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Waste Management Industry Survey Business and Government Sectors 2000



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Waste Management Industry Survey Business and Government Sectors

2000

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Preface

This report presents the results of the 2000 *Waste Management Industry Survey: Business Sector* and the 2000 *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 analysed and presented at a provincial level wherever it was possible to do so without compromising confidentiality.

This is the sixth time that the business sector of the waste management industry has been surveyed and the seventh time that the local government sector has been covered. This is the third time that both sectors have been reported under one cover.

Acknowledgements

The contributions of the respondents, industry groups and provincial environmental departments were critical to the successful completion of the surveys and are gratefully acknowledged.

This report was prepared by the Environment Accounts and Statistics Division under the direction of Claude Simard, Director and Bruce Mitchell, Chief, Environmental Protection Accounts and Surveys. Data collection for the surveys was conducted by the Operations and Integration Division (Mel Jones, Director) and the Environment Accounts and Statistics Division. Data from Public Institutions Division (Ian Macredie, Director) were also used in the preparation of this report.

The manager of the *Waste Management Industry Survey: Business and Government Sectors 2000* Report was John Marshall. Sheri Vermette was the technical manager.

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Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 nil or zero or too small to be expressed
- P preliminary figures
- r revised figures
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

1 Highlights and Introduction

1.1 Highlights

- In 2000, 1 019 kilograms of non-hazardous waste were generated per capita. Over 31 million tonnes were generated in total for the year. The lowest per capita generation was observed in Nova Scotia (613 kilograms per capita) followed by New Brunswick (749 kilograms per capita).
- Nationally, 24% of the total non-hazardous waste generated was diverted from disposal. British Columbia had the highest diversion rate (30%) followed closely by Quebec (29%).
- A total of 7.5 million tonnes of non-hazardous materials were processed for recycling in 2000. The largest increases on a material basis from 1998 to 2000 were plastics (up 60%) and organics (up 45%). Paper products and ferrous metals accounted for the majority of material processed for recycling, representing respectively 39% and 25% of the 2000 total.
- Almost 23 million tonnes (746 kilograms per capita) of non-hazardous waste were disposed in Canadian landfills and incinerators in 2000. On a provincial basis, Nova Scotia had the lowest per capita disposal rate with 459 kilograms per capita.
- In 2000, 1.1 million tonnes of hazardous waste were treated and disposed in Canada.
- There were 131 more businesses in the waste management industry in 2000 than in 1998. Waste management businesses generated over \$3.4 billion in revenues, up 19% from 1998. The largest source of revenue was from the collection and transportation of waste and recyclable materials, accounting for 67% of total revenues.
- Operating expenditures for waste management businesses increased 21% to total almost \$3 billion. Nationally, tipping fees paid to waste disposal facilities were the largest component of expenses (23%) followed by wages and salaries (22%). Capital expenditures for 2000 increased to over \$427 million, 34% above those for 1998.
- Current expenditures made by governments and other public bodies (see Text Box 1.1) targeted to waste management activities totalled \$1.4 billion in 2000, an increase of 10% from 1998. Almost 60% of these expenditures were payments to private waste management firms.
- Employment for the entire waste management industry, including both private and government sectors, totalled 30 980 persons in 2000. This was an

increase of 12% over the 1998 total. More than three-quarters (78%) were employed by private waste management firms.

1.2 Introduction

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 analyse 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) or reuse, the operation of non-hazardous and hazardous waste disposal facilities, the operation of transfer stations, the operation of recycling 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 (e.g., 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 (Text Box 1.1).

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 arrange-

ments 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.

This report presents the 2000 results from the *Waste Management Industry Surveys: Business and Government Sectors*. Included are estimates of the physical tonnages, types and sources of waste and recyclable materials, specific financial and employment characteristics for the business sector and the local government sector of the waste management industry.

1.3 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 Text Box 1.2 for the definitions used for this report). 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.

Text Box 1.1

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 (in Ontario and Quebec).

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 (e.g. the operation of a materials recycling facility) but sometimes will also provide a service themselves (e.g. the operation of a landfill).

Text Box 1.2

Definitions**Construction and demolition waste (C&D)**

Includes waste materials from the construction and demolition of roads, bridges and buildings such as asphalt, concrete, rubble, wood, gypsum and metal.

Disposal facility

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

Diversification

Diversification represents the quantity of non-hazardous materials diverted from disposal facilities and represents the sum of all materials processed for recycling or reuse at an off-site recycling 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.

Institutional, commercial and industrial (IC&I) waste

Includes materials 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.

Materials for recycling or reuse

Materials managed for processing into new products or cleaned and treated for reuse by other than the generator

Net exports

Net exports represent the total quantity of waste and recyclable materials exported out of the province of origin or out of Canada, minus the total quantity of waste and recyclable materials imported from a different province or country of origin.

Preparing materials for recycling or reuse

Includes sorting, cleaning and reducing volume of recyclable or reusable materials.

Recycling

Recycling is the process whereby a material (e.g., 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 which includes all households 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 taken by the generator to depots, transfer stations and disposal facilities.

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.

Sanitary landfill

At a minimum, this is a landfill that accepts only specified waste and has controls in place (such as fencing and personnel) to monitor the types and quantities of waste that are placed in it. Often this term also denotes those landfills that have systems in place to separate waste and its leachate from the water table or to draw off leachate for treatment and disposal.

Tipping fee

A sum paid to the owner or operator of a disposal facility or a transfer station in return for accepting the material at the facility.

Transfer station

A facility at which wastes transported by vehicles involved in collection are transferred to other vehicles that will transport the wastes to the point of final disposal, recycling or reuse.

Waste

All materials unwanted by their generator. This includes all materials that are intended for recycling, treatment or disposal that are removed without, or with only nominal, remuneration to the waste generator.

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).

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2 Waste Disposal and Material Recycling

This section presents information on the quantities of non-hazardous waste and recyclable materials managed in Canada in 2000. It also discusses diversion and generation by sector as well as the methodologies employed in developing these estimates.

2.1 Off-site disposal of waste

Non-hazardous waste

In 2000, just under 23 million tonnes of non-hazardous waste were disposed in Canadian landfills and incinerators (Table 2.1). This represents an increase of 58 kilograms per capita from 1998; roughly equivalent to an additional six or seven full garbage bags being disposed for each Canadian.

Provincially, Nova Scotia remained the province with the lowest per capita quantity of non-hazardous waste disposed of in the country, (459 kilograms per capita) while Quebec had the highest (936 kilograms per capita).¹ Nova Scotia also had the largest percentage drop in per capita disposal (15%) from 1998. With the exception of Quebec, all other provinces showed slight fluctuations in per capita disposal rates for the same time period. Since 1996, the largest reductions occurred in Nova Scotia (23%), Saskatchewan (8%) and New Brunswick (7%).

Close to one million tonnes of non-hazardous waste were exported out of Canada for disposal in 2000, while Canadian facilities disposed of approximately 97 thousand tonnes of non-hazardous waste imported from other countries.

Non-hazardous waste by source

The majority of non-hazardous waste that was disposed of in 2000 came from the industrial, commercial and institutional sector (51%). The residential, and construction and demolition sectors accounted for 36% and 12% respectively (Table 2.2).

Hazardous waste

Just over 1.1 million tonnes of hazardous waste were treated and disposed of in Canada for the year 2000. Environment Canada reports that 324 thousand tonnes of hazardous waste were exported from Canada and 560 thousand tonnes were imported.²

1. The substantial increase observed in the quantity of waste disposed in Quebec is partly due to the methodology of the survey conducted by the province. Refer to Section 2.2, Quebec local government surveys or for further information please consult the Quebec report *Bilan 2000 de la gestion des matières résiduelles au Québec*, Recyc-Québec <<http://www.RECYC-QUEBEC.gouv.qc.ca>>

2.2 Off-site non-hazardous material generation and diversion

Measurement issues

Waste diversion generally refers to material which has avoided disposal through a combination of processes and actions, and refers to activities which handle the waste in such a way that it is not disposed of in landfills or incinerators.³

However, it must be noted that the generation and diversion figures presented in this report should be used with some caution.⁴ They are a **proxy** for total waste generation and diversion in Canada. There are several points to consider when using these data.

First, as with the recycling and disposal data, **these figures include only materials that were processed for recycling or reuse 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.

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 (e.g., 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

2. Environment Canada, Transboundary Movement Division, 2000, *Resilog* June 2001, Volume 14, No. 2.

3. GAP Team, June 15, 2000, *Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste Flow. Development of a Methodology for Measurement of Residential Waste Diversion in Canada, Draft*. Toronto, p. 15.

4. See Section 5.3 on data accuracy

management industry as defined by the North American Industry Classification System (NAICS).¹

Fifth, contaminated soil that is used as landfill cover or some other beneficial purpose at a disposal facility (e.g. 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 (e.g. soil, brush, stumps).

Quebec local government surveys

It should be noted that the province of Quebec conducts its own waste management survey, and that these data are used by Statistics Canada in order to reduce response burden. Some differences exist between the Quebec surveys and the Statistics Canada surveys and these can affect the comparability of data.

The key difference is in the treatment of the respondents that were unable to report. The data published by Statistics Canada have been adjusted to account for non-response (See Section 5 Methodology for further details). The data published by the province of Quebec are based only on the data reported by the respondents. For 2000, 87% of those surveyed by the province were able to respond; an increase of 19% from the 1998 survey. Therefore, any year to year comparisons with data from Quebec should be made with caution. National totals presented in this report, which include the data from the Quebec survey, are also affected to some degree.

2.3 Off-site material recycling

Types of materials

Just over 7.5 million tonnes of material were processed for recycling in 2000, an increase from the 1998 total of 6.7 million tonnes² (Tables 2.3 and 2.4 and Text Box 2.1). In 1998, 34% of the material prepared for recycling was processed in Quebec while 33% was processed in Ontario. Quebec and Ontario continued to process the highest proportions of recycled material in 2000, accounting for 37% and 32% respectively.

The most common material prepared for recycling was paper products (includes newsprint, boxboard and old corrugated cardboard) in both 1998 (40%) and 2000 (39%). Ferrous metals such as iron and steel accounted for an

1. Text Box 5.1 provides more information on NAICS.

2. Recycling quantities for 1998 have been revised due to improvements made to the classification of recyclable materials. Clarifications have been made as to what materials can and can not be classified as recyclable. Consequently, generation values for 1998 have also been revised (Text Box 2.3). Note that recycling data prior to 1998 have *not* been revised and are therefore not comparable to either the 2000 data or the revised 1998 data.

Text Box 2.1

Notes on Recycling Data

• Quebec recycling and disposal data

The province of Quebec administers its own survey programs to collect physical data on waste disposal and material recycling. There are some methodological differences between the data published by the province of Quebec and by Statistics Canada (See Section 2.2, Quebec local government surveys). Therefore, it must be noted that any inter-provincial comparisons with regard to data from Quebec should be made with caution. This caution should be exercised when using data from the tables in Section 2. Please see the footnotes in these tables where applicable. Table 5.3 shows information on the reliability of data within specific tables.

• Inclusion and exclusion of data

Recycling data include those materials that were processed for recycling or reuse at publicly or privately owned material recycling facilities. These data do not include materials that were processed by a business or public body on site as part of its production process (e.g., steel at a foundry or paper at a pulp and paper mill) or as part of a secondary economic activity. Consequently, the recycling that is performed by the industrial sector is underestimated in the data contained herein.

Text Box 2.2

Note on Composting Data

These data include those centralized programs that are operated by public waste management organizations such as local governments or waste management boards or commissions as well as those facilities that are privately owned and operated. They do not include estimates for non-centralized composting programs such as backyard composting bins.

almost equivalent proportion of the total recycled material for the two years; 24% in 1998 and 25% in 2000.

Almost 284 thousand tonnes of recyclable material was exported out of Canada during 2000.

Central composting

Organic materials composted in off-site facilities comprised 13% of the total materials prepared for recycling in 2000 (Table 2.3 and Text Box 2.2). Totalling approximately 980 thousand tonnes, this represented an increase of 45% over the quantity of material composted in 1998 (Table 2.4). This growth can be attributed to the increased popularity of centralized composting programs in many areas of Canada.

Some municipal composting programs provide collection services as well as training seminars to promote composting in their area. The proliferation and promotion of these programs has provided better access for many organic waste generators, both residential and non-residential.

As of November, 1998 Nova Scotia banned landfilling and incineration of organic waste. This ban stimulated composting programs across the province and is the primary reason that this province had the largest increase in the quantity of material composted from 1998 to 2000.

Sources of recyclable materials

The proportions of recyclable materials collected from each sector stayed relatively stable from 1998 to 2000 (Tables 2.5 and 2.6). Non-residential sources were responsible for 67% of all materials collected and transported for recycling in 2000, up slightly from 65% in 1998. The largest source of recycled materials for both years was the industrial, commercial and institutional sector.

Generation and diversion

Over 31 million tonnes of non-hazardous waste generated in Canada were managed off-site in 2000 (Table 2.7). This includes materials that were disposed of in off-site landfills or incinerators and materials that were diverted from disposal by an outside waste management services provider (Text Box 2.3).

As in 1998, in 2000 most of these materials were generated from non-residential sources such as industrial operations, institutions, commercial establishments and construction and demolition projects (63% compared to 65% in 1998). Provincially, the residential share of total generation was highest in New Brunswick (48%) and lowest in Alberta (26%).

Total tonnage of materials generated is a good starting point to begin looking at diversion data, but by examining the data on a *per capita* basis, a better picture can be drawn of Canadian non-hazardous waste generation, disposal and diversion characteristics (Table 2.9).

Nationally, the average amount of non-hazardous waste generated in 2000, from both residential and non-residential sources was 1 019 kilograms for each Canadian. Of this amount, 746 kilograms were disposed of in either a landfill or incinerator, 244 kilograms were diverted from disposal, and the remaining 29 kilograms were exported out of the country. While total generation of waste is up from 1998, the proportion of waste diverted compared to that disposed has remained relatively stable. Provincially, Nova Scotia generated the lowest quantity of waste per capita (613 kilograms), followed by New Brunswick (749 kilograms).

