processed in the facility in 2008 <i>(metric tonnes)</i>
			Residential	No-residential (IC&I)	Construction and demolition (C&D)		
403 <input style="width: 100%; height: 20px;" type="text"/>	404 <input style="width: 100%; height: 20px;" type="text"/>	405 <input style="width: 20px; height: 20px;" type="text"/>	407 <input style="width: 20px; height: 20px;" type="text"/>	408 <input style="width: 20px; height: 20px;" type="text"/>	409 <input style="width: 20px; height: 20px;" type="text"/>	410 <input style="width: 20px; height: 20px;" type="text"/>	411 <input style="width: 100%; height: 20px;" type="text"/>
412 <input style="width: 100%; height: 20px;" type="text"/>	413 <input style="width: 100%; height: 20px;" type="text"/>	414 <input style="width: 20px; height: 20px;" type="text"/>	416 <input style="width: 20px; height: 20px;" type="text"/>	417 <input style="width: 20px; height: 20px;" type="text"/>	418 <input style="width: 20px; height: 20px;" type="text"/>	419 <input style="width: 20px; height: 20px;" type="text"/>	420 <input style="width: 100%; height: 20px;" type="text"/>
421 <input style="width: 100%; height: 20px;" type="text"/>	422 <input style="width: 100%; height: 20px;" type="text"/>	423 <input style="width: 20px; height: 20px;" type="text"/>	425 <input style="width: 20px; height: 20px;" type="text"/>	426 <input style="width: 20px; height: 20px;" type="text"/>	427 <input style="width: 20px; height: 20px;" type="text"/>	428 <input style="width: 20px; height: 20px;" type="text"/>	429 <input style="width: 100%; height: 20px;" type="text"/>
430 <input style="width: 100%; height: 20px;" type="text"/>	431 <input style="width: 100%; height: 20px;" type="text"/>	432 <input style="width: 20px; height: 20px;" type="text"/>	434 <input style="width: 20px; height: 20px;" type="text"/>	435 <input style="width: 20px; height: 20px;" type="text"/>	436 <input style="width: 20px; height: 20px;" type="text"/>	437 <input style="width: 20px; height: 20px;" type="text"/>	438 <input style="width: 100%; height: 20px;" type="text"/>
439 <input style="width: 100%; height: 20px;" type="text"/>	440 <input style="width: 100%; height: 20px;" type="text"/>	441 <input style="width: 20px; height: 20px;" type="text"/>	443 <input style="width: 20px; height: 20px;" type="text"/>	444 <input style="width: 20px; height: 20px;" type="text"/>	445 <input style="width: 20px; height: 20px;" type="text"/>	446 <input style="width: 20px; height: 20px;" type="text"/>	447 <input style="width: 100%; height: 20px;" type="text"/>
448 <input style="width: 100%; height: 20px;" type="text"/>	449 <input style="width: 100%; height: 20px;" type="text"/>	450 <input style="width: 20px; height: 20px;" type="text"/>	452 <input style="width: 20px; height: 20px;" type="text"/>	453 <input style="width: 20px; height: 20px;" type="text"/>	454 <input style="width: 20px; height: 20px;" type="text"/>	455 <input style="width: 20px; height: 20px;" type="text"/>	456 <input style="width: 100%; height: 20px;" type="text"/>
457 <input style="width: 100%; height: 20px;" type="text"/>	458 <input style="width: 100%; height: 20px;" type="text"/>	459 <input style="width: 20px; height: 20px;" type="text"/>	461 <input style="width: 20px; height: 20px;" type="text"/>	462 <input style="width: 20px; height: 20px;" type="text"/>	463 <input style="width: 20px; height: 20px;" type="text"/>	464 <input style="width: 20px; height: 20px;" type="text"/>	465 <input style="width: 100%; height: 20px;" type="text"/>
466 <input style="width: 100%; height: 20px;" type="text"/>	467 <input style="width: 100%; height: 20px;" type="text"/>	468 <input style="width: 20px; height: 20px;" type="text"/>	470 <input style="width: 20px; height: 20px;" type="text"/>	471 <input style="width: 20px; height: 20px;" type="text"/>	472 <input style="width: 20px; height: 20px;" type="text"/>	473 <input style="width: 20px; height: 20px;" type="text"/>	474 <input style="width: 100%; height: 20px;" type="text"/>
Total waste disposed/processed in facilities ▶							475 <input style="width: 100%; height: 20px;" type="text"/>

Please list additional facilities in the comments section (Section 7)

Landfills

The following question pertains to landfills. If no landfills were reported in question 4.4, please go to question 4.6.

