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Statistics Canada – Item 16F0002X^PME
National Accounts and Environment Division
System of National Accounts

Local Government Waste Management Survey, 1993

Interim Report

This document is a work in progress, which will be revised and updated as new information becomes available. It is being distributed to respondents and other interested parties for comment.

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Local Government Waste Management Survey, 1993: Interim Report

Statistics Canada – Item 16F0002XNE

August, 1995

Ottawa

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Version française de ce rapport disponible sur demande.

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Symbols

The following symbols are used in this report:

- .. figures not available
- ... figures not appropriate or not applicable
- ✓ service available
- nil or zero
- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet the secrecy requirements of the Statistics Act

This report presents interim results of the *Local Government Waste Management Survey (LGWMS)*, 1993, which gathered information on waste collection and recycling practices by Canadian municipalities. This document is a work in progress, which will be revised and updated as new information becomes available. It is being distributed to respondents and other interested parties for comment.

Landfill operators, however, rarely record the source of the waste and municipalities often depend on the private contractors to report the amounts of waste collected. Private contractors seldom distinguish between household waste and that collected from small commercial and institutional clients. Therefore, there is no single source of information on waste collection and, for some categories, there is no accurate source. For example, many municipalities are unable to provide a breakdown of materials collected for recycling by type. A complete statistical representation of municipal waste management will require the cooperation of provinces, regional governments and private waste management companies.

Despite these problems and limitations, the LGWMS, 1993, provides a useful overview of waste management activities in the larger Canadian municipalities. More than three quarters of the Canadian population are represented in this survey. This coverage ranges between 86 percent of the population in Ontario and 22 percent in Nova Scotia because only municipalities with a 1991 population of 5 000 or more were included in the survey. Since municipalities above this threshold represent a small proportion of the population in some provinces we have only made estimates of total waste for Canada as a whole and for selected regional groupings. Data reported here are limited to waste disposal and recycling activities managed or coordinated by municipalities.

Statistics Canada is also conducting a survey of the private waste management industry for 1994. These results will be available by the end of 1995.

This report was prepared by the Environmental Statistics sub-division of the National Accounts and Environment division under the direction of Philip Smith, Director and Cynthia Baumgarten, Assistant Director.

The editorial process benefited from the comments of the members of the Solid Waste Task Group of the Canadian Council of Ministers of the Environment, as well as the Office of Waste Management and State of Environment Directorate of Environment Canada.

The French translation was edited by Pierre Gagnon. Mitzi Ross provided marketing and technical assistance.

1 Local Government Waste Management, 1993

Federal and provincial government agencies have highly visible roles in environmental protection. In fact, many environmental concerns, such as air quality or the use of water resources, are mainly within their jurisdiction. It is the provincial ministries of environment that are responsible for formulating broad policies and, in most cases, allocating funds to infrastructure and services. However, it generally falls to local governments to develop and to operate various programs and, quite often, the issues involved – development, noise, drinking water, garbage and sewage, for example – have great and direct impacts on individuals in their homes and at their places of work.

This chapter describes the role in 1993 of local governments in waste management. It focuses on issues related to solid waste management and uses data on waste disposal and waste diversion practices that were collected in the *Local Government Waste Management Survey* (LGWMS), 1993.¹

1.1 Provision of waste management services

While all levels of government are involved in solid waste management, they have quite different roles. Direct responsibility of the federal government is limited to waste management in federal lands and facilities, such as Indian reserves, national parks and nuclear installations. Provincial governments control and regulate the collection and the disposal of garbage. Municipalities develop and administer waste management programs² within their jurisdictions. There can be, in addition, considerable interaction among municipalities³ or between municipalities and their provincial government. In such cases, new projects and strategies can be either directed by or in conjunction with the Canadian Council of Ministers of the Environment (CCME) (Mackenzie, 1994).

In general, a provincial department has the overall responsibility for solid waste management policy and the related

LOCAL GOVERNMENT

Local government in Canada includes all government 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.

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 within the jurisdiction of another type of municipality. These include cities, towns, villages, townships, rural municipalities, districts and counties (in Nova Scotia and Alberta), and some quasi municipalities, including local government districts and local improvement districts.

The sample of the LGWMS, 1993, was all lower tier municipalities with a population of at least 5 000 (according to the *Census of Population, 1991*). In all tables and graphics in this report, data refer only to the municipalities in this sample and the part of the Canadian population that they represent.