Text Box 2.3

Measuring Generation and Diversion

- Generation = Diversion + Disposal + (Exports-Imports)
- Diversion = Recycling + Composting + Reuse
- Diversion Rate = Diversion/Generation x 100 (%)

The recycling and composting portions of diversion are covered in Tables 2.4 and 2.5 (*Non Hazardous Materials Prepared for Recycling or Reuse*). However, as noted previously, these data only include those materials processed by firms and governments that carry out waste management activities and exclude a number of reuse activities.

Discussions are underway both at the national (GAP waste flow discussions) and the international (North American Product Classification System initiative) levels to standardize the methodologies and definitions used in the calculations of waste flows and in the way one defines the products that the waste management industry produces. Through these efforts, the formulae presented above will be more completely reflected in future survey results. Many of the definitions and concepts that have been used in these two initiatives have been applied to this Report.

The highest per capita diversion figures were reported by Quebec (375 kilograms), followed by British Columbia (278 kilograms) and Saskatchewan (263 kilograms). These three provinces held the same top three positions in 1998.

Per capita diversion rates were calculated for each province by dividing the per capita diversion by the per capita generation. Although the diversion rate for British Columbia declined from 1998 to 2000 (33% to 30%), this province still had the highest rate of diversion among the provinces. Quebec came a close second with 29% of all non-hazardous waste generated per capita being diverted from disposal.

The data included in Table 2.9 include materials from all sources covered by these surveys. When the diversion data are separated into residential and non-residential sources and the residential sector is more closely examined, a different picture emerges (Tables 2.10 and 2.11).

Nationally, 23% of the non-hazardous waste generated by the residential sector was diverted from disposal, down from 25% in 1998. On a provincial basis, British Columbia diverted the largest proportion of residential waste in 2000 and 1998 (34% and 37% respectively).

Table 2.1
Disposal of Waste by Province and Territory, 2000¹

Province/Territory	Total waste disposed			Population ²	Waste disposed per capita		
	1996	1998	2000	2000	1996	1998	2000
	tonnes			persons	kilograms per capita		
Newfoundland and Labrador	372 324	366 280	409 599	537 877	673	671	762
Prince Edward Island	x	x	x	138 341	x	x	x
Nova Scotia	553 638	502 577	432 487	942 315	595	537	459
New Brunswick	505 957	468 571	472 612	755 617	672	623	625
Quebec ³	5 491 000	5 537 465	6 912 000	7 381 766	754	755	936
Ontario	6 913 786	6 988 157	7 491 581	11 697 569	623	612	640
Manitoba	947 884	964 726	938 624	1 146 444	836	848	819
Saskatchewan	900 210	848 408	828 359	1 021 963	883	827	811
Alberta	2 435 884	2 527 817	2 750 004	3 009 860	876	869	914
British Columbia	2 413 528	2 458 484	2 592 191	4 060 133	622	614	638
Yukon Territory, Northwest Territories and Nunavut ⁴	x	x	x	98 949	x	x	x
Canada	20 673 903	20 840 883	22 985 027	30 790 834	697	688	746

Notes:

Figures may not add up to totals due to rounding.

1. Total amount of non-hazardous waste disposed of in public and private waste disposal facilities. Does not include wastes disposed in hazardous waste disposal facilities or wastes managed by the waste generator on site.

2. Statistics Canada, CANSIM II, Table 051-0001, "Estimates of population, by age group and sex, Canada, provinces and territories, annual".

3. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

4. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.2
Disposal of Waste by Source and by Province and Territory, 2000¹

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources	Total waste disposed	
				1998	2000
				tonnes	
Newfoundland and Labrador	x	119 628	x	366 280	409 599
Prince Edward Island	x	x	x	x	x
Nova Scotia	188 768	x	x	502 577	432 487
New Brunswick	228 463	x	x	468 571	472 612
Quebec ²	2 626 560	3 594 240	691 200	5 537 465	6 912 000
Ontario	2 931 052	3 718 322	842 208	6 988 157	7 491 581
Manitoba	307 806	x	x	964 726	938 624
Saskatchewan	328 709	x	x	848 408	828 359
Alberta	665 975	x	x	2 527 817	2 750 004
British Columbia	766 458	1 525 734	299 999	2 458 484	2 592 191
Yukon Territory, Northwest Territories and Nunavut ³	x	x	x	x	x
Canada	8 350 076	11 798 757	2 836 194	20 840 883	22 985 027

Notes:

Figures may not add up to totals due to rounding.

1. Sources of non-hazardous waste disposed of are derived from reported sources of non-hazardous waste collected and transported for disposal.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.3
Materials Prepared for Recycling by Type and by Province and Territory, 2000¹

Type of Materials	Nfld.Lab.	P.E.I.	N.S.	N.B.	Que. ²	Ont.	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Canada
	tonnes											
Newsprint	x	x	21 251	5 139	..	444 301	12 163	6 967	58 809	105 465	x	657 813
Cardboard and boxboard	x	x	7 789	7 464	..	275 976	17 443	9 449	43 689	172 120	x	555 059
Mixed paper	x	x	14 400	4 243	830 000 ³	x	x	15 044	28 748	212 322	x	1 725 472
Glass	x	x	2 845	x	91 000	133 201	3 745	x	42 289	34 047	x	344 353
Ferrous metals	x	x	2 506	x	1 138 800	276 782	x	x	x	137 470	0	1 904 616
Copper and aluminum	x	x	172	x	..	19 110	2 293	x	x	1 856	x	42 596
Other metals	500	0	2 544	2 125	154 700 ⁴	x	x	x	11 344	38 400	x	327 557
Plastics	x	x	1 991	x	63 000	31 719	1 479	x	9 686	40 415	x	171 018
Construction and demolition	0	x	12 329	x	128 100	161 407	x	x	x	170 408	0	501 624
Organics	0	x	59 780	x	277 000	282 264	4 398	1 473	131 064	180 122	x	980 787
Other materials	x	0	19 995	x	86 600	80 236	9 517	x	47 686	35 490	x	290 641
Total	43 010	x	145 602	114 896	2 769 200	2 371 076	215 671	268 830	422 595	1 128 115	x	7 501 536

Notes:

Figures may not add up to totals due to rounding.

1. This information covers only those companies and local waste management organizations that reported they prepared non-hazardous material for recycling.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

3. Includes all paper fibres.

4. Includes copper and aluminum.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.4
Materials Prepared for Recycling by Type and by Province and Territory, 1998¹

Type of Materials	Nfld.Lab.	P.E.I.	N.S.	N.B.	Que. ²	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T. ³	Canada
	tonnes											
Newsprint	1 386	x	21 188	4 449	..	401 020	16 364	4 906	43 818	156 012	x	650 191
Cardboard and boxboard	x	x	16 694	10 607	..	186 157	9 228	7 219	30 832	301 816	x	582 031
Mixed paper	x	x	x	5 474	777 800 ⁴	463 082	x	x	32 000	135 024	x	1 458 272
Glass	0	x	7 068	x	101 000	104 836	3 392	x	37 984	x	x	319 711
Ferrous metals	x	x	2 414	x	915 500	283 360	x	x	31 524	119 277	x	1 616 854
Copper and aluminum	x	x	x	x	..	27 843	2 139	x	x	x	x	72 809
Other metals	1 106	x	1 006	2 500	107 070 ⁵	49 437	x	x	11 488	54 165	x	289 963
Plastics	4 071	x	7 334	10 550	23 265	24 889	2 062	3 531	9 213	20 022	x	107 080
Construction and demolition	x	227	29 773	x	126 102	258 476	0	554	5 278	144 556	x	569 089
Organics	x	x	16 751	x	174 500	282 337	x	x	x	141 305	x	678 122
Other materials	4 613	365	11 272	x	67 600	135 873	x	5 344	55 718	99 084	x	392 650
Total	40 928	x	128 036	103 866	2 292 837	2 217 310	199 648	219 704	288 878	1 230 049	x	6 736 771

Notes:

Figures may not add up to totals due to rounding.

1. The figures in this table have been revised from those previously published and cover only those companies and local waste management organizations that reported they prepared non-hazardous material for recycling.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

4. Includes all paper fibres.

5. Includes copper and aluminum.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.5
Materials Prepared for Recycling by Source and by Province and Territory, 2000¹

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources	All sources
	tonnes			
Newfoundland and Labrador	x	x	x	43 010
Prince Edward Island	x	x	x	x
Nova Scotia	77 735	x	x	145 602
New Brunswick	44 697	x	x	114 896
Quebec ²	830 760	1 246 140	692 300	2 769 200
Ontario	876 259	1 361 743	133 073	2 371 076
Manitoba	50 416	x	x	215 671
Saskatchewan	52 141	x	x	268 830
Alberta	156 335	x	x	422 595
British Columbia	402 209	x	x	1 128 115
Yukon Territory, Northwest Territories and Nunavut	x	x	0	x
Canada	2 519 080	4 016 210	977 254	7 501 536

Notes:

Figures may not add up to totals due to rounding.

1. The figures in this table cover only those companies and local waste management organizations that reported non-hazardous material recycling activities.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.6
Materials Prepared for Recycling by Source and by Province and Territory, 1998¹

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources	All sources
	tonnes			
Newfoundland and Labrador	x	x	x	40 928
Prince Edward Island	x	x	x	x
Nova Scotia	44 730	x	x	128 036
New Brunswick	40 937	x	x	103 866
Quebec ²	687 851	1 031 777	573 209	2 292 837
Ontario	880 411	1 095 302	241 597	2 217 310
Manitoba	65 884	x	x	199 648
Saskatchewan	72 502	x	x	219 704
Alberta	99 201	x	x	288 878
British Columbia	423 515	x	x	1 230 049
Yukon Territory and Northwest Territories ³	x	x	x	x
Canada	2 341 817	3 387 361	1 007 595	6 736 771

Notes:

Figures may not add up to totals due to rounding.

1. The figures in this table have been revised from those previously published and cover only those companies and local waste management organizations that reported non-hazardous material preparation activities.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.7
Quantity of Total Waste Materials Generated, by Source and by Province and Territory, 2000

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources tonnes	Net exports	Total generation
Newfoundland and Labrador	x	x	x	0	452 610
Prince Edward Island	x	x	x	0	x
Nova Scotia	266 503	287 025	24 561	0	578 089
New Brunswick	273 159	279 572	x	x	566 016
Quebec ¹	3 457 320	4 840 380	1 383 500	..	9 681 200
Ontario	3 807 311	5 080 065	975 281	950 917	10 813 574
Manitoba	358 222	x	x	0	1 154 295
Saskatchewan	380 851	x	x	0	1 097 190
Alberta	822 310	1 618 907	x	x	3 115 536
British Columbia	1 168 668	x	x	x	3 740 593
Yukon Territory, Northwest Territories and Nunavut	x	x	x	0	x
Canada	10 869 156	15 814 967	3 802 440	892 649	31 379 212

Notes:

Figures may not add up to totals due to rounding.

1. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.8
Quantity of Total Waste Materials Generated, by Source and by Province and Territory, 1998^r

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources tonnes	Net exports	Total generation
Newfoundland and Labrador	x	x	x	x	409 208
Prince Edward Island	x	x	x	0	x
Nova Scotia	227 961	x	x	x	632 812
New Brunswick	223 907	x	x	x	572 487
Quebec ¹	2 764 605	3 912 814	1 152 883	..	7 830 302
Ontario	3 406 992	4 787 583	1 060 226	420 246	9 675 047
Manitoba	343 570	x	x	x	1 165 738
Saskatchewan	359 219	x	x	x	1 068 811
Alberta	715 471	x	x	x	2 816 695
British Columbia	1 131 244	x	x	x	3 747 011
Yukon and Northwest Territories ²	x	x	x	0	x
Canada	9 398 933	14 428 161	3 814 899	470 032	28 112 025

Notes:

Figures may not add up to totals due to rounding.

1. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

2. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.9
Waste Disposal, Diversion and Generation per capita, all Sources, by Province and Territory, 2000

Province/Territory	Disposal ¹		Diversion		Generation		Rate of diversion	
	1998	2000	1998	2000	1998	2000	1998	2000
	kilograms per capita						percent	
Newfoundland and Labrador	671	762	75	80	750	841	10	10
Prince Edward Island	x	x	x	x	x	x	x	x
Nova Scotia	537	459	137	155	676	613	20	25
New Brunswick	623	625	138	152	761	749	18	20
Quebec ²	755	936	313	375	1 068	1 312	29	29
Ontario	612	640	194	203	843	924	23	22
Manitoba	848	819	175	188	1 024	1 007	17	19
Saskatchewan	827	811	214	263	1 042	1 074	21	25
Alberta	869	914	99	140	968	1 035	10	14
British Columbia	614	638	307	278	932	921	33	30
Yukon Territory, Northwest Territories and Nunavut ³	x	x	x	x	x	x	x	x
Canada	688	746	222	244	926	1 019	24	24

Notes:

Figures may not add up to totals due to rounding.

1. Total amount of non-hazardous waste disposed of in public and private waste disposal facilities. Does not include waste disposed of in hazardous waste disposal facilities nor waste managed by the waste generator on site.

2. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.10
Percentage of Waste Diverted from Disposal, by Source and by Province and Territory, 2000

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources	percent	
					All sources
Newfoundland and Labrador	7	x	x		10
Prince Edward Island	25	x	x		x
Nova Scotia	29	x	x		25
New Brunswick	16	x	25		20
Quebec ¹	24	26	50		29
Ontario	23	27	14		22
Manitoba	14	24	x		19
Saskatchewan	14	33	x		25
Alberta	19	x	x		14
British Columbia	34	x	x		30
Yukon Territory, Northwest Territories and Nunavut	x	x	0		x
Canada	23	25	26		24

Note:

1. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 2.11
Percentage of Waste Diverted from Disposal, by Source and by Province and Territory, 1998^f

Province/Territory	Residential sources	Industrial, commercial and institutional sources	Construction and demolition sources	All sources
	percent			
Newfoundland and Labrador	x	x	x	10
Prince Edward Island	x	x	x	x
Nova Scotia	20	x	37	20
New Brunswick	18	x	x	18
Quebec ¹	25	26	50	29
Ontario	26	23	25	23
Manitoba	19	x	x	17
Saskatchewan	20	x	x	21
Alberta	14	x	x	10
British Columbia	37	34	x	33
Yukon Territory and Northwest Territories ²	x	x	x	x
Canada	25	23	28	24

Notes:

1. Figures are derived from the results of surveys conducted by the province. For further information refer to Text Box 2.1

2. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

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3 Business Sector Waste Management Firms : Financial and Employment Characteristics

This section presents a number of financial and employment statistics for the business sector of the waste management industry in Canada for 2000. These include revenues (as well as revenue sources), capital and operating expenditures, employment and the types of waste management activities in which waste management firms engage.

3.1 Revenues

In 2000 the revenues of the waste management industry business sector totalled \$3 439 million. This translates to a 19% growth rate from 1998 levels. The highest revenues were once again reported in Ontario at \$1 556 million or 45% of the total national operating revenues for the sector. Firms in Quebec reported an additional 21% of the total followed by those in British Columbia and Alberta with 14% and 11% respectively.

The number of waste management firms in the business sector increased 8% from 1998. However, even with an increase of 44% in the number of mid-sized firms (with 20-49 employees) the waste management industry remains concentrated in the hands of a relatively small number of large firms. The 71 largest businesses (those with 50 or more employees) reported 60% of the total revenues although they accounted for only 4% of the total number of businesses in the industry. The 1 502 small firms (under 20 employees) accounted for only 21% of the revenues (Tables 3.1 and 3.2).

Details on waste management revenues by type of activity for the surveyed businesses are presented in Table 3.2. The collection and transportation of waste for disposal was the largest source of revenues for the business sector of the waste management industry, accounting for 51% of total revenues. Recycling activities ranked second in terms of revenue generated. The collection, transportation and preparation of materials for recycling and reuse accounted for 24% of waste management revenues. The operation of a disposal facility generated 9% of revenues.

On a provincial basis, total revenues were up over 1998 values for all provinces. Also, every province received at least 50% of their total business operating revenues from waste collection and transportation (disposal plus recycling or reuse). The highest proportion of revenues from this source was reported by the Yukon Territory, Northwest Territories and Nunavut, with 85% of the combined

revenues for these three territories coming from collection activities. Nova Scotia and Ontario each reported that 70% of their revenues were received from this source.

The distribution of operating revenues can vary depending on the size of a business. For example, while the collection and transportation of waste for disposal was the largest source of revenue for all firm size groups, smaller businesses received a higher proportion of their revenues from this source than did other business size-groups. By contrast, less than 1% of small business revenues were derived from the management of a hazardous waste facility compared to 4% for both large and medium-sized businesses. The relatively low capital investment required for waste collection activities makes it a more attractive option to smaller businesses. These smaller firms may have difficulties raising the large capital investments required for other activities such as the management of certain types of hazardous wastes.

Revenue sources

The majority of revenues from the collection and transportation of waste came from institutional, commercial and industrial (IC&I) clients (77%), while 18% came from residential sources and 5% from other sources. Recyclables collection and transportation activities saw a similar pattern. However, the difference between the percentage of revenues coming from IC&I clients (57%) and that from residential sources (38%) is not as great. (Table 3.3).

The large percentage of revenues received from IC&I clients can be explained by the type of collection they require. Unlike residential collection, where homes are side by side along a street, institutional, commercial and industrial buildings may be spread out over a large area. As a result, a truck collecting IC&I waste will have to travel further to collect these wastes, incurring higher operating expenses. These may be reflected in higher fees being charged to IC&I clients relative to residential clients. Another contributing factor may be that the type of waste collected from IC&I clients could require special handling, for example sharps (broken glass, razors, syringes) or biomedical waste from hospitals.

3.2 Waste management activities¹

Businesses in the waste management industry provide a variety of services. The most common service activity reported by the industry for 2000 was the collection and transportation of waste for disposal (73% of firms) followed by the collection and transport of materials for recycling or reuse (58% of firms). These results are virtually unchanged from 1998. Other frequently reported activities include the operation of a material recovery facility (MRF) or other type of recyclables preparation activity (29%), the operation of a waste transfer facility (15%) and the operation of a landfill (13%).

Examining the data by employment size groupings, the primary activity reported by small-sized firms was the collection and transportation of waste for disposal (75% as opposed to 70% and 67% for medium and large sized firms respectively). Medium and large-sized firms reported a higher involvement in the collection and transportation of recyclables (72% and 75% respectively) than small-sized firms (51%).

There are definite relationships between firm size and the specific types of activities upon which the business concentrates. Similarly, there appears to be a relationship between the *number* of activities undertaken by a firm and its size. Large firms tend to be more diversified, performing a number of the activities that make up the waste management industry, while smaller businesses tend to focus on only one or two activities.

To illustrate this point, only 13% of large firms reported performing one waste management activity, while 49% reported involvement in three or more activities in 2000. In contrast, 36% of small firms reported they carried out just one activity and only 27% reported more than three activities. Overall, 31% of all businesses reported carrying out one waste management activity and 32% reported three or more activities.

3.3 Operating and capital expenditures

Operating expenditures

Total operating expenditures of the waste management businesses for 2000 increased by 21% over 1998. This substantial increase is reasonable given the increase in local governments contracting private firms for waste management services they used to provide themselves

1. This section presents reported data only.

(Table 4.3). This, in addition to the overall increase in the quantity of waste generated in 2000, contributed to the rise in operating expenditures for the year.

A breakdown of these expenses is shown in Table 3.4. Nationally, tipping fees paid to waste disposal facilities were the largest component of expenses (23%) followed closely by wages and salaries (22%).

Provincially the distribution of operating expenses varied, however, disregarding the 'Other' category²; the largest expense in each province was either wages and salaries or tipping fees. Wages and salaries were the largest expense in eight of the provinces.

Similarly, the highest proportion of the total operating expenses for large businesses went towards tipping fees (26%) followed by wages and salaries (21%). The reverse is true for medium and small-sized businesses; wages and salaries represented the highest proportion of operating expenses (24% and 23% respectively) followed by tipping fees (17% and 21% respectively). Note that the 'Other' category has again been disregarded.

Capital expenditures

For 2000, waste management firms invested over \$427 million in capital, up 34% from 1998. While capital expenditures tend to fluctuate from one year to the next, this increase may have been influenced by the greater demand for private waste management services by government bodies, as well as the increase in the amount of waste generated. The largest percentage increases were observed in the investment in maintenance and repairs (78%) and construction and refurbishing (44%). However, despite these increases, waste management businesses still directed the largest proportion of their capital investment towards machinery and equipment and vehicles (31% each).

There are marked variations between levels of capital expenditures across the provinces (Table 3.5). Firms operating in Ontario reported the highest level of capital expenditures with an average of \$406 thousand per firm. New Brunswick firms came second with an average investment of \$307 thousand per firm. The lowest levels of capital expenditures per business were reported by Newfoundland (\$104 thousand) and Manitoba (\$113 thousand).

Looking at capital expenditures by firm size, it is not surprising that the average capital investment per large-size firm is larger than that of smaller-sized businesses (\$2.6 million and \$105 thousand respectively). While

2. The proportion of operational expenditures classified as 'Other' was quite high for the 2000 reference year. As a result the 2002 questionnaire will be modified to include additional categories to better capture what expenditures are being made.

smaller-sized firms directed the bulk of their capital expenditures to machinery and equipment (33%), investment in construction and refurbishing came a close second at 31%; a higher proportion than that invested by the medium and large-sized firms (10% and 21% respectively).

3.4 Employment and number of businesses

Over 24 thousand persons were employed by waste management businesses in 2000 (Table 3.6). This represents an 18% increase over 1998 employment levels. Ontario and Quebec firms employed the majority of these workers, accounting for over half of the total business sector employment (40% in Ontario and 23% in Quebec). British Columbia (13%) and Alberta (11%) also accounted for a substantial share of the total.

Interestingly, most of those employed by the private waste industry work for a small number of large-sized firms. While these firms make up only 4% of the number of businesses in the sector, they account for 53% of the total employment. Contrarily, small-sized firms make up 86% of the total number of firms in the sector, and employ only 27% of the private sector work force.

The total number of waste management businesses has also increased. The medium-sized employment group saw the largest growth with an increase of 44%, however large and small-sized firms also increased (20% and 5% respectively). This increase coincides with an overall growth in the waste management industry.

Table 3.1

Waste Management Industry: Business Sector Characteristics by Province and Territory, 1998 and 2000¹

Province/Territory	Businesses ²		Total employees ³		Operating revenues ⁴		Operating expenditures ⁴		Capital expenditures ⁴	
	1998	2000	1998	2000	1998	2000	1998	2000	1998	2000
	number						thousand dollars			
Newfoundland and Labrador	42	47	345	456	18 799	22 636	14 657	20 056	2 315	4 906
Prince Edward Island	10	8	x	104	4 912	7 200	10 944	6 623	x	x
Nova Scotia	86	84	740	850	63 632	80 401	54 620	74 992	10 825	18 872
New Brunswick	81	76	433	739	43 398	53 910	39 610	50 950	5 829	23 308
Quebec	548	579	5 164	5 536	586 196	715 832	528 349	663 160	90 754	91 515
Ontario	397	437	7 964	9 606	1 357 171	1 555 995	1 161 136	1 306 588	116 732	177 428
Manitoba	45	49	x	565	80 093	90 706	49 713	60 101	9 238	5 546
Saskatchewan	42	48	425	475	45 850	58 785	33 935	42 064	4 996	6 516
Alberta	133	174	2 042	2 736	292 052	377 943	252 941	315 733	41 870	38 588
British Columbia	265	260	2 753	3 028	381 303	464 941	323 405	444 382	34 787	47 113
Yukon Territory, Northwest Territories and Nunavut ⁵	12	20	x	102	5 099	10 911	4 153	9 555	x	x
Employment size group										
Under 20 employees	1 433	1 502	6 187	6 619	662 014	726 073	580 112	637 370	94 219	158 320
20 to 49 employees	114	164	3 344	4 780	353 648	636 696	338 724	588 425	48 778	86 020
50 and more employees	59	71	10 898	12 798	1 862 841	2 076 491	1 554 626	1 768 408	176 324	182 922
Canada	1 606	1 737	20 429	24 197	2 878 503	3 439 260	2 473 462	2 994 203	319 320	427 262

Notes:

Figures may not add up to totals due to rounding.

1. Includes administrative data for businesses that were below the survey threshold for inclusion.

2. As businesses may operate in more than one province or territory, the national totals will not equal the sum of the provincial totals.

3. Includes full and part-time employees.

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

5. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 3.2

Operating Revenues of Waste Management Businesses by Activity and by Province and Territory, 2000¹

Province/Territory	Collection and transportation for disposal	Collection and transportation for recycling or reuse	Operation of a waste transfer facility	Preparation of materials for recycling or reuse	Operation of a disposal facility	Operation of a hazardous waste facility	Sewage treatment	Sale of recovered materials	Other waste management revenues	Total operating revenues	
										1998	2000
	thousand dollars										
Newfoundland and Labrador	12 608	x	988	2 258	x	603	117	1 683	610	18 799	22 636
Prince Edward Island	546	x	104	260	x	x	9	9	92	4 912	7 200
Nova Scotia	48 352	8 086	3 174	10 013	5 555	658	266	2 323	1 972	63 632	80 401
New Brunswick	25 031	5 703	4 959	4 885	5 008	1 395	258	3 305	3 366	43 398	53 910
Quebec	371 144	62 139	41 326	38 566	86 153	70 596	5 306	12 748	27 856	586 196	715 832
Ontario	823 368	267 285	145 115	107 432	124 710	17 220	4 800	23 960	42 105	1 357 171	1 555 995
Manitoba	42 250	16 992	1 168	13 518	5 545	x	166	x	2 621	80 093	90 706
Saskatchewan	30 773	9 261	872	5 876	x	x	117	x	5 564	45 850	58 785
Alberta	191 797	62 690	16 107	37 966	38 398	13 647	954	4 772	11 613	292 052	377 943
British Columbia	203 526	104 837	23 874	65 142	30 247	5 489	1 798	20 679	9 347	381 303	464 941
Yukon Territory, Northwest Territories and Nunavut ²	8 753	475	199	352	399	x	20	x	706	5 099	10 911
Employment size group											
Under 20 employees	395 333	49 884	63 477	48 941	91 043	3 460	9 333	4 668	59 934	662 014	726 073
20 to 49 employees	280 681	138 740	36 167	77 412	26 916	28 152	3 457	34 548	10 624	353 648	636 696
50 and more employees	1 082 134	354 332	138 242	159 916	184 544	78 779	1 020	42 231	35 293	1 862 841	2 076 491
Canada	1 758 148	542 956	237 886	286 269	302 503	110 391	13 811	81 446	105 851	2 878 503	3 439 260

Notes:

Figures may not add up to totals due to rounding.