4.5 Please fill in the table below specifying if the landfill(s) reported in question 4.4, received any of the following materials, the quantity received, unit of measure and whether it was included in your response to 4.4 (quantity of waste disposed in landfill).

Type of material	Received at your landfill?	Quantity	Unit of measure (e.g., metric tonnes, kilograms)	Included in 4.4?
Bottom ash from sewage sludge or solid waste incineration	573 <input type="radio"/> Yes <input type="radio"/> No	575 	584 <input type="text"/>	581 <input type="radio"/> Yes <input type="radio"/> No
Contaminated soil	576 <input type="radio"/> Yes <input type="radio"/> No	578 	585 <input type="text"/>	579 <input type="radio"/> Yes <input type="radio"/> No
Clean fill	582 <input type="radio"/> Yes <input type="radio"/> No	583 	586 <input type="text"/>	580 <input type="radio"/> Yes <input type="radio"/> No

Household hazardous/special waste and waste reduction

4.6 In 2008, did this jurisdiction, in cooperation/conjunction with another jurisdiction or solely, administer a program to collect household hazardous/special waste?

478 Yes No

4.7 Does this jurisdiction implement any of the following programs to encourage the reduction of waste?

Mark all that apply.

483 Bag limits

484 Distribution of backyard composters (subsidized)

485 Reduced garbage collection frequency (e.g., every two weeks)

486 User fees/bag tags

487 Clear bag program for garbage

488 Other (please specify):

489

490 Other (please specify):

491

492 Other (please specify):

493

Section 5 - Exports and imports of non-hazardous materials

Exports and imports of waste (garbage) for disposal/processing

5.1 Did this jurisdiction transport/export non-hazardous waste for disposal/processing to another province/territory or to the U.S.A. in 2008? *Include direct shipments and shipments from transfer stations.*

⁶⁰¹ Yes ▶ *Please complete the following.* No ▶ *Go to question 5.2*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ ⁶⁵⁵

Name and owner of facility	Location/Address	Quantity of waste sent to another province/territory (metric tonnes)	Quantity of waste sent to the U.S.A (metric tonnes)
⁶¹⁵ <input type="text"/>	⁶¹⁶ <input type="text"/>	⁶¹⁷ <input type="text"/>	⁶¹⁸ <input type="text"/>
⁶¹⁹ <input type="text"/>	⁶²⁰ <input type="text"/>	⁶²¹ <input type="text"/>	⁶²² <input type="text"/>
⁶²³ <input type="text"/>	⁶²⁴ <input type="text"/>	⁶²⁵ <input type="text"/>	⁶²⁶ <input type="text"/>
Total waste exported for disposal/processing ▶		⁶⁰⁷ <input type="text"/>	⁶¹⁰ <input type="text"/>

5.2 Was non-hazardous waste from outside this province/territory disposed/processed in this jurisdiction's facility (e.g., landfill, incinerator / energy from waste, or residual waste processing facility) in this province/territory in 2008?

⁶⁴⁶ Yes ▶ *Please complete the following.* No ▶ *Go to section 5.3*

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ ⁶⁴⁷

	Quantity of waste from other provinces/territories (metric tonnes)	Quantity of waste from the U.S.A. (metric tonnes)
Total waste imported for disposal/processing ▶	⁶⁵¹ <input type="text"/>	⁶⁵³ <input type="text"/>

Exports and imports of recyclable materials and organic materials

5.3 Did this jurisdiction transport/export recyclable materials to a material recycling facility (MRF) outside of this province/territory in 2008? Do not include exports of recyclable materials to end markets in other provinces or the U.S.A. Report organic material exports in question 5.4.