WASTE

Wastes are all materials that are not wanted by the agent whose activities produce them. Wastes include all materials that are intended for recycling, treatment or disposal without, or with only nominal, remuneration to the waste generator.

WASTE MANAGEMENT

For statistical purposes, waste management includes all activities related to collection, transportation, diversion, treatment or disposal of waste. Waste diversion includes any physical transformation of materials in preparation for recycling or reuse; examples are sorting, cleaning and volume reduction. Waste treatment includes any physical or chemical transformation of waste such as decontamination in preparation for disposal. Waste disposal includes sanitary and secure landfill, incineration and containment of hazardous wastes.

general strategies. Municipalities develop plans for local programs and can also be responsible for their delivery, although supporting services be contracted from private waste management companies. Local government responsibilities can be either shared across municipalities or shared between the upper and lower tiers. Prince Edward Island is the only provincial administration that is directly involved in garbage collection (Canadian Almanac & Directory, 1994).

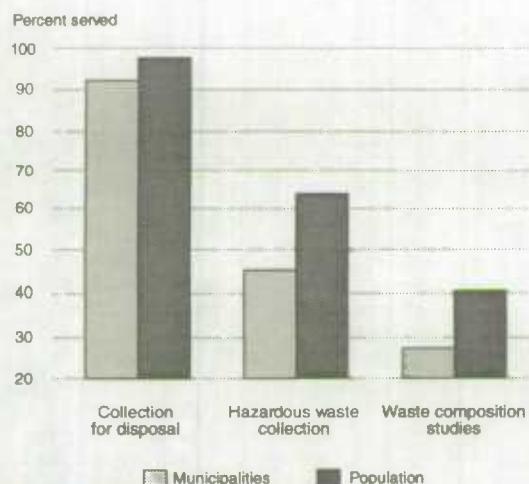
1. For details on the survey itself, including its coverage of total solid waste collection, see Chapter 3, *Survey Design and Methodology*.

2. This usually includes services related to water supply and wastewater treatment, although this chapter is only concerned with solid waste.

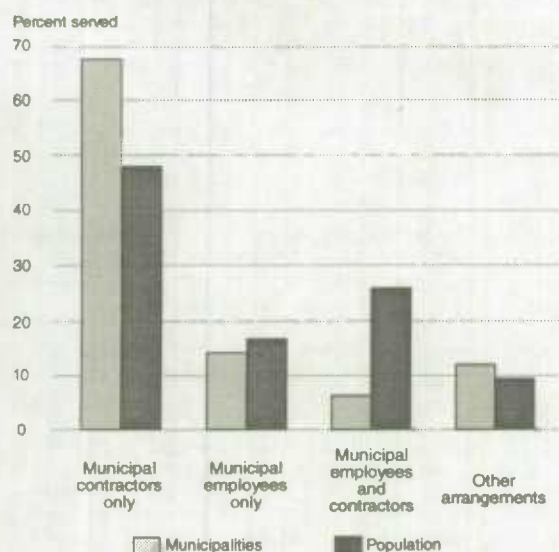
3. That is, several lower tier municipalities sharing common facilities and programs, or cases where the upper tier administration assumes waste management responsibilities for the whole district.

Figure 1.1
Waste Disposal Services, 1993

Availability



Arrangements to collect waste for disposal



Note:
Data include only the surveyed municipalities.
Source:
Statistics Canada, National Accounts and Environment Division.

Although the specific role of the local governments in providing services varies across the country, virtually all municipalities do have waste disposal and waste diversion programs. Figure 1.1 shows that, of the municipalities surveyed in the LGWMS, 1993, 92% (representing 98% of the population)¹ had an organized program to collect waste for disposal. Collection of household waste for recycling was available to 73% of municipalities, representing 90% of the population (Figure 1.2).

1.2 Waste disposal services

By convention, "municipal solid waste" refers to the stream of solid waste for which local governments are in some way responsible. The term usually includes all the waste that is generated within a jurisdiction along with any waste that is produced in other areas but enters the jurisdiction for processing, treatment or disposal. Owing to the differences in the activities that produce them and in the resulting composition, municipal solid waste is often discussed in terms of two broad groups of generators: the residential sector and the industrial, commercial and institutional (ICI) sector.