1. Includes administrative data for businesses that were below the survey threshold for inclusion.

2. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 3.3

Waste and Recyclables Collection and Transportation Activities of Businesses by Source of Revenue and by Province and Territory, 2000

Province/Territory	Source of revenue for waste collection			Source of revenue for recyclables collection		
	Residential	Industrial, commercial and institutional	Other	Residential	Industrial, commercial and institutional	Other
Newfoundland and Labrador	11	84	5	40	56	5
Prince Edward Island	22	68	9	29	58	13
Nova Scotia	20	73	7	40	56	4
New Brunswick	27	68	5	33	58	9
Quebec	27	68	5	41	48	10
Ontario	14	80	6	29	66	5
Manitoba	17	81	2	16	82	1
Saskatchewan	16	80	4	10	87	3
Alberta	13	81	6	58	39	3
British Columbia	20	74	6	53	43	4
Yukon Territory, Northwest Territories and Nunavut	32	60	8	27	69	3
Canada	18	77	5	38	57	5

Note:

Figures may not add up to totals due to rounding.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 3.4

Operating Expenditures by Waste Management Businesses by Type and Province and Territory, 2000

Province/Territory	Wages and salaries		Benefits	Fuel and electricity	Other materials and supplies		Maintenance and repairs	Depreciation	Tipping fees	Operating licences and purchased services		Overhead and administration	Other expenses	Total operating expenses	
	salaries	benefits			supplies	and				permits	services			1998	2000
	thousand dollars														
Nfld.Lab.	6 204	559	1 035	1 818	1 381	1 231	3 068	x	0	x	4 452	14 657	20 056		
P.E.I.	1 832	353	502	834	737	672	690	30	0	0	972	10 944	6 623		
N.S.	17 938	2 120	3 728	7 537	6 386	4 869	19 476	398	x	x	11 691	54 620	74 992		
N.B.	12 448	1 202	2 779	4 668	3 634	3 368	11 059	444	x	x	8 924	39 610	50 950		
Que.	144 645	16 878	32 344	41 083	56 913	71 131	123 587	4 145	53 806	3 981	114 646	528 349	663 160		
Ont.	285 978	45 840	56 914	122 151	111 815	110 596	362 523	10 034	9 527	35 746	155 463	1 161 136	1 306 588		
Man.	12 921	2 158	2 762	8 714	4 465	3 734	16 898	231	x	x	6 416	49 713	60 101		
Sask.	11 316	1 148	2 014	3 528	3 333	2 899	7 057	372	0	1 035	9 364	33 935	42 064		
Alta.	72 219	9 084	13 643	26 643	22 805	23 460	55 354	1 766	2 429	12 774	75 556	252 941	315 733		
B.C.	97 770	13 670	17 698	49 562	31 814	24 974	94 647	2 216	2 838	5 441	103 752	323 405	444 382		
Y.T., N.W.T. and Nvt. ¹	2 913	501	518	423	619	505	1 069	x	x	x	2 811	4 153	9 555		
Employment size group															
Under 20 employees	149 271	16 075	36 367	41 467	46 197	38 529	136 440	4 856	13 015	27 525	127 629	580 112	637 370		
20 to 49 employees	142 392	15 398	23 113	92 245	39 412	34 692	98 406	6 086	15 429	10 250	111 004	338 724	588 425		
50 and more employees	374 521	62 040	74 458	133 248	158 294	174 219	460 584	8 916	42 939	23 776	255 414	1 554 626	1 768 408		
Canada	666 184	93 513	133 937	266 960	243 903	247 440	695 429	19 858	71 383	61 550	494 047	2 473 462	2 994 203		

Notes:

Figures may not add up to totals due to rounding.

1. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 3.5

Capital Expenditures by Waste Management Businesses by Type and by Province and Territory, 2000¹

Province/Territory	Vehicles	Other machinery and equipment	Construction and refurbishing of facilities	Maintenance and repairs	Other	Total capital expenditures		Average capital expenditures per business	
						1998	2000	1998 ^r	2000
thousand dollars									
Newfoundland and Labrador	1 230	1 488	1 196	821	171	2 315	4 906	55	104
Prince Edward Island	x	x	114	x	x	x	x	x	x
Nova Scotia	4 588	10 637	2 348	936	362	10 825	18 872	126	225
New Brunswick	6 653	9 619	3 398	2 767	871	5 829	23 308	72	307
Quebec	26 733	25 614	26 876	8 988	3 305	90 754	91 515	166	158
Ontario	56 033	50 141	44 168	12 262	14 825	116 732	177 428	294	406
Manitoba	2 648	1 215	1 082	364	236	9 238	5 546	205	113
Saskatchewan	2 673	1 579	1 604	471	189	4 996	6 516	119	136
Alberta	13 976	13 367	6 153	3 549	1 544	41 870	38 588	315	222
British Columbia	15 394	14 484	7 669	7 780	1 786	34 787	47 113	131	181
Yukon Territory, Northwest Territories and Nunavut ²	x	x	1 339	x	x	x	x	x	x
Employment size group									
Under 20 employees	36 760	52 440	49 563	15 376	4 180	94 219	158 320	66	105
20 to 49 employees	27 506	33 126	8 506	10 712	6 171	48 778	86 020	428	525
50 and more employees	69 723	48 442	37 877	13 446	13 434	176 324	182 922	2 989	2 576
Canada	133 989	134 009	95 946	39 534	23 784	319 320	427 262	199	246

Notes:

Figures may not add up to totals due to rounding.

r Revised figures.

1. Includes administrative data for businesses that were below the survey threshold.

2. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 3.6

Employment by Waste Management Businesses and by Province and Territory, 1998 and 2000

Province/Territory	Businesses ¹		Full-time employees		Part-time employees		Total employees ²	
	1998	2000	1998	2000	1998	2000	1998	2000
number								
Newfoundland and Labrador	42	47	235	400	110	56	345	456
Prince Edward Island	10	8	84	x	x	x	x	104
Nova Scotia	86	84	685	801	55	49	740	850
New Brunswick	81	76	377	560	56	179	433	739
Quebec	548	579	4 689	5 198	475	338	5 164	5 536
Ontario	397	437	7 614	9 306	350	300	7 964	9 606
Manitoba	45	49	411	543	x	22	x	565
Saskatchewan	42	48	407	445	18	30	425	475
Alberta	133	174	1 967	2 673	75	63	2 042	2 736
British Columbia	265	260	2 609	2 940	144	88	2 753	3 028
Yukon Territory, Northwest Territories and Nunavut ³	12	20	39	x	x	x	x	102
Employment size group								
Under 20 employees	1 433	1 502	5 587	6 186	600	433	6 187	6 619
20 to 49 employees	114	164	3 022	4 456	322	324	3 344	4 780
50 and more employees	59	71	10 508	12 403	390	395	10 898	12 798
Canada	1 606	1 737	19 117	23 045	1 312	1 152	20 429	24 197

Notes:

Figures may not add up to totals due to rounding.

1. As businesses may operate in more than one province or territory, the national totals will not equal the sum of the provincial totals.

2. All employment estimates obtained from administrative data were counted as full-time employees.

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

4 Government Sector : Financial and Employment Characteristics

This section presents information on local governments and other public bodies who provide waste management services. These data include current expenditures, capital expenditures, revenues¹ and employment characteristics.

4.1 Current and capital expenditures

Current expenditures

Current expenditures made by local governments and other local waste management authorities for waste management activities totalled \$1 404 million for the year 2000 (Table 4.1). This represents an increase of approximately 10% over the total expenditures for 1998. An increase was observed in all of the expenditure categories except for the collection and transportation of waste, recyclables and organic material category which saw a decrease of approximately 4%.

Current expenditures for the operation of organic waste processing facilities exhibited the greatest increase, up 53% over 1998 values. This growth could be expected considering that the quantity of organic material processed increased 45% over the same period (Tables 2.3 and 2.4).

The highest proportion of expenditures went towards collection and transportation activities, receiving 44% of the national total. The operation of disposal facilities (30%) and tipping fees (11%) also received high proportions of total expenditures.

Provincially, the largest current expenditures towards waste management services were made by local governments in Ontario, accounting for 37% of the national total. Quebec followed making up an additional 24% of the total current expenditures made in Canada.

The breakdown of current expenditures varied across the country. While the dominant waste management expenditure category for most provinces was the collection and transportation of waste and recyclables, local governments

1. Local waste management authorities provide a number of services that are funded from either tax (e.g. property taxes) or non-tax (e.g. user fees, landfill royalties, etc.) revenues. The financial information contained in this section only addresses those revenues that were accrued from sources *outside* the tax base and exclude provincial and territorial transfers.

in Nova Scotia, New Brunswick and British Columbia allocated a higher or equivalent proportion of their expenditures to the operation of disposal facilities. This differs from 1998 when local governments in New Brunswick were the only ones to allocate more of their expenditures to this category. This change contributed to the substantial rise in 2000 expenditures for the operation of disposal facilities from 1998 values (22%).

Service providers

Nationally, the distribution of waste management expenditures among government bodies and contracted private firms providing waste management services remained unchanged from 1998 to 2000 (Table 4.2). However, on a provincial basis there has been a shift towards contracted services in a number of provinces. This move is most obvious in Nova Scotia where the percentage of expenditures paid for contracted services jumped from 57% in 1998 to 70% in 2000. Increases in contracted-out waste management services were also observed in New Brunswick, Manitoba, Saskatchewan, and Alberta.

A comparison of the allocation of waste management services by provider for 1996, 1998 and 2000 is shown in Table 4.3. The 2000 data confirm the trend that was first suggested by 1996 data; more local waste management authorities are contracting out to the private sector for the provision of waste management services.

Since 1996, the largest shift in the distribution of expenditures has been in the payment of tipping fees. In 2000, 67% of these expenditures went to private contractors, up from 51% in both 1996 and 1998. Tipping fees are weight-based fees paid to the owner or operator of a landfill facility for the right to deposit waste in that facility. Considering this, the increase in these fees paid to contractors may be attributed to private waste sites either charging higher tipping fees or accepting larger quantities of waste than municipal sites, or a combination of these two factors.

Capital expenditures

Local government capital expenditures for waste management services totalled over \$109 million for 2000 (Table 4.4). Almost half (49%) of this total went towards disposal facilities. Recycling facilities accounted for 19% of the total, followed closely by collection and transportation activities which made up 18%.

The largest capital expenditures for waste management services were made by local governments in Ontario (\$54 million), followed by Alberta (\$19 million) and Nova Scotia (\$11 million).

4.2 Revenues

In 2000, local government and other public waste management authorities collected a total of over \$701 million in non-tax revenues from waste management sources such as utility bill payments, contracts, the sale of recyclables, tipping fees, disposal facility royalties, grants and loans (Table 4.5). This is a decrease of almost 2% from 1998. Interestingly, despite this decrease, revenues from the sale of recyclable materials more than doubled over this time period. An increase over 1998 values for this revenue source was observed for most provinces. The sale of recyclable materials was a substantial source of revenue for local governments in Ontario contributing 26% to their total waste management revenues. Manitoba (19%) and Quebec (14%) local governments also received a large proportion of their waste management revenues from this source. As in 1998, the greatest source of revenues nationally was tipping fees from other local governments or private businesses. These revenues were also the greatest source in the majority of provinces.

4.3 Employment

The number of persons employed by local governments and public organizations for waste management services has continued to decrease. During the year 2000, this sector employed 6,783 persons, a decrease of 6% from 1998 values (Table 4.6). Note that for the same time period the number of persons employed by private waste management firms increased 18% (Table 3.6).

Total employment for the entire waste management industry, including both government and private sectors, reached 30,980 in 2000. This represented an increase of 12% over the 1998 total. As in 1998, the majority of persons working in the industry were employed by private waste firms. The proportion of employees working in the private sector portion has increased from 74% of the 1998 total to 78% for 2000. The fact that government sector employment has decreased while the total employment for the industry, and subsequently for the private sector have increased, further illustrates the shift in the provision of waste management services from government and public organizations to private companies.

Table 4.1

Current Expenditures by Local Governments on Waste Management by Activity and by Province and Territory, 1998 and 2000¹

Province/Territory	Collection and transportation		Tipping fees		Operation of disposal facilities		Operation of recycling facilities		Operation of organic waste processing facilities		Other		Total current expenditures	
	1998	2000	1998	2000	1998	2000	1998	2000	1998	2000	1998	2000	1998	2000
	thousand dollars													
Newfoundland and Labrador	5 050	4 140	x	423	x	3 623	x	x	x	x	x	x	9 798	8 541
Prince Edward Island	921	1 424	x	x	0	x	x	x	x	x	x	x	x	x
Nova Scotia	26 625	18 475	900	1 215	10 943	30 116	2 898	4 957	618	5 010	8 098	11 086	50 082	70 859
New Brunswick	6 445	5 903	7 245	9 955	14 955	17 097	x	2 496	x	x	3 409	x	33 215	38 294
Quebec ²	163 770	145 453	34 680	38 077	88 402	99 161	21 115	19 793	5 348	7 519	17 197	24 180	330 512	334 183
Ontario	262 091	220 969	56 340	82 414	104 219	123 460	43 505	38 843	10 764	10 676	26 472	42 342	503 391	518 704
Manitoba	17 194	27 327	5 812	634	7 820	8 555	392	x	x	x	x	871	31 680	38 037
Saskatchewan	10 792	10 597	244	x	5 829	7 777	1 656	839	x	x	x	618	18 612	19 967
Alberta	55 028	77 869	6 951	x	21 999	28 940	x	7 690	x	x	1 430	6 210	88 695	129 834
British Columbia	83 602	94 802	20 974	20 434	82 730	95 392	7 906	7 891	3 168	2 485	9 544	11 913	207 924	232 917
Yukon Territory, Northwest Territories and Nunavut ³	1 885	4 133	0	x	x	x	x	x	x	x	x	x	x	x
Canada	633 403	611 093	134 129	159 972	341 906	416 607	81 667	83 156	20 685	31 589	66 511	101 590	1 278 300	1 404 006

Notes:

Figures may not add up to totals due to rounding.

1. Includes current expenditures directed toward waste management services.

2. Total is derived from surveys conducted by Public Institutions Division, breakdowns are imputed or are derived from administrative sources.

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999

Source:

Statistics Canada, Environment Accounts and Statistics Division and Public Institutions Division.