656 Yes ▶ Please complete the following. No ▶ Go to question 5.4

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



657

Name and owner of facility	Location/Address	Quantity of recyclables exported to another province/territory <i>(metric tonnes)</i>	Quantity of recyclables exported to the U.S.A. <i>(metric tonnes)</i>
658	659	660	661
662	663	664	665
Total recyclable materials exported ▶		666	667

5.4 Did this jurisdiction transport/export organic materials for processing (e.g., composting, anaerobic digestion) to a facility outside of this province/territory in 2008?

668 Yes ▶ Please complete the following. No ▶ Go to question 5.5

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.



669

Name and owner of facility	Location/Address	Quantity of organics processed in another province/territory <i>(metric tonnes)</i>	Quantity of organics processed in the U.S.A. <i>(metric tonnes)</i>
670	671	672	673
674	675	676	677
Total organic materials exported ▶		680	681

5.5 Were recyclable materials and/or organic materials from outside this province/territory processed at your jurisdiction's MRF or composting/anaerobic digestion facility in 2008?

683 Yes ▶ Please complete the following. No ▶ Go to section 6

If you are not reporting quantities in metric tonnes, please specify the unit of measure used.

▶ 684

	Quantity of recyclables from other provinces/territories (metric tonnes)	Quantity of recyclables from the U.S.A. (metric tonnes)	Quantity of organic materials from other provinces/territories (metric tonnes)	Quantity of organic materials from the U.S.A. (metric tonnes)
Total materials imported ▶	685 <input type="text"/>	686 <input type="text"/>	687 <input type="text"/>	688 <input type="text"/>

Section 6

Financial and employment information

6.1 Gross Revenues. Indicate this jurisdiction's 2008 gross revenues (to the nearest dollar) from waste management services. Do not net out expenditures. Refer to the list in 6.2 for inclusions.

Total revenues ▶ ⁷⁰⁸ \$

6.2 Please estimate the percentage of total gross revenues (reported in question 6.1) received from the provision of each of the following.

	Percentage
Fees received from municipal levies, waste management fees collected on utility bill payments ▶	701 <input type="text"/>
Provision of waste management services to businesses on contract ▶	702 <input type="text"/>
Sale of recyclable materials (including compost) ▶	703 <input type="text"/>
Tipping fees received ▶	704 <input type="text"/>
Royalties received for hosting a waste disposal facility ▶	705 <input type="text"/>
Grants, interest free loans, federal or provincial non-tax based revenues (including infrastructure or special program grants and loans) ▶	706 <input type="text"/>
Other non-tax revenues for waste management (e.g., sale of bag tags, sale of composters, other user pay revenues) ▶	707 <input type="text"/>
Total should equal ▶	100%

Section 7

Certification

7.1 I certify that the information contained in this report is correct and complete to the best of my knowledge.

Signature

Date

0015

Year

Month

Day

--	--	--	--	--	--	--	--	--	--

Name of person completing this report

0013

Telephone

0017

--	--	--	--	--	--	--	--	--	--

Extension

0027

--	--	--	--	--	--	--	--	--	--

Title of person completing this report

0014

Fax

0016

--	--	--	--	--	--	--	--	--	--

E-mail address

0018

Website address

0020

7.2 Approximately how much time was spent filling out this survey and calculating the figures required?

901

--	--	--	--

Hours

Comments

Please provide any comments you may have about this survey (e.g., length, ease of completion, suggestions for future questions, suggestions about the format). Also, please use this space or attach additional documentation if you wish to provide additional information about your waste management activities.

If you have any questions, please contact:
Operations and Integration Division, JT-2-C4,
Statistics Canada, Ottawa, Ontario, K1A 0T6
Telephone (toll free) 1-888-659-8157
Fax: 1-800-755-5514
Email: enviro-waste-govt@statcan.gc.ca

**Please return this
questionnaire in the
envelope provided**

Thank-you for your participation!

Introduction

Waste statistics are important sets of information used to determine public policy and environmental practices. The Environment Accounts and Statistics Division of Statistics Canada plays a significant role in developing environmental statistics for Canada. One of the Division's objectives is to develop a complete set of statistics on the physical and financial dimensions of the management of waste.

What is waste?