Some waste monitoring programs find it useful to make a further qualification of the waste stream according to the activity that produces the waste. Environment Canada's Office of Waste Management, for example, considers that municipal solid waste includes all waste produced by private households and by the ICI sector, excluding waste from construction and demolition (C&D) activities. Because of the practical difficulties in measuring the quantities of C&D waste, most municipalities do exclude this material from their estimates. In so doing, about one third of total solid waste, at the national level, is not represented in figures for municipal solid waste.²

Depending on their particular circumstances, local governments may follow several different strategies when providing waste disposal services. These include municipally operated services, inter-municipal agreements and contracts by municipalities with the private sector. There are also contractual arrangements between private waste management companies and either households or other businesses.

Most municipalities in 1993 contracted with private companies to provide all services for collection for disposal (Figure 1.1). About 67% of municipalities (accounting for 48% of the population) were served in this manner. Another 21% of municipalities (representing 43% of the population) were served by programs that are operated either by municipal employees only or by a combination of municipal employees and contracted private companies.

Local governments can usually estimate only the portion of waste for which they either provide municipally operated collection services or arrange contracts with private firms. Such programs do serve a large part of the population and, accordingly, they are responsible for transporting large quantities of waste. This component of waste collected for

1. Unless otherwise specified, all percentages shown for "the population" refer to the total population of municipalities sampled in the LGWMS, 1993.

2. The Greater Vancouver Regional District (GVRD), for example, showed that 41% of its total solid waste collection in 1993 was from demolition, land clearing and construction activities (BC Environment, 1994). For reference, the rest of the solid waste stream contains 10% ICI waste, 4% residential waste and 45% wastes of unknown origin. While the GVRD figures may not necessarily be representative of the composition of waste materials or of the level of available data, they do indicate the difficulty in characterizing the solid waste stream.

disposal amounted to just over 8.6 million tonnes, according to the LGWMS, 1993¹ (Table 1.1). Of this total, 7.1 million tonnes were from the residential sector. The greatest quantities of municipal solid waste were collected in Ontario and in Quebec. Together, these two provinces accounted for 67% of the total collection. Nationally, municipalities of 100 000 or more residents accounted for 42% of waste collected for disposal and 50% of the population.

Hazardous waste is a special case in collecting waste for disposal. Such materials are excluded from the general stream of municipal solid waste because particular techniques and practices are required for their safe transport, storage and disposal. In most cases, hazardous waste that is generated by the ICI sector is collected by privately arranged programs. Services to collect residential hazardous waste were provided by 290 municipalities, which served 64% of the population. At this point, there are no data to show the quantities of hazardous waste that are collected although there is some information on public participation in the such programs. The *Households and Environment Survey, 1994*, shows that 26% of households reported having access to special disposal programs and, of these, 40% of those reported using them (Statistics Canada, 1995).

1.3 Waste diversion services

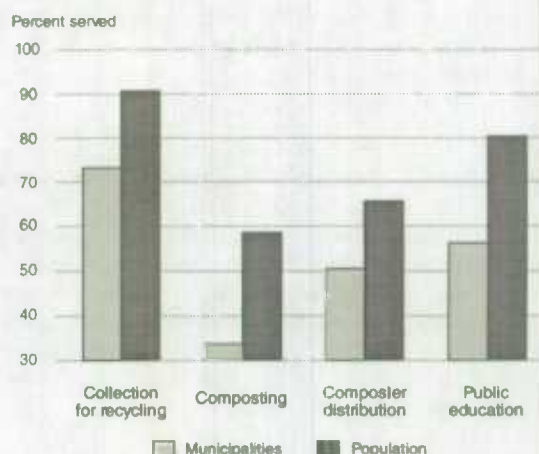
In contemporary municipal waste management, a major goal is to limit both the types and the quantities of waste materials that enter the disposal stream. Waste is diverted from landfill sites and incineration through the continuing efforts of households and businesses to practice reduction, reuse and recycling, which are known collectively as "the 3 Rs":

- *waste reduction* is any action, involving either consumers or manufacturers, that results in less or no waste being created.
- *reuse* refers to practices or systems that allow repeated use of a product in what is essentially its original form, whether for the same or a different purpose, instead of discarding it after a single use.
- *recycling* is a general term for describing any physical, chemical or biological reprocessing of waste that results in a new product.