Table 4.2

Current Expenditures by Local Governments on Waste Management by Service Provider and by Province and Territory, 1998 and 2000

Province/Territory	Current expenditures ²		Waste management service provider ¹					
			In-house employees ³		Contractors		Other government	
	1998	2000	1998	2000	1998	2000	1998	2000
	thousand dollars		percent					
Newfoundland and Labrador	9 798	8 541	69	72	28	24	3	4
Prince Edward Island	x	x	x	x	x	x	x	x
Nova Scotia	50 082	70 859	41	27	57	70	2	2
New Brunswick	33 215	38 294	61	57	37	39	3	4
Quebec ⁴	330 512	334 183	15	15	85	85
Ontario	503 391	518 704	42	44	51	51	7	5
Manitoba	31 680	38 037	71	64	28	35	1	1
Saskatchewan	18 612	19 967	75	74	24	26	0	0
Alberta	88 695	129 834	62	50	36	48	2	2
British Columbia	207 924	232 917	34	36	57	54	8	10
Yukon Territory, Northwest Territories and Nunavut ⁵	x	x	x	x	x	x	x	x
Canada	1 278 300	1 404 006	37	37	59	59	4	4

Notes:

Figures may not add up to totals due to rounding.

1. Columns indicate percentage of current expenditures spent on programs delivered by own employees versus payments to contractors or to other governments or government bodies for services.

2. Current expenditures cover collection and transportation of waste for disposal or recyclables/organics, tipping fees, disposal facilities, organics processing facilities and other waste management expenditures for surveyed municipalities.

3. Full-time and part-time employees working in the waste management activities of the municipality. Employment figures are only for surveyed municipalities. They do not include estimates of waste management employment in municipalities with less than 4000 population unless a disposal facility is situated within it.

4. Total current expenditures are derived from surveys conducted by Public Institutions Division. The expenditure breakdowns and number of employees are imputed or are derived from administrative sources.

5. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999

Sources:

Statistics Canada, Environment Accounts and Statistics Division and Public Institutions Division.

Table 4.3

Current Expenditures by Local Governments on Waste Management by Service Provider and Activity, 1996, 1998 and 2000¹

Activity	1996			1998			2000		
	In-house employees ²	Contractors	Other governments	In-house employees ²	Contractors	Other governments	In-house employees ²	Contractors	Other governments
Collection and transportation	39	61	0	31	69	0	34	66	0
Tipping fees	18	51	32	16	51	32	5	67	28
Operation of disposal facilities	48	51	1	50	48	2	48	50	2
Operation of recycling facilities	37	62	1	48	51	1	31	69	0
Operation of organics processing facilities	47	53	0	42	58	0	34	64	2
Other	73	26	1	58	39	3	66	33	2
All waste management activities	42	54	4	37	59	4	37	59	4

Notes:

Figures may not add up to totals due to rounding.

1. Proportion of current expenditure by service provider includes estimates for surveyed municipalities, as well as estimates for municipalities that were not surveyed.

2. Full-time and part-time employees working in the waste management activities of the municipality. Employment figures are only for surveyed municipalities. They do not include estimates of waste management employment in municipalities with less than 4000 population unless a disposal facility is situated within it.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 4.4

Capital Expenditures by Local Governments on Waste Management by Activity and by Province and Territory, 2000¹

Province/Territory	Collection and transportation	Disposal facilities	Recycling facilities	Organics processing facilities	Other	Total capital expenditures	
						1998	2000
thousand dollars							
Newfoundland and Labrador	x	x	x	x	x	964	835
Prince Edward Island	x	x	x	x	x	x	x
Nova Scotia	704	5 960	x	x	x	49 241	11 059
New Brunswick	x	2 091	774	x	x	12 761	4 646
Quebec ²	767	4 070	668	170	372	36 054	6 047
Ontario	x	23 041	x	1 654	2 845	54 070	53 691
Manitoba	x	761	x	x	x	3 310	1 855
Saskatchewan	x	x	10	x	49	1 874	2 856
Alberta	3 109	10 718	1 451	266	3 215	16 891	18 760
British Columbia	1 343	4 257	x	x	1 959	16 901	8 117
Yukon Territories, Northwest Territories and Nunavut ³	x	x	x	x	x	x	x
Canada	20 050	53 897	21 219	2 900	10 986	192 587	109 053

Notes:

Figures may not add up due to rounding.

1. Includes capital expenditures that were made by local governments and other public organizations for waste management purposes.

2. Total capital expenditures are derived from surveys conducted by Public Institutions Division. The expenditure breakdowns are imputed or are derived from administrative sources.

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999.

Sources:

Statistics Canada, Environment Accounts and Statistics Division and Public Institutions Division.

Table 4.5

Revenue Sources of Local Governments from Waste Management Services by Province and Territory, 2000¹

Province/Territory	Utility bill payments	Contract revenues	Sale of recyclable materials		Disposal facility royalties	Grants, loans etc.	Other revenues (bag tags, permits)	Total revenues	
			Tipping fees					1998	2000
	thousand dollars								
Newfoundland and Labrador	x	x	6	3 634	0	x	x	2 640	3 714
Prince Edward Island	x	x	x	x	x	x	x	2 415	x
Nova Scotia	0	1 654	3 225	16 723	x	4 530	x	19 458	29 583
New Brunswick	x	x	1 121	18 682	x	x	x	23 889	26 836
Quebec ²	0	2 899	15 033	62 918	1 862	1 900	23 955	225 765	108 568
Ontario	3 320	881	58 118	144 039	5 652	2 970	11 261	179 106	226 241
Manitoba	846	x	x	10 485	x	479	x	6 007	19 403
Saskatchewan	2 723	715	854	5 426	45	245	733	9 316	10 741
Alberta	30 464	7 256	5 805	31 074	x	1 600	x	62 965	78 054
British Columbia	56 831	4 587	9 152	110 136	x	x	6 380	179 671	187 601
Yukon Territory, Northwest Territories and Nunavut ³	x	x	x	x	x	x	x	1 545	x
Canada	105 291	18 728	97 115	406 463	12 032	12 275	49 465	712 778	701 369

Notes:

Figures may not add up to totals due to rounding.

1. Includes revenues collected specifically for waste management purposes by local governments and other public waste management organizations that provided waste management services in 2000. They do not include general municipal tax revenues.

2. Figures are derived from administrative sources.

3. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999

Sources:

Statistics Canada, Environment Accounts and Statistics Division and Public Institutions Division.

Table 4.6

Waste Management Employment by Local Governments by Province and Territory, 2000¹

Province/Territory	Full-time employees	Part-time employees	Total employees ²	
			1998 ¹	2000
	number			
Newfoundland and Labrador	67	42	122	109
Prince Edward Island	x	x	x	x
Nova Scotia	193	42	211	235
New Brunswick	133	34	137	167
Quebec ³	1 037	269	1 593	1 306
Ontario	2 159	449	2 689	2 608
Manitoba	188	60	324	248
Saskatchewan	178	84	316	262
Alberta	766	223	961	989
British Columbia	611	172	796	783
Yukon Territory, Northwest Territories and Nunavut ⁴	x	x	x	x
Canada	5 385	1 398	7 222	6 783

Notes:

Figures may not add up to totals due to rounding.

r revised figures

1. Includes local governments, waste management boards and commissions and provincial bodies responsible for the delivery of waste management services.

2. Includes full-time and part-time employees working in the waste management activities of surveyed municipalities. No estimate has been made for non-surveyed municipalities.

3. Figures are derived from administrative sources.

4. On April 1, 1999 the territory of Nunavut was officially established through the Nunavut Land Claim Agreement and the Nunavut Act. Therefore, 1998 data refer to the Northwest Territories (including Nunavut) as defined prior to April 1, 1999

Sources:

Statistics Canada, Environment Accounts and Statistics Division and Public Institutions Division.

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5 Methodology and Data Quality

The following information should be used to ensure a clear understanding of the underlying methodology of the 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.

5.1 Overall approach: data sources and methodology

General methodology

This report presents the physical quantities, types and sources of waste and recyclable material 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 on account of the point of measurement being the facility. 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. The decision of which respondent's information to use was based on the results of this research and professional judgement.

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 and 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.

It is assumed that all Canadians produce waste and this waste must be disposed of in some manner, thus requiring a "blown-up" 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, 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 a "blown-up" figure is not required.

Table 5.1 shows the percentage of the population for each province that was not covered by the surveys and for which estimates were adjusted.

5.2 Waste Management Industry Surveys: Business and Government Sectors

5.2.1 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, 2000 and March 31, 2001.

1. Statistics Canada, CANSIM II, Table 051-0001, "Estimates of population, by age group and sex, Canada, provinces and territories, annual".

5.2.2 Coverage

Business Sector

The 2000 *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 2000 business survey was based on the 1998 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 (Text Box 5.1). The combined list was cross checked once more 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 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 facility operated within their jurisdiction.

The mailing list for the 2000 survey was based on past survey information and supplemented by information obtained from provincial sources.

Some provinces collected their own data on aspects of waste management for 2000. These data were used to fill in missing values or to verify values for the survey results presented in this report. Quebec municipalities, for example, were not surveyed by Statistics Canada as the province conducts its own waste management surveys.

Text Box 5.1

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.

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. This industry saw revenues of over \$485 million in 2000 and employed more than 3 582 persons.¹

Source:

Statistics Canada, *North American Industry Classification System*, Catalogue no. 12-501-XPE, Ottawa, 1997.

1. Statistics Canada, Business Register (June, 2000)

5.2.3 Variables measured

For the reference year 2000, 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, exported, and imported;
- sources of waste and recyclable material;
- physical characteristics of disposal facilities that firms owned or operated;
- total revenues realised from the sale of waste management services;
- total operating and capital expenditures; and
- total employment.

5.2.4 Data collection and processing

Data collection for both surveys took place during the spring and summer of 2001. Survey questionnaires were mailed to a total of 1 642 establishments, including both 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 business 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 local government survey.

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 applied. 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 2001.

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 contracted 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.

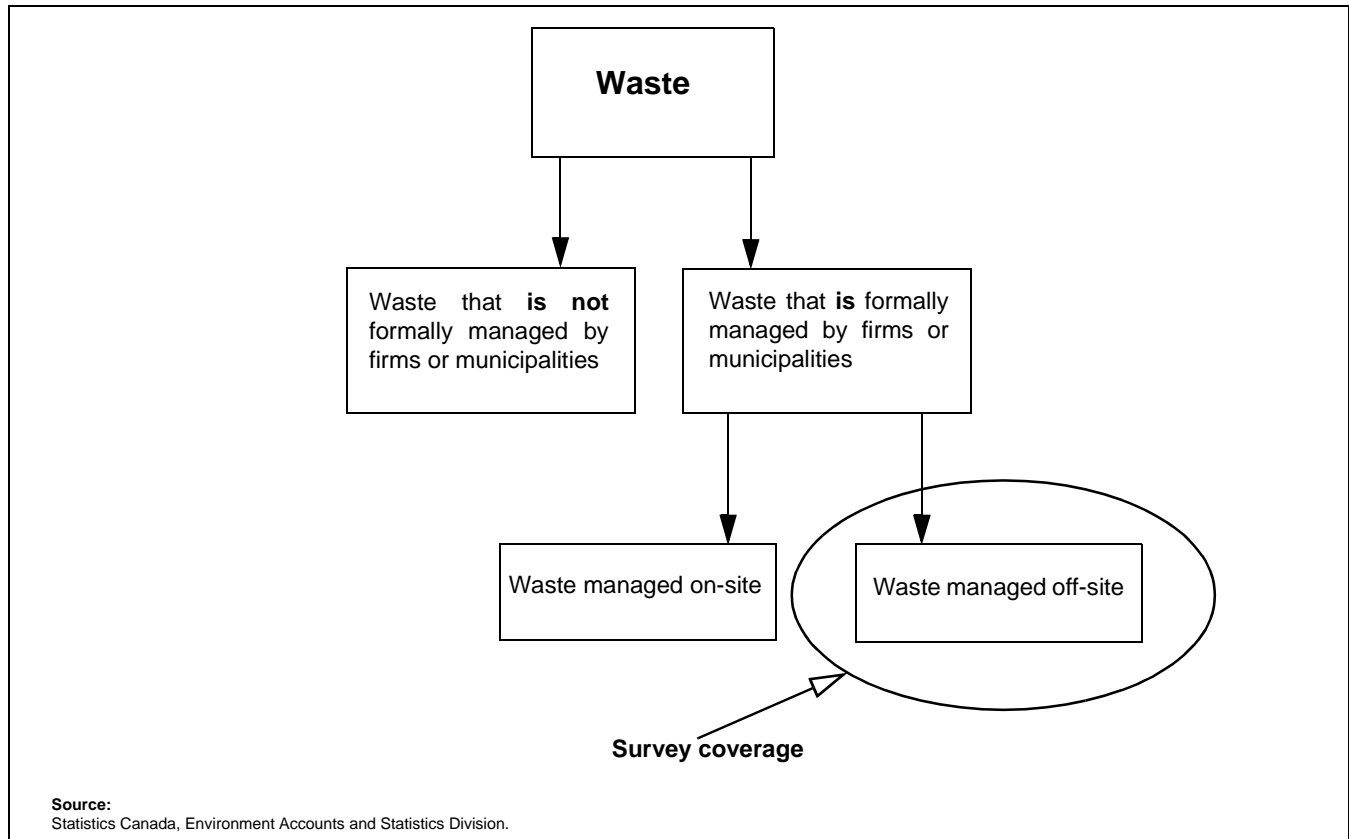
For example:

- 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 (e.g., 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) Or, there may be numerous combinations 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.

Figure 5.1
Waste Management Industry Survey Coverage



5.2.5 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.

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, households may manage some waste materials themselves. For example, many households have backyard 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 backyard 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 5.1)

In-scope establishments

For the 2000 survey cycle, a total of 1 187 fully completed and partially completed in-scope questionnaires were returned; 500 for the business sector and 687 for the government sector. For those questionnaires that were not returned, 325 were considered to be in-scope resulting in a combined total of 1 512 in-scope respondents for the two surveys.