There have been several definitions of waste proposed in recent years. One common thread among these definitions is the concept that waste is a material that is unwanted by its producer. The unwanted materials may be by-products of a production process – fly ash from a furnace, for example. Alternatively they might be products, the inherent value of which has been consumed from the perspective of the current holder – for example, a newspaper that has been read, a package that has been opened and emptied of its contents or an apple eaten to the core are all similar insofar as they have lost their original inherent value from the consumers perspective.

If these materials lose this inherent value to such a degree that permanent disposal is the most viable option or perhaps the only available option, then a waste services provider acts as an agent that relieves the generator of the waste of the burden of disposal.

However, the material may have value from the perspective of someone else – the newspaper can be used as an input at a pulp and paper plant or the apple can be used by a composting facility – thus a waste services provider may divert such a material from the waste stream. Value is reintroduced to the material through a process that treats the material in such a way as to enable it to be reintroduced back into the market place as a valuable good. For example, the newspaper may be collected and taken to a Material Recycling Facility (MRF) where it is sorted from other items, bundled and compacted – thus preparing it in such a fashion that it is marketable (valuable) to a buyer such as a pulp and paper mill.

What is the waste management industry?

The Canadian waste management industry embodies two inter-related elements – governments and other public organisations that provide or make provision for waste management services and private firms that supply these

services. To supply the information needed to depict these two elements, two survey vehicles are utilised. One is the Waste Management Industry: Business Sector Survey and the other is the Waste Management Industry: Government Sector Survey. Both of these surveys gather financial and human resource (e.g., revenues, expenditures, employment) and physical information (e.g., quantities of different types of waste disposed of or recycled) about the waste management industry.

For the purposes of these surveys, the waste management industry broadly includes all firms and public bodies operating in Canada that provide the services of collection, transportation, diversion, treatment or disposal of waste or recyclable materials. The majority of the establishment's revenue will come from provision of these services. To further define these broad activities:

- » Waste, recyclable and organic materials collection methods are curbside collection, back door pick-ups, and automated collection. The waste, recyclable or organic materials may be taken to an intermediate site or to a final disposal site.
- » Waste diversion includes any physical transformation of materials in preparation for recycling or reuse. Such activities include sorting, cleaning, and volume reduction as well as composting and anaerobic digestion.
- » Waste disposal facilities include landfills and incinerators/energy from waste facilities

Please exclude:

- » Wastes that are associated with primary resource extraction or harvesting (e.g. farm manure, fish waste from fish processing, market garden waste, orchard and urban forest tree prunings, mine or mill tailings, forest industry waste)
- » Conventional air pollutants
- » Liquid effluents from processing or manufacturing sites
- » Any materials used as landfill cover

- » Clean or contaminated soil including soil used as landfill cover
- » Industrial sludge
- » Gravel and rocks
- » By-products generically referred to as nuclear wastes
- » Oil field waste
- » Waste from portable toilets

This is consistent with the definition of waste used by the Canadian Council of Ministers of the Environment.

Estimating sources of waste (garbage), recyclables and organic materials

It is acknowledged that it is often very difficult to track the quantities of waste and recyclable materials by source unless the business or local government collects or prepares materials from only one source (e.g., a firm that collects waste only from IC&I sources).

In this survey, you are being asked to estimate the proportion of materials by source of material at three points (if applicable and known) at the facility where organic material is processed, at the facility where recyclables are prepared and at disposal. If you engage in one or more of these activities, you will be asked to estimate the proportion of waste, recyclable or organic materials from residential, non-residential and construction and demolition sources. While it is recognized that such estimates may be difficult to make, you are asked to be as accurate as possible.

Definitions

Agricultural waste

All waste materials produced as a result of agricultural activities, including, for example, residues from the application of pesticides, herbicides, fertilizers and other chemicals, wastewater, manure, bedding material, etc.

Anaerobic digestion

A series of processes in which microorganisms break down biodegradable material in the absence of oxygen.

Bioreactor landfill

A landfill where water and air are circulated into a specifically designed landfill in order to cause accelerated biological decomposition of waste material.

Biosolids

Includes solid or semisolid material obtained from treated wastewater.

Bottom ash

The residue ash that remains after the incineration of a waste material.

Clean fill

Uncontaminated inert solid material including soil, rock, stone, dredged material, used asphalt, and brick, block or concrete. The soil is considered 'clean' because it has not been contaminated or affected, for example by a spill or release of toxic materials.