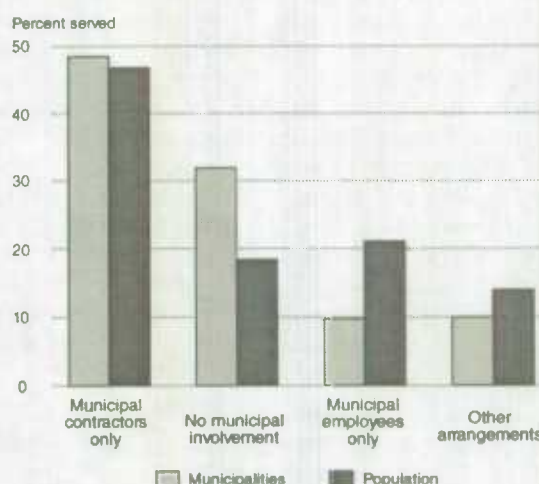
Federal and provincial governments have jurisdiction over specific areas of waste management, such as manufacturing activities and the use of packaging. Provincial governments may also be involved in funding or developing diversion programs with municipalities. Although their activity is limited to the local area, municipalities have a broader role in waste diversion that encompasses the operation of

Figure 1.2
Waste Diversion Services, 1993

Availability



Arrangements to collect residential waste for recycling



Note:
Data include only the surveyed municipalities.
Source:
Statistics Canada, National Accounts and Environment Division.

collection programs as well as providing consulting and education services to their constituents. Local governments are actively encouraging waste diversion activities in both the residential and the ICI sectors by providing information and technical advice. In some cases, local governments may also provide special incentives, to waste generators so that they take advantage of formal programs and other available opportunities to apply different 3 Rs strategies. The greatest role of local government in waste diversion is, however, in providing recycling services.

1. Quantity estimates shown in this chapter refer to the surveyed municipalities only. These figures include only waste collected for disposal by municipal employees or contractors to the municipality.

Recycling

For quite some time, industrial establishments have had recycling in place for certain processes. For example, the wood chips that are a by-product of sawmill production can be used to make pulp for paper instead of having to use whole logs. Mill ends from metal products can also be re-melted to produce different types of commodities. These processes make use of a clean and fairly uniform feedstock for which an eventual use is clearly defined.

Municipal programs, however, are considerably different as they are mainly concerned with post-consumer waste. Products used in the activities of both the residential and ICI sectors at some point become unfit for their original purpose. This diverse stream of materials is often contaminated through use and in collection. As such, recycling of post-consumer waste involves a more elaborate system of separation, collection and cleaning of materials and often requires the establishment of markets for both the recovered materials and the eventual end-product.

As with collecting waste for disposal, there is a variety of arrangements that municipalities use to make recycling services available. In general, the focus of these activities is the residential sector although local governments are not as heavily involved in the actual program operations as they are in waste disposal. In 1993, the most common practice was to contract all collection of household waste for recycling to private companies. Of the local governments surveyed, 48% (representing 47% of the population), reported having this arrangement. Another 10% of municipalities (serving 21% of the population) had only municipal employees involved in collecting household recyclables. In contrast with the programs to collect waste for disposal, quite a large number of respondents (32% of municipalities with 18% of the population) reported having no direct involvement in the collection program for recyclable household waste.¹ In such cases, the collection programs may be operated either by employees of, or by contractors to, the upper-tier governments or to private households or businesses.

The quantity of household waste collected for recycling is quite low in comparison with that collected for disposal². Table 1.2 shows a total collection of 857 thousand tonnes, of which a substantial part originated in Ontario (55%). Of the total, nearly half (406 thousand tonnes) was from municipalities with 100 000 or more residents.

In the last few years, recycling programs have expanded both the population that they serve and the types of materials that they accept (Table 1.3). In 1990, only 80% of municipalities were served by a collection program for household recyclables.³ By 1993, this proportion had risen

Table 1.1

Waste Collected for Disposal by Local Governments¹, by Region and Size of Municipality, 1993

Region	Residential	Non-residential	Total
	thousand tonnes		
Atlantic provinces	450	189	638
Quebec	2 382	376	2 752
Ontario	2 640	423	3 063
Prairie provinces	1 070	296	1 360
B.C., Yukon and N.W.T.	572	265	837
Size of municipality			
5 000 to 29 999 residents	2 174	730	2 892
30 000 to 99 999 residents	1 665	474	2 139
100 000 or more residents	3 276	339	3 615
Canada	7 115	1 543	8 646

Notes:

Figures may not add due to rounding.