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

Since the 1998 survey, a number of changes have occurred in the waste management industry. Looking at the business sector, of the establishments surveyed, 29 went out of business and 11 mergers took place. Another 55 businesses that had provided waste management services in 1998 did not provide these services in 2000 and were determined to be out-of-scope for the purpose of this survey. Among the local governments surveyed, 27 municipalities amalgamated, becoming either a part of an existing municipality or forming a new municipality and another 6 were found to be out-of scope for the 2000 cycle.

5.3 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.

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 so that the mailing list is well maintained and the respondents are 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 Text Box 5.1).

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 2000 with those for 1998, it is apparent that there has been substantial growth in the Canadian waste management industry. On a per capita basis, more non-hazardous waste was disposed and prepared for recycling during 2000 than in 1998. As would be expected, the upward trends seen in the waste quantity estimates are reflected in the financial and employment estimates of the business and government sectors of the industry.

Comparing the waste data with known economic trends is another way of validating the data. Economic growth¹ is one indicator of the general state of the economy. Positive growth, such as the 9% increase observed nationally from 1998 to 2000², typically indicates an active economy: people spent more money on goods and services in 2000 than in 1998. This increase in spending may contribute to an increase in waste production. For example, through

1. Economic growth has been measured as Gross Domestic Product or the growth in the market value of all goods and services produced within Canada.

2. Statistics Canada, CANSIM II, Table 380-0002, "Gross Domestic Product (GDP), expenditure based, quarterly".

disposal of the packaging, of the item itself once it has been used, or of an older item being replaced by the newly purchased item.

5.3.1 Response rates

The overall response rate for the 2000 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 71% for the business sector and 85% for the government sector. An alternative response rate of 77% was calculated for the business sector based on total revenues.

5.3.2 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 form 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. Also, many respondents did not track their revenues in the manner that the survey required. Unable to provide a breakdown of revenues by specific waste management activity, these respondents provided only their total revenues. 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.

Business Sector

All in-scope questionnaires (completed and non-response) for the business sector survey were sorted into three groups based on employment size; firms with under 6 employees, firms with 6 to 19 employees, and firms with 20 or more employees. Using the questionnaires for those establishments that responded, median cell values were calculated separately for each size group for the financial and employment data. These values were then applied to the cells where a value was missing in the corresponding size group. The rates of imputation for selected questions are presented in Table 5.2.

Firms with under 6 employees were not intentionally included in the survey frame. However, frame selection was based on previous years and/or other administrative data and the size of a business may change between reporting periods. For those small firms that were not surveyed, employment and financial data from the Statistics Canada Business Register were used as base level information from which other cells were imputed. Thus, there is a very high rate of imputation for these very small businesses.

For large firms, the imputed values were compared with values from previous years and other sources, such as

Text Box 5.2

Response Burden

In order to track and thus make improvements to lessen the burden that the completion of these surveys impose on respondents, the 2000 editions of the *Waste Management Industry Survey* asked respondents to indicate the amount of time spent completing the questionnaire.

The mean number of hours reported by the respondents is presented below:

Waste Management Industry Survey: Business Sector, 2000

- Under 20 employees - 2.02 hours
- 20 or more employees - 2.81 hours

Waste Management Industry Survey: Government Sector, 2000

- All respondents - 2.81 hours

annual reports and security exchange filings to ensure that the quality of the imputed values was high.

Government Sector

A similar methodology was used to estimate missing financial and employment values for the government sector survey. However due to the high response rate 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, those facilities where a local government owned a landfill but contracted out the operation of that landfill and both the government body and the contracted business reported for the landfill. The duplicated data were removed so that each landfill was reported 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.

After as much information as possible could be gleaned from the completed survey forms, many of the missing values were obtained through an intensive period of follow-up through email or telephone calls. The 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.

5.3.3 Data reliability

Table 5.3 presents relative measures of the reliability of specific data points contained in this report. These measures are based on data quality and conceptual and methodological soundness. They are given the following ratings:

- class 1 - very reliable
- class 2 - reliable
- class 3 - acceptable

Data are considered to be “very reliable” (class 1) when they are characterized by the following:

- they are mainly derived from Statistics Canada surveys, or from other sources that are considered to be highly reliable; and
- are easily integrated into the tables without the need to correct for shortcomings in coverage (spatial, temporal, sectorial or environmental) or classification

and when they are characterized by concepts and methods that:

- are based on accepted environmental, economic or statistical theory
- do not require arbitrary or subjective decisions regarding important parameters
- are compatible with the concepts and methods used in the *Canadian System of National Accounts*, where applicable.

Data that meet all but one of the above criteria are deemed to be “reliable” (class 2). Those who fail to meet two or more of the criteria are deemed to be “acceptable” (class 3).¹

1. Statistics Canada, *Econnections, Linking the Environment and the Economy, Indicators and Detailed Statistics, 2000*, Catalogue no. 16-200-XKE, Ottawa, 2000.

5.3.4 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 5.2.5 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. Agricultural waste is to a large extent 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.

Classification and measurement of waste flows

At this time, improvements are being made to standardize definitions of waste concepts and methods to calculate waste flows in Canada. While with each survey cycle these concepts are approaching a state of inter-provincial uniformity, some inconsistencies remain. For example, some jurisdictions consider the reuse of asphalt as recycling while other jurisdictions do not. In addition, various methods of 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.

5.4 Comparability of data and related sources

5.4.1 Comparisons between data sources

As mentioned in the previous section, without a 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.

The province of Quebec conducts its own waste management surveys. In order to reduce response burden the provincial survey results are used for the Quebec estimates presented in this report. However, some differences exist between the Quebec surveys and the Statistics Canada surveys which can affect data comparability (See Section 2.2, Quebec local government surveys).

5.4.2 Comparisons over time

In 2000, improvements were made to the classification of recyclable materials. Clarifications were made as to what materials could and could not be considered recycled. As a result of this change in classification, revisions were made to the 1998 generation and diversion estimates so that these data could be compared with those for 2000. However, recycling data from previous years have not been revised and therefore are not comparable to either the 2000 data or the revised 1998 data.¹ The on going development of nationally consistent methodologies will aid making year to year comparisons possible.

1. However, waste disposal estimates are comparable for all years (1994, 1996, 1998 and 2000).

Table 5.1
Survey Area Population (Disposal Data) as a Percentage of Total Provincial and Territorial Population, 2000

Province/Territory	Surveyed population	Population ¹	Surveyed population percentage of total provincial population	Population undercovered by survey
	number	2000	percent	
Newfoundland and Labrador	376 538	537 877	70	30
Prince Edward Island	131 620	138 341	95	5
Nova Scotia	921 989	942 315	98	2
New Brunswick	681 692	755 617	90	10
Quebec ²	...	7 381 766
Ontario	11 364 712	11 697 569	97	3
Manitoba	999 345	1 146 444	87	13
Saskatchewan	694 158	1 021 963	68	32
Alberta	2 910 253	3 009 860	97	3
British Columbia	4 058 833	4 060 133	100	0
Yukon Territory	18 060	30 597	59	41
Northwest Territories and Nunavut	35 314	68 352	52	48
Canada	29 565 596	30 790 834	96	4

Notes:

1. Statistics Canada, CANSIM II, Table 051-0001, "Estimates of population, by age group and sex, Canada, provinces and territories, annual".

2. Quebec local governments or other public waste management organizations were not surveyed. Information was collected from other sources and the population coverage is not known.

Sources:

Statistics Canada, Environment Accounts and Statistics Division.

Table 5.2
Imputation Rates for Financial Characteristics from the Waste Management Industry Survey: Business Sector, 2000

Financial characteristics	Under 6 employees ¹	6 or more employees	Total
	Imputation rate ²		
	percent		
Total operating revenues	24	8	8
Total operating expenditures	35	13	14
Capital expenditures	16	17	17

Note:

1. Firms with less than 6 employees were not surveyed. Therefore, there was a high rate of imputation for this size group.

2. The proportion of the total value of the category that is imputed.

Source:

Statistics Canada, Environment Accounts and Statistics Division.

Table 5.3
Data Reliability Measures

Table	Variable	Classification
2.1	Disposal of Waste by Province and Territory, 2000	1, Quebec - 3
2.2	Disposal of Waste by Source and by Province and Territory, 2000	1, Quebec - 3
2.3	Materials Prepared for Recycling by Type and by Province and Territory, 2000	1, Quebec - 3
2.4	Materials Prepared for Recycling by Type and by Province and Territory, 1998	1, Quebec - 3
2.5	Materials Prepared for Recycling by Source and by Province and Territory, 2000	1, Quebec - 3
2.6	Materials Prepared for Recycling by Source and by Province and Territory, 1998	2, Quebec - 3
2.7	Quantity of Total Waste Materials Generated, by Source and by Province and Territory, 2000	1, Quebec - 3
2.8	Quantity of Total Waste Materials Generated, by Source and by Province and Territory, 1998	2, Quebec - 3
2.9	Waste Disposal, Diversion and Generation per capita, all Sources, by Province and Territory, 2000	1, Quebec - 3
2.10	Waste Disposal, Diversion and Generation per capita, all Sources, by Province and Territory, 1998	2, Quebec - 3
2.11	Percentage of Waste Diverted from Disposal, by Source, by Province and Territory, 2000	1, Quebec - 3
2.12	Percentage of Waste Diverted from Disposal, by Source, by Province and Territory, 1998	2, Quebec - 3
3.1	Waste Management Industry: Business Sector Characteristics by Province and Territory, 1998 and 2000	1
3.2	Operating Revenues of Waste Management Businesses by Activity and by Province and Territory, 2000	1
3.3	Waste and Recyclables Collection and Transportation Activities of Businesses by Source of Revenue and by Province and Territory, 2000	1
3.4	Operating Expenditures by Waste Management Businesses by Type and by Province and Territory, 2000	1
3.5	Capital Expenditures by Waste Management Businesses by Type and by Province and Territory, 2000	1
3.6	Employment by Waste Management Businesses by Province and Territory, 1998 and 2000	1
4.1	Current Expenditures by Local Governments on Waste Management by Activity and by Province and Territory, 1998 and 2000	1, Quebec - 2
4.2	Current Expenditures by Local Governments on Waste Management by Service Provider and by Province and Territory, 1998 and 2000	1, Quebec - 2
4.3	Current Expenditures by Local Governments on Waste Management by Service Provider and Activity, 1996, 1998 and 2000	1, Quebec - 2
4.4	Capital Expenditures by Local Governments on Waste Management by Activity and by Province and Territory, 2000	1, Quebec - 2
4.5	Revenue Sources of Local Governments from Waste Management Services by Province and Territory, 2000	1, Quebec - 2
4.6	Waste Management Employment by Local Governments by Province and Territory, 2000	1, Quebec - 2

Source:

Statistics Canada, Environment Accounts and Statistics Division.

ELECTRONIC PUBLICATIONS AVAILABLE AT
www.statcan.ca



Annex A: Questionnaires

ELECTRONIC PUBLICATIONS AVAILABLE AT
www.statcan.ca





Environment Accounts and Statistics Division

Waste Management Industry Survey: Business Sector, 2000

Confidential when completed

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

Français au verso

Please complete

Legal Name

Operating Name

C/O

Street Address

City

Province/Territory

Postal Code



Please read before completing

Purpose of the 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 2000. 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**

Email: **enviro.oid.waste@statcan.ca**

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

IMPORTANT: 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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D M Y

Bat.

Coll.

FSC

4-2300-4: 2001-02-14 STC/NAD-291-04165

SECTION 2

Collection and Preparation of Waste and Recyclables (including compostables and composting)

2.1 In 2000, did this company collect and/or transport waste for disposal?

²⁰¹ Yes ➤ Go to Question 2.2

²⁰² No ➤ Go to Question 2.4

2.2 Report the percentage of this company's *revenue* from waste collection activities earned from the following:

From residential collection

203	%
-----	---

From non-residential (IC&I) collection

204	%
-----	---

From other collection activities (e.g., private individuals or community associations), please specify :

²⁰⁷

205	%
-----	---

(Total should equal 100%)

206	%
-----	---

2.3 Indicate the *sources* of the waste collected by your company.
(Please see Guide for information)

Percentage

Residential

208	%
-----	---

Non-residential (IC&I)

209	%
-----	---

Construction and Demolition

210	%
-----	---

(Total should equal 100%)

211	%
-----	---

2.4 In 2000, did this company collect recyclable or compostable materials?

²¹² Yes ➤ Go to Question 2.5

²¹³ No ➤ Go to Question 2.7

2.5 Report the percentage of this company's *revenue* from recyclable material (including compostables) collection activities earned from the following:

From residential collection

214	%
-----	---

From non-residential (IC&I) collection

215	%
-----	---

From other collection activities (e.g., private individuals or community associations), please specify :

²¹⁸

216	%
-----	---

(Total should equal 100%)

217	%
-----	---

SECTION 2 - Concluded

Collection and Preparation of Waste and Recyclables (including compostables and composting) - concluded

2.6 Indicate the *sources* of the recyclable and compostable materials collected by your company.
(Please see Guide for information)

	Percentage
Residential	219 %
Non-residential (IC&I)	220 %
Construction and Demolition	221 %
<i>(Total should equal 100%)</i>	222 %

2.7 In 2000, did your company operate a facility (municipally or privately owned) that processed compostable materials or prepared materials for recycling ? (e.g. MRFs and central composting facilities).

²²³ Yes ➤ Go to Question 2.8 ²²⁴ No ➤ Go to Section 3

2.8 If yes, please complete the following.

Name and address of facility	Owner of facility		Sources of materials (percentage) <i>(Please see Guide for information)</i>			
	Your company <i>(check (X) if yes)</i>	Other company or municipality <i>(please specify name)</i>	Residential	Non-residential (IC&I)	Construction and demolition	<i>(totals should equal 100%)</i>
225	226 <input type="radio"/>	227	228 %	229 %	230 %	231 %
232	233 <input type="radio"/>	234	235 %	236 %	237 %	238 %
239	240 <input type="radio"/>	241	242 %	243 %	244 %	245 %

Please list additional facilities in the Comments Section (Section 9).