Composting

Composting is an aerobic biological treatment process used most frequently in Canada at this time for management of biodegradable waste such as leaf and yard waste or food wastes. See also anaerobic digestion.

Construction and demolition waste (C&D)

C&D waste, also referred to as DLC (demolition, landclearing and construction waste), refers to waste generated by construction and demolition activities. It generally includes materials such as brick, painted wood, drywall, metal, cardboard, doors, windows, wiring, etc. It excludes materials from land clearing on areas not previously developed. C&D waste can come from residential sources such as house renovations or from non-residential sources for example the construction or demolition of office buildings.

Contaminated soil

Soils containing materials that, by their nature, require controlled disposal.

Electronics

Electronics are items that function through the use of electricity and/or batteries. Also included are items that have a circuit board but do not necessarily require electricity from an outlet such as telecommunication equipment. Examples are personal computers, laptops, monitors, peripherals (e.g. printers, scanners), telephones, cell phones, facsimile machines, stereos, portable music players and children's toys containing electronic components.

Energy from waste (EFW)

EFW refers to any waste treatment that creates energy in the form of electricity or heat from a waste source. Most EFW processes produce electricity directly through combustion, or produce a combustible fuel commodity, such as methane, methanol, ethanol or synthetic fuels.

Ferrous metals

These are metals which contain iron. They may have small amounts of other metals or other elements added, to give the required properties. All ferrous metals are magnetic and give little resistance to corrosion. Steel is an example of a ferrous metal. The recycling of ferrous metals include but is not limited to the processing of tin/steel cans, strapping, as well as the extraction of metals from appliances.

Food waste

Includes food wastes and food scraps from households and non-residential sources such as grocery stores, restaurants, etc, destined for composting or anaerobic digestion.

Forestry waste

The debris or leftover waste from the management of forests. This would include trees, stumps, branches, etc., that were discarded.

Gasification

A process, in the context of waste, that uses heat, pressure and steam to convert materials directly into a combustible gas.

Hazardous waste

Includes materials or substances that given their corrosive, inflammable, infectious, reactive and toxic characteristics,

may present a real or potential harm to human health or the environment. Due to their hazardous nature they require special handling, storing, transportation, treatment and disposal as specified by the Transportation of Dangerous Goods Regulations (1985), The Canadian Environmental Protection Act (1988), The Basel Convention (1989), or the Export and Import of Hazardous Waste Regulations (1992).

Hazardous waste disposal

Disposal of hazardous waste at a facility that meets legal standards for the disposal of hazardous waste (e.g., by incineration, controlled confinement, landfilling and other methods).

Hazardous waste recycling

The recycling of hazardous wastes involves the treatment or processing of these wastes in order to reduce or transform them into a new or reuseable product or material that can in turn be used as an input into another production process.

Hazardous waste transfer facility or station

Consolidation, temporary storage, and preparation for transport of hazardous waste to an appropriate facility for treatment, disposal, or reuse. Includes drop-off center services, transfer and container stations.

Hazardous waste treatment

Treatment to reduce, eliminate, or transform hazardous waste. Processes include biological, chemical, and/or physical procedures; such processes may lead to disposal and/or to the recovery of recyclable material. Treatment services exclude incineration.

Household hazardous/special waste (HHW)

Materials generated by residential households that can not be collected in standard residential recycling programs and present a risk to municipal waste management systems because of their hazardous and/or toxic nature. This includes solid or liquid materials, or containers holding gases which have outlived their usefulness. This waste may be flammable, corrosive, explosive or toxic and therefore should not be disposed in landfills or sewage systems.

Incineration / thermal treatment

Incineration, in the context of waste, refers to the burning of waste. Incineration of waste materials converts the waste into incinerator bottom ash, flue gases, particulates, and heat, which can in turn be used to generate electric power. Most jurisdictions in Canada consider incineration to be disposal.