1. These figures refer to the sampled municipalities that report having an organized waste collection program of any type. These figures do not reflect the waste collection arrangements that are undertaken between private companies and individual households or businesses, or even the arrangements between the lower and upper tiers of local government.

Source:

Statistics Canada, National Accounts and Environment Division.

Table 1.2

Residential Waste Collected for Recycling, by Region and Size of Municipality, 1993

Region	Quantity collected
	thousand tonnes
Atlantic provinces	21
Quebec	184
Ontario	468
Prairie provinces	76
B.C., Yukon and N.W.T.	109
Size of municipality	
5 000 to 29 999 residents	212
30 000 to 99 999 residents	239
100 000 or more residents	406
Canada	857

Notes:

Figures may not add due to rounding. These figures refer to the surveyed municipalities that report having a program to collect residential waste for recycling.

Source:

Statistics Canada, National Accounts and Environment Division.

markedly to 91%. The largest gains were seen in Quebec, with the proportion rising from 61% to 85%. Much of this increase results from many small municipalities initiating some type of formal program for the first time. Over the same period, collection programs had expanded their range

1. In collecting waste for disposal, only 26 surveyed municipalities (representing 2% of the population) reported having no involvement by the local government in operating the programs.

2. For local governments, household recyclables are generally the least problematic part of diversion activity to measure. It is important to bear in mind that the quantity of waste recycled is likely quite far from the total waste diverted by all 3 Rs activities.

3. Statistics Canada, *Local Government Waste Management Practices Survey 1991*, Public Institutions Division and National Accounts and Environment Division.

Table 1.3
Percentage of the Population with Access to Recycling Programs, 1990 and 1993

	1990	1993
	percent	
Atlantic provinces	52	46
Quebec	61	85
Ontario	96	98
Prairie provinces	77	69
B.C., Yukon and N.W.T.	86	96
Canada	80	91

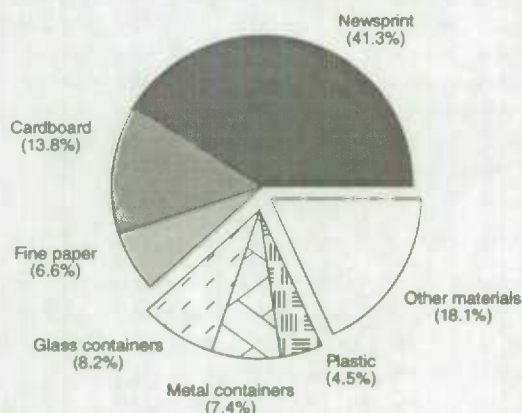
Note:

Data refer to surveyed municipalities only.

Source:

Statistics Canada, National Accounts and Environment Division.

Figure 1.3
Composition of Household Waste Collected for Recycling, Selected Municipalities, 1993



Notes:

Data include only the surveyed municipalities that reported all the details requested for the collection of recyclable household waste. This graphic reflects the responses of 36 surveyed municipalities that provided complete, detailed information on the composition of materials in the household recycling stream.

Source:

Statistics Canada, National Accounts and Environment Division.

of materials accepted from the base of old newsprint, glass bottles and metal containers to include, in some places, cardboard and plastic. In 1993, paper continued to make up a large part, by weight, of the household materials collected for recycling – 62%, of which newsprint accounted for two thirds. Together, glass, metal and plastic containers accounted for 20% of residential waste for recycling.

Such changes in the size and scope of residential recycling reflect, to some extent, recent shifts in a young but growing market for recovered post-consumer materials. The mismatches between materials supplied and demanded that characterized early collection programs are slowly being corrected by changes in the regulatory environment as well as increases in consumer demand for products that contain recycled material (Ontario MMA, 1992). Between 1990 and 1994, for example, the proportion of households reporting regular purchases of paper towels or toilet paper with re-

cycled content rose from 45% to 58% (Statistics Canada, 1995). Continuing technical improvements in the public and private waste management industry may also increase processing capacity, both in terms of the range of materials as well as the total volume handled.

Composting

Composting is a recent addition to municipalities' solid waste management programs. Whether the targeted materials are yard waste, kitchen waste or Christmas trees, local governments approach this diversion option either by operating centralized facilities, with or without an organized collection program, or by developing and encouraging backyard composting for residents. In 1993, collection of compostable materials was offered in 34% of municipalities (serving 59% of