SECTION 3

Waste Diversion

3.1 If your company collected recyclable materials AND/OR

if your company owned and/or operated a Material Recovery Facility (MRF), please indicate the quantities of materials collected and/or prepared or processed at the facility in 2000. Please exclude compostable materials that were collected or processed but include this information in Question 3.2 below. If your company did not perform these activities, please go to Section 4.

Type of material	Quantity collected and delivered to recycling facility (tonnes)	Quantity prepared or processed at the facility (tonnes)
Newsprint, phone books, magazines	301	314
Corrugated cardboard and boxboard	302	315
Mixed paper fibre	303	316
Glass	304	317
Ferrous metals	305	318
Copper	306	319
Aluminum	307	320
Other non-ferrous metals	308	321
Mixed metals	309	322
Plastic	310	323
Mixed construction and demolition waste	311	324
Other (please specify) : <input type="text" value="366"/>	312	325
Totals	313	326

3.2 Composting

In 2000, did your company own and/or operate a central composting facility?

³²⁷ Yes ➤ Please complete the following

³²⁸ No ➤ Go to Section 4

Name and address of facility	Name of owner, if not self	Year opened	Quantity of materials entering the facility (tonnes)	Quantity of compost / peat produced (tonnes)	Aerobic process? (check (X))	Anaerobic process? (digestion) (check (X))
329	330	331	332	333	334 <input type="radio"/>	335 <input type="radio"/>
336	337	338	339	340	341 <input type="radio"/>	342 <input type="radio"/>
343	344	345	346	347	348 <input type="radio"/>	349 <input type="radio"/>
350	351	352	353	354	355 <input type="radio"/>	356 <input type="radio"/>
357	358	359	360	361	362 <input type="radio"/>	363 <input type="radio"/>
Totals				364	365	

Please provide information about any additional facilities at end end of questionnaire in comments area. Thank you.

SECTION 4

Disposal Facilities : Quantities and Types of Waste

4.1 Did this company operate a disposal facility for non-hazardous waste (landfill or incinerator) in 2000?

⁴⁰¹ Yes ➤ Complete Sections 4 and 5

⁴⁰² No ➤ Go to Section 6

4.2 For each disposal facility that you operated in the province/territory in 2000, indicate the name and location (street or highway address), type of facility and the sources and amount of waste disposed of in the facility as measured by weigh scales or by providing your best estimate. (Please see Guide for information and definitions)

Name and address of disposal facility	Owner of this facility if not self	Type of facility (check (X) one only)		Approximate percentage of total waste disposed in facility, by source			Weigh scale present? (check if yes)	Quantity of waste disposed of in the facility in 2000 (tonnes)
		Landfill	Incinerator	Residential	Non-residential (IC&I)	Construction and demolition		
403	404	405	406	407	408	409	410	411
				%	%	%	<input type="radio"/>	
412	413	414	415	416	417	418	419	420
				%	%	%	<input type="radio"/>	
421	422	423	424	425	426	427	428	429
				%	%	%	<input type="radio"/>	
430	431	432	433	434	435	436	437	438
				%	%	%	<input type="radio"/>	
439	440	441	442	443	444	445	446	447
				%	%	%	<input type="radio"/>	
448	449	450	451	452	453	454	455	456
				%	%	%	<input type="radio"/>	
457	458	459	460	461	462	463	464	465
				%	%	%	<input type="radio"/>	
466	467	468	469	470	471	472	473	474
				%	%	%	<input type="radio"/>	
Total waste disposed in facilities								475

SECTION 5

Disposal Facilities : Facility Characteristics

5.1 Please complete the following if you answered yes in Section 4.1.

Name of disposal facility	Year opened	Anticipated closure date	Approved capacity (tonnes)	Remaining capacity (tonnes)	Type of liner (check (X))			Is there a leachate capture system in place? (check (X) if yes)
					Clay	Artificial Membrane	Other / Combination	
501	502	503	504	505	506	507	508	509
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
510	511	512	513	514	515	516	517	518
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
519	520	521	522	523	524	525	526	527
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
528	529	530	531	532	533	534	535	536
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
537	538	539	540	541	542	543	544	545
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
546	547	548	549	550	551	552	553	554
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
555	556	557	558	559	560	561	562	563
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
564	565	566	567	568	569	570	571	572
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide information about any additional facilities at the end of questionnaire in Comments Section. Thank you.

5.2 Did your landfill(s) receive bottom ash from solid waste or sewage sludge incineration?

573 Yes ➤

Quantity (tonnes)
575

574 No ➤

Go to Question 5.3

5.3 Did you landfill(s) receive contaminated soil?

576 Yes ➤

Quantity (tonnes)
578

577 No ➤

Go to Section 6

If Yes, was this amount included in your response to question 4.2 ?

579 Yes ➤

Quantity (tonnes)
581

580 No ➤

Go to Section 6

SECTION 6

Exports and Imports of Non-hazardous Waste for Disposal, Compostable Materials or Recyclable Materials

6.1 Did your company transport waste for disposal or materials for recycling or reuse to another province/territory or country in 2000? (Include direct shipments and shipments from transfer stations)

⁶⁰¹ Yes ➤ Go to Question 6.2

⁶⁰² No ➤ Go to Question 6.4

6.2 Check (X) all that apply and indicate quantities transported.

	Check (X) if yes	Quantity of waste for disposal (tonnes)	Quantity of materials for recycling or composting (tonnes)
Transported to a facility in another province/territory	⁶⁰³ <input type="text"/>	⁶⁰⁴	⁶⁰⁵
Transported to a facility in another country	⁶⁰⁶ <input type="text"/>	⁶⁰⁷	⁶⁰⁸
Total waste and recyclable materials exported		⁶⁰⁹	⁶¹⁰

6.3 Please identify the names and locations of all facilities (outside of the province/territory that you are reporting for) to which the (above) waste for disposal or materials for recycling or reuse were taken.

Waste (check X)	Name of Facility	Owner	Address
⁶¹¹ <input type="radio"/>	⁶¹²	⁶¹³	⁶¹⁴
⁶¹⁵ <input type="radio"/>	⁶¹⁶	⁶¹⁷	⁶¹⁸
⁶¹⁹ <input type="radio"/>	⁶²⁰	⁶²¹	⁶²²
⁶²³ <input type="radio"/>	⁶²⁴	⁶²⁵	⁶²⁶

Recycling (check X)	Name of Facility	Owner	Address
⁶²⁷ <input type="radio"/>	⁶²⁸	⁶²⁹	⁶³⁰
⁶³¹ <input type="radio"/>	⁶³²	⁶³³	⁶³⁴
⁶³⁵ <input type="radio"/>	⁶³⁶	⁶³⁷	⁶³⁸
⁶³⁹ <input type="radio"/>	⁶⁴⁰	⁶⁴¹	⁶⁴²

Imports of Waste

6.4 Was waste from outside this province/territory disposed in this company's disposal facilities?

⁶⁴³ Yes ➤ Go to Question 6.5

⁶⁴⁴ No ➤ Go to Section 7

6.5 Check (X) all that apply and indicate quantities disposed.

	Check (X) if yes	Quantity of waste imported (tonnes)
Waste from other provinces/territories disposed of in your facilities	⁶⁴⁵ <input type="text"/>	⁶⁴⁶
Waste from other countries disposed of in your facility	⁶⁴⁷ <input type="text"/>	⁶⁴⁸
Total waste imported		⁶⁴⁹

SECTION 7

Hazardous Waste Treatment and Disposal

7.1 Did this company operate a facility(ies) to treat, incinerate or landfill (or otherwise contain) hazardous waste in 2000?

⁷⁰¹ Yes ➤ Go to Question 7.2

⁷⁰² No ➤ Go to Section 8

7.2 Did this company:

Own or lease the facility(ies)

⁷⁰³ Yes

⁷⁰⁴ No

Operate the facility(ies) for another owner ?

⁷⁰⁵ Yes

⁷⁰⁶ No

7.3 If yes, what quantity of hazardous waste did this company treat or dispose of in 2000?

(tonnes)
⁷⁰⁷

7.4 Of the total in Question 7.3, please indicate the percentage of materials treated or disposed, by type.

Organic solvents, solutions and still bottoms

percentage
⁷⁰⁸ %
⁷⁰⁹ %
⁷¹⁰ %
⁷¹¹ %
⁷¹² %
⁷¹³ %
⁷¹⁴ %
⁷¹⁵ %

Oils and greases, oily mixtures and residues

Heavy metal solutions and residues

Inorganic sludges, solutions and residues

Pesticide and herbicide wastes

PCB wastes

Other (miscellaneous chemicals, paint, biomedical waste, etc.)

Total should equal 100%

7.5 Did your company recover recyclable materials (e.g., mercury, oils, lead, nickel) from these operations?

⁷¹⁶ Yes ➤ Go to Question 7.6

⁷¹⁷ No ➤ Go to Section 8

7.6 If yes, what quantity of recyclable materials did this company recover?

(tonnes)
⁷¹⁸

SECTION 8

Financial and Employment Information

8.1 Gross Operating Revenues

Indicate this company's 2000 gross revenues from the provision of each of the following services.

Collection of waste for disposal		801	
			\$
Collection of materials for recycling or reuse		802	
			\$
Operation of a waste transfer facility		803	
			\$
Preparing materials for recycling (e.g., operation of a MRF or composting facility)		804	
			\$
Operation of a <i>non-hazardous</i> waste disposal facility (e.g., landfill or incinerator) (include disposal fees received)		805	
			\$
Operation of a <i>hazardous</i> waste treatment, containment, incineration or disposal facility (include disposal fees received)		806	
			\$
Sewage treatment/containment		807	
			\$
Other waste management revenues (e.g., consulting, brokerage fees)	Specify: <input type="text" value="812"/>	808	
			\$
Sale of recovered materials		809	
			\$
Other non-waste management revenues	Specify: <input type="text" value="813"/>	810	
			\$
Total revenues from all activities		811	\$

8.2 Gross Operating Expenses

Please report this company's 2000 gross operating expenses.

Wages and salaries		814	
			\$
Employer contributions to pension, medical and unemployment insurance plans, etc.		815	
			\$
Fuel and electricity		816	
			\$
Other materials and supplies		817	
			\$
Maintenance and repairs		818	
			\$
Depreciation		819	
			\$
Fees paid for waste disposal (e.g., tipping fees)		820	
			\$
Operating licenses and permits		821	
			\$
Other	Specify: <input type="text" value="824"/>	822	
			\$
Total operating expenses		823	\$

SECTION 8 - Concluded

Financial and Employment Information - Concluded

8.3 Capital Expenditures

Report this company's 2000 capital expenditures. Include new (non-amortized) and used assets purchased in Canada and all imported assets (new and used).

	825
Vehicles	\$
	826
All other machinery and equipment	\$
	827
Construction and refurbishing of facilities (excluding residences)	\$
	828
Maintenance and repairs of new and used assets	\$
	829
Other <i>Specify:</i> 831	\$
	830
Total capital expenditures	\$

8.4 Employment

Report the usual number of full-time (30 or more hours per week) and part-time (less than 30 hours per week) employees working for this company. Do not include contract employees or sub-contractor's employees.

	Number of employees	
	Full-time	Part-time
	832	833
Total employees		

SECTION 9

Certification

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

Signature



Date

Day

Month

Year

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

Name of person completing this report

Telephone

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

Title of person completing this report

Fax

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

Email Address

9.2 Approximately how long did it take you and other employees in your company to collect the data and complete this survey?

Hours

901

--

9.3 In the future, would you prefer to receive this survey in an electronic format?

902 Yes

903 No

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 if you wish to provide additional information about your waste management activities.

If you have any questions, please contact us.

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

Fax: 1-800-755-5514

Email: enviro.oid.waste@statcan.ca

Please return this questionnaire in the envelope provided

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY!



Waste Management Industry Survey: Government Sector, 2000

Confidential when completed

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

Français au verso

Please complete

Name of Government, Agency, Commission or Other Waste Management Organization

C/O

Street Address

City

Province/Territory

Postal Code



Please read before completing

Purpose of the 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 business sector waste management for 2000. 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 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): **1-888-659-8157**
Fax: **1-800-755-5514**
Email: **enviro.oid.localgovt@statcan.ca**

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

Please do not return this form by e-mail.

When completed, please return the diskette or the hard copy form in the envelope provided to : Operations and Integration Division, JT-2-C4, Statistics Canada, Ottawa, Ontario, K1A 0T6

Reporting Period

Please report for the calendar year, 2000

General Instructions

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

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

If your 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 your jurisdiction should be interpreted as all municipalities under your jurisdiction. Please provide a list of member municipalities.

If you represent a lower-tier government and you do not maintain statistics on any of the functions covered by this questionnaire, please return this form and indicate in the Comments Section who we may contact to obtain this information.

If your 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 8 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 convert quantities (truck loads, pounds, etc.) to metric tonnes. If you cannot convert, please indicate what measurement you are using.

Estimate if necessary.

Ontario respondents only : The Ontario Ministry of the Environment has requested access to the individual records of Ontario 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 Ontario Ministry of the Environment survey of waste management activities.

Please read and complete the consent form included in this package and return it along with your paper form or diskette.

IMPORTANT: 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.	D	M	Y
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Ed.	D	M	Y
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Kyd.	D	M	Y
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Bat.			
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Coll.	
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FSC	
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SECTION 1

Who are you responding for?

List all municipalities, cities, villages, towns and townships in your jurisdiction for which you are responding as well as the type of information you are providing and the types of services provided by each municipality.