Industrial, commercial and institutional waste (IC&I, non-residential)

IC&I Waste (industrial, Commercial, and Institutional) is the waste generated by all non-residential sources in a municipality, and is excluded from the residential waste stream. This includes:

- » Industrial waste, which is generated by manufacturing, and primary and secondary industries, and is managed off-site from the manufacturing operation, and is generally picked up under contract by the private sector;
- » Commercial waste is generated by commercial operations such as shopping centres, offices, etc. Some commercial waste (from small street-front stores, etc.) may be picked up by the municipal collection system along with the residential waste;
- » Institutional waste is generated by institutional facilities such as schools, hospitals, government facilities, senior homes, universities, etc. This waste is generally picked up under contract with the private sector.

Landfill

A site, on land, that is used primarily for the disposal of waste materials. The contents of landfills can include garbage which is not processed, and also residual material from processing operations (MRF residues, incinerators ash, organic processing residues, etc).

Leaf and yard waste

Includes any waste collected from a yard or garden such as leaves, grass clippings, plants, tree trimmings and branches.

Material Recycling Facility (MRF)

A facility where materials that are collected for recycling are prepared or processed. The preparation or processing can include sorting, baling, cleaning, crushing, volume reduction and storing until shipment.

Metric tonne

A measure of weight equal to 1,000 kilograms or 2,204 pounds.

Non-hazardous waste (garbage)

Included in this category are materials, products or by-products for which the waste generator has no further use and which are received for disposal at waste disposal facilities or for processing at a waste processing facility.

Organic materials

Materials that are or were once living, such as leaves, grass, yard trimmings, agricultural crop residues, wood waste, and paper and paperboard products or food scraps.

Organic processing services

The breakdown of organic materials through either composting or anaerobic digestion processes.

Organic material collection, non-residential

Collection of organic material, (e.g., food scraps, leaves, grass, wood waste and paper products), from sources such as heavy and light industry, manufacturing, agriculture, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities.

Organic material collection, residential

Collection of organic material, (e.g., food scraps, leaves, grass, yard trimmings), from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection.

Plastic – PET (1)

Polyethylene Terephthalate, commonly abbreviated as PET or PETE, is a polymer resin of the polyester family. PET is identified by the number 1 recycling symbol. Commonly recyclable PET materials include 2 litre soda bottles, water bottles, cooking oil bottles, peanut butter jars.

Plastic – HDPE (2)

High Density Polyethylene is a polyethylene thermoplastic made from petroleum. HDPE is identified by the number 2 recycling symbol. Some commonly recycled HDPE materials include detergent bottles, milk jugs, and grocery bags.

Plastic - All others (3-7)

Polyvinyl Chloride – PVC (3), Low Density Polyethylene – LDPE (4), Polypropylene – PP (5), Polystyrene – PS (6), Other (7).

Common uses: (3) plastic pipes, outdoor furniture, shrink wrap, water bottles, (4) dry cleaning bags, produce bags, trash can liners, (5) aerosol caps, drinking straws, (6) packaging pellets, Styrofoam cups (7) food containers.

Post closure and maintenance fund (landfills)

This includes money set aside for the eventual costs associated with the maintenance and rehabilitation of a landfill after it closes. Such a fund is often called a landfill reserve fund.

Processing residue

Material that was originally diverted from disposal either to be recycled or composted, but was disposed due to the unsuitability of the material for recycling/composting (i.e. the type of material could not be processed or it was contaminated).

Quantity of materials entering the facility

The quantity, by weight, of unprocessed materials (e.g., organics) entering a processing facility (e.g., a central composting facility).

Recyclable material

Any material that has reached the end of its useful life in the form or purpose for which it was initially made and that can be recycled into a material that has value as a feedstock in another production process.

Recyclable material collection services, non-residential (non-hazardous)

Collection of non-hazardous recyclable material, (e.g., cardboard, paper, plastics, metals, glass), from sources such as heavy and light industry, manufacturing, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities. Recyclable material may be taken to an intermediate site such as a material recycling facility or transfer facility.

Recyclable material collection, residential (non-hazardous)

Collection of non-hazardous recyclable material e.g., cardboard, paper, plastics, metals, glass, from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection. Recyclable material may be taken to an intermediate site such as a material recovery facility or transfer facility. Recyclable material may be collected on a regular or flexible schedule.

Recycling

Recycling is defined as the process whereby a recyclable material (e.g., glass, metal, plastic, paper) is diverted from

the waste stream in order to be remanufactured into a new product, or is used as a raw material substitute.

Recycling centre / drop off depot

A facility or site where the public can bring materials for recycling or re-use. In some cases, household hazardous waste or special waste is accepted at these sites.

Recycling services (non-hazardous waste)

Recovery of recyclable material e.g., cardboard, paper, plastics, metals, glass, from the non-hazardous waste stream by baling, cleaning, sorting, reducing volume and preparing for shipment. Generally these activities take place in a material recycling facility (MRF).

Residential waste

Residential waste refers to waste from primary and seasonal dwellings, which includes all single family, multi-family, high rise and low rise residences.

It includes:

- » The waste picked up by the municipality, (either using its own staff, or through contracted companies), and
- » The waste from residential sources which is self-hauled to depots, transfer stations and landfills.

Residual waste processing

An operation in which the physical or chemical properties of non-recyclable or compostable wastes are changed to reduce size and/or volume. Examples of waste processing are shredding, compaction & transformation.

Scrap metal

Any metal cutting or reject of a manufacturing operation, which may be suitable for recycling.

Sources of materials

Refers to the sources of generation of the waste or recyclable material. These sources are classified as residential, industrial, commercial and institutional (IC&I) and construction, renovation and demolition. It is sometimes difficult to ascertain the source of a given material because of lack of tracking or complex collection arrangements (e.g., when collection is contracted out or when collection vehicles pick up materials from a mix of sources on their routes).

Source separated organic materials (SSO)

Source separation of organics is the setting aside of organic waste materials at their point of generation (the home, office, or other place of business) by the generator. Examples of SSO materials are food scraps, soiled paper packaging such as ice cream boxes, muffin paper, flour and sugar bags, paper coffee cups and paper plates

Stabilized landfill

A stabilized landfill is similar to a conventional landfill except waste is screened and then mechanically and biologically treated prior to being landfilled. Screening of waste (usually from source separated collection programs) removes recyclable materials as well as other materials that should not be landfilled. The remainder is composted and then landfilled. This kind of waste treatment prior to landfilling reduces the production of landfill gas and leachate.

Tipping fees (disposal fees)

Also known as disposal fees, these are fees that are paid to the owner, lessor or operator of a landfill for the right to dispose of waste within that landfill. These fees can be assessed on a weight-based (e.g., per tonne), volume-based (per cubic metre) or per item basis (fees that differ according to the type of material being disposed, such as white goods or tires). Tipping fees may also be paid to the owner or operator of recycling facilities, organic material processing facilities, or waste processing facilities.

Transfer station (non-hazardous)

A facility at which wastes transported by vehicles involved in collection are transferred to other vehicles that will transport the wastes to a disposal (landfill or incinerator) or recycling facility.

Waste collection services, non-residential (non-hazardous)

Collection of non-hazardous waste, garbage, rubbish, refuse, trash and commingled material from sources such as heavy and light industry, manufacturing, agriculture, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health and other service facilities. Waste may be taken to an intermediate site or to a final disposal site.

Waste collection services, residential (non-hazardous)

Collection of non-hazardous waste, garbage, rubbish, refuse, trash and commingled material from dwellings, including apartment buildings and condominiums. Examples of collection methods are curbside collection, back door pick-up, and automated collection. Waste may be taken to an intermediate site or to a final disposal site.

Waste hauling or transportation

The transportation of waste from one site or geographic area to another. This excludes the collection of waste and is limited to activities such as waste exporting or the shipping of wastes from transfer station to disposal or processing facility.

White goods

Includes metal items such as: stoves, fridges, freezers, air conditioners, dehumidifiers, washers, dryers, hot water tanks, metal sinks, microwaves, and various other metal items.

Wood waste

The primary constituents of wood waste are used lumber, trim, shipping pallets, trees, branches, and other wood debris from construction and demolition clearing and grubbing activities. It includes; dimensional lumber, plywood, particle board & fibre board, pallets/skids, crating, wood fencing, pressure treated lumber, wood shingles, wooden doors, creosoted wood products, demolition wood waste, painted wood.

Conversions

One cubic yard = 0.764 cubic metres

1 kilogram = 2.2 pounds

1 metric tonne = 1000kg = 2200 pounds