City / Municipality		Financial and employment section	Disposal facilities section	Other sections	Services provided by jurisdiction			
					Collection	Disposal	Diversion	Waste management planning / administration
		(please indicate with an "X")						
Your Jurisdiction	101	102	103	104	105	106	107	108
Municipality # 1	109	110	111	112	113	114	115	116
Municipality # 2	117	118	119	120	121	122	123	124
Municipality # 3	125	126	127	128	129	130	131	132
Municipality # 4	133	134	135	136	137	138	139	140
Municipality # 5	141	142	143	144	145	146	147	148
Municipality # 6	149	150	151	152	153	154	155	156
Municipality # 7	157	158	159	160	161	162	163	164
Municipality # 8	165	166	167	168	169	170	171	172
Municipality # 9	173	174	175	176	177	178	179	180

SECTION 2

Collection and Preparation of Waste and Recyclables (including compostables and composting)

2.1 Did this jurisdiction administer a programme to collect waste for disposal in 2000?

²⁰¹ Yes ➤ Go to Question 2.2 ²⁰² No ➤ Go to Question 2.4

2.2 If yes, who collected the waste? (Check all that apply.)

This jurisdiction's employees

²⁰³

Contractor(s) hired by this jurisdiction

²⁰⁴

(please specify name(s) of contractor(s))

²⁰⁵ _____

²⁰⁶ _____

2.3 Indicate the sources of the waste collected by or on behalf of this jurisdiction.

Residential

Percentage (Please see guide for information)	
²⁰⁷	%
²⁰⁸	%
²⁰⁹	%
²¹⁰	%

Industrial, Commercial and Institutional

Construction and Demolition

(total should equal 100%)

2.4 Did this jurisdiction administer a programme to collect materials for recycling, reuse or composting in 2000?

²¹¹ Yes ➤ Go to Question 2.5 ²¹² No ➤ Go to Question 2.7

2.5 If yes, who collected the materials? (Check all that apply.)

This jurisdiction's employees

²¹³

Contractor(s) hired by this jurisdiction

²¹⁴

(please specify name(s) of contractor(s))

²¹⁵ _____

²¹⁶ _____

2.6 Indicate the sources of the recyclable materials collected by or on behalf of this jurisdiction.

Residential

Percentage (Please see guide for information)	
²¹⁷	%
²¹⁸	%
²¹⁹	%
²²⁰	%

Industrial, Commercial and Institutional

Construction and Demolition

(total should equal 100%)

SECTION 2 - Concluded

**Collection and Preparation of Waste and Recyclables
(including compostables and composting) - Concluded**

2.7 In 2000, was there a municipally or privately operated facility in your jurisdiction that processed compostable materials or prepared materials for recycling? (e.g. MRFs and central composting facilities).

²²¹ Yes ➤ Go to Question 2.8

²²² No ➤ Go to Section 3

2.8 If yes, please complete the following.

Name or address of facility		Operator of facility		Sources of materials (percentage) <i>(Please see guide for information)</i>			
		Your jurisdiction (check (X) if yes)	Contractor or other municipality (please specify name)	Residential	Non-residential (industrial, commercial and institutional)	Construction and Demolition	<i>(totals should equal 100%)</i>
Facility #1	²²³	²²⁴ <input type="radio"/>	²²⁵	²²⁶ %	²²⁷ %	²²⁸ %	²²⁹ %
Facility #2	²³⁰	²³¹ <input type="radio"/>	²³²	²³³ %	²³⁴ %	²³⁵ %	²³⁶ %
Facility #3	²³⁷	²³⁸ <input type="radio"/>	²³⁹	²⁴⁰ %	²⁴¹ %	²⁴² %	²⁴³ %

Please list additional facilities in the Comments Section.

SECTION 3

Waste Diversion

3.1 If your jurisdiction administered a programme to collect recyclable materials in 2000 AND/OR

if there was a municipally or privately operated Material Recovery Facility (MRF) in your jurisdiction, please indicate the quantities of materials collected and/or prepared or processed at the facility in 2000. Please exclude compostable materials that were collected or processed but include this information in Question 3.2 below.

Type of material	Quantity collected and delivered to recycling facility (tonnes)	Quantity prepared or processed at the facility (tonnes)
Newsprint, phone books, magazines	301	302
Corrugated cardboard and boxboard	303	304
Mixed paper fibre	305	306
Glass	307	308
Ferrous metals	309	310
Copper	311	312
Aluminum	313	314
Other non-ferrous metals	315	316
Mixed metals	317	318
Plastic	319	320
Construction and demolition waste	321	322
Other (please specify) : ³⁶⁷	323	324
Totals	325	326

3.2 Composting

In 2000, did your jurisdiction own and/or operate a central composting facility?

²²⁷ Yes ➤ Please complete the following

²²⁸ No ➤ Go to Section 4

Name and address of facility	Name of owner, if not self	Year opened	Quantity of materials entering the facility (tonnes)	Quantity of compost / peat produced (tonnes)	Aerobic process? (check (X))	Anaerobic process? (digestion) (check (X))
329	330	331	332	333	334 <input type="radio"/>	335 <input type="radio"/>
336	337	338	339	340	341 <input type="radio"/>	342 <input type="radio"/>
343	344	345	346	347	348 <input type="radio"/>	349 <input type="radio"/>
350	351	352	353	354	355 <input type="radio"/>	356 <input type="radio"/>
357	358	359	360	361	362 <input type="radio"/>	363 <input type="radio"/>
Totals			364	365		

Please provide information about any additional facilities at the end of questionnaire in comments area. Thank you.

3.3 If your jurisdiction has participated in a backyard composting program, how many backyard composters have been directly distributed by your jurisdiction or through a third party (e.g., a retail outlet) since the start of the programme?

366

SECTION 4

Disposal Facilities : Quantities and Types of Waste

4.1 Did your jurisdiction own or operate a disposal facility for non-hazardous waste (landfill or incinerator) in 2000?

⁴⁰¹ Yes ➤ Complete Sections 4 and 5

⁴⁰² No ➤ Go to Section 6

4.2 For each disposal facility that you operate in 2000, please indicate the name and location (street or highway address), type of facility, type of waste and the amount of waste disposed of in the facility as measured by weigh scales or by providing your best estimate. (Please see Guide for information and definitions)

Name and address of disposal facility	Operator of facility if not self	Type of facility (check (X) one only)		Approximate percentage of waste disposed in facility, by type			Weigh scale present? (check (X) if yes)	Quantity of waste disposed of in the facility in 2000 (tonnes)
		Landfill	Incinerator	Residential	Non-residential (IC&I)	Construction and demolition		
403	404	405 <input type="radio"/>	406 <input type="radio"/>	407 %	408 %	409 %	410 <input type="radio"/>	411
412	413	414 <input type="radio"/>	415 <input type="radio"/>	416 %	417 %	418 %	419 <input type="radio"/>	420
421	422	423 <input type="radio"/>	424 <input type="radio"/>	425 %	426 %	427 %	428 <input type="radio"/>	429
430	431	432 <input type="radio"/>	433 <input type="radio"/>	434 %	435 %	436 %	437 <input type="radio"/>	438
439	440	441 <input type="radio"/>	442 <input type="radio"/>	443 %	444 %	445 %	446 <input type="radio"/>	447
448	449	450 <input type="radio"/>	451 <input type="radio"/>	452 %	453 %	454 %	455 <input type="radio"/>	456
457	458	459 <input type="radio"/>	460 <input type="radio"/>	461 %	462 %	463 %	464 <input type="radio"/>	465
466	467	468 <input type="radio"/>	469 <input type="radio"/>	470 %	471 %	472 %	473 <input type="radio"/>	474
Total waste disposed in all facilities								475

SECTION 5

Disposal Facilities : Facility Characteristics

5.1 Please complete the following:

Name of disposal facility	Year opened	Anticipated closure date	Approved capacity (tonnes)	Remaining capacity (tonnes)	Type of liner (check (X))			Is there a leachate capture system in place? (check (X) if yes)
					Clay	Artificial Membrane	Other / Combination	
501	502	503	504	505	506	507	508	509
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
510	511	512	513	514	515	516	517	518
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
519	520	521	522	523	524	525	526	527
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
528	529	530	531	532	533	534	535	536
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
537	538	539	540	541	542	543	544	545
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
546	547	548	549	550	551	552	553	554
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
555	556	557	558	559	560	561	562	563
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
564	565	566	567	568	569	570	571	572
					<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide information about any additional facilities at the end of questionnaire in Comments Section. Thank you.

Disposal of Bottom Ash and Contaminated Soil (answer only if you owned or leased a landfill)

5.2 Did your landfill(s) receive bottom ash from solid waste or sewage sludge incineration?

573 Yes ➤

Quantity (tonnes)
575

574 No ➤

Go to Question 5.3

5.3 Did you landfill(s) receive contaminated soil?

576 Yes ➤

Quantity (tonnes)
578

577 No ➤

Go to Section 6

If Yes, was this amount included in your response to question 4.2 ?

579 Yes

580 No ➤

Go to Section 6

SECTION 6

Exports and Imports of Non-hazardous Waste for Disposal, Compostable Materials or Recyclable Materials

6.1 Did your jurisdiction transport waste for disposal or materials for recycling or reuse to another province/territory or country in 2000? Include direct shipments and shipments from transfer stations.

⁶⁰¹ Yes ➤ *Go to Question 6.2*

⁶⁰² No ➤ *Go to Question 6.4*

6.2 Check (X) all that apply and indicate quantities transported.

	check (x) if yes	Quantity of waste for disposal (tonnes)	Quantity of materials for recycling or composting (tonnes)
Transported to a facility in another jurisdiction in your province/territory	⁶⁰³	⁶⁰⁴	⁶⁰⁵
Transported to a facility in another province/territory	⁶⁰⁶	⁶⁰⁷	⁶⁰⁸
Transported to a facility in another country	⁶⁰⁹	⁶¹⁰	⁶¹¹
Total waste and recyclable materials exported		⁶¹²	⁶¹³

6.3 Please identify the names and locations of all facilities (outside of the province/territory that you are reporting for) to which the (above) waste for disposal or materials for recycling or reuse were taken.

Waste (X)	Name of Facility	Owner	Address
⁶¹⁴ <input type="radio"/>	⁶¹⁵	⁶¹⁶	⁶¹⁷
⁶¹⁸ <input type="radio"/>	⁶¹⁹	⁶²⁰	⁶²¹
⁶²² <input type="radio"/>	⁶²³	⁶²⁴	⁶²⁵
⁶²⁶ <input type="radio"/>	⁶²⁷	⁶²⁸	⁶²⁹

Recycling (X)	Name of Facility	Owner	Address
⁶³⁰ <input type="radio"/>	⁶³¹	⁶³²	⁶³³
⁶³⁴ <input type="radio"/>	⁶³⁵	⁶³⁶	⁶³⁷
⁶³⁸ <input type="radio"/>	⁶³⁹	⁶⁴⁰	⁶⁴¹
⁶⁴² <input type="radio"/>	⁶⁴³	⁶⁴⁴	⁶⁴⁵

SECTION 6 - Concluded

Imports of Waste

6.4 Was waste from outside your jurisdiction disposed in your jurisdiction's disposal facilities?

⁶⁴⁶ Yes ➤ *Go to Question 6.5*

⁶⁴⁷ No ➤ *Go to Section 7*

6.5 Check (X) all that apply and indicate quantities disposed.

	check (x) if yes	Quantity of waste imported (tonnes)
Waste from another jurisdiction in your province	⁶⁴⁸	⁶⁴⁹
Waste from other provinces/territories disposed of in your facility	⁶⁵⁰	⁶⁵¹
Waste from other countries disposed of in your facility	⁶⁵²	⁶⁵³
Total waste imported		⁶⁵⁴

SECTION 7

Financial and Employment information

7.1 Gross Revenues (do not net out expenditures)

Include all gross revenues from waste management services received in 2000 which were not funded by tax revenues and do not net out expenditures

Gross revenues from utility bill payments (for waste management services)	701	\$
Gross revenues from provision of waste management services to businesses on contract	702	\$
Gross revenues from the sale of recyclable materials	703	\$
Gross revenues from disposal fees received	704	\$
Royalties received for hosting a waste disposal facility	705	\$
Grants, interest free loans, federal or provincial non-tax based revenues (including infrastructure or special program grants and loans)	706	\$
Other non-tax revenues for waste management (e.g. sale of bag tags, sale of composters, other user pay revenues)	707	\$
Total gross revenues from waste management services	708	\$

7.2 Current Expenditures

Include all current and administrative gross expenditures in 2000 related to waste management and do not net out revenues

	In-house expenses (e.g., administration and salaries)	Payments to contractors	Payments to other governments	Totals
Collection of waste, recyclables and compostable materials	709	710	711	712 \$
Disposal fees paid to waste disposal facilities	713	714	715	716 \$
Operation of disposal facilities	717	718	719	720 \$
Operation of recycling facilities	721	722	723	724 \$
Operation of composting facilities	725	726	727	728 \$
Other, Specify : ⁷⁴⁶	729	730	731	732 \$
Total current expenditures	733 \$	734 \$	735 \$	736 \$

SECTION 7 - Concluded

Financial and Employment information - Concluded

7.3 Capital Expenditures

Report any new (non-amortized) capital expenditures in 2000 according to the target of these expenditures. Include new assets purchased in Canada and all imported assets (new and used).

Collection		737	
		\$	
Disposal facilities		738	
		\$	
Recycling facilities		739	
		\$	
Composting facilities		740	
		\$	
Other	Specify: 743	741	
		\$	
Total capital expenditures		742	
		\$	

7.4 Employment

Report the usual number of full-time (30 or more hours per week) and part-time (less than 30 hours per week) employees working in the waste management activities of your jurisdiction in 2000 (do not include contract employees or contractor's employees).

	Number of employees	
	Full-time	Part-time
Total employees	744	745

SECTION 8

Certification

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

Signature



Date

Day

Month

Year

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Name of person completing this report

Telephone

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Title of person completing this report

Fax

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Email Address

8.2 Approximately how long did it take you and other employees in your jurisdiction to collect the data and complete this survey?

Hours

801

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8.3 Do you use the **GAP** (Generally Accepted Principles for Calculating Municipal Waste Flows) methodology in the calculation of your waste flows?

802 Yes

803 No

8.4 In the future, would you prefer to receive this survey in an electronic format?

804 Yes

805 No

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 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.oid.localgovt@statcan.ca

Please return this
questionnaire in the
envelope provided

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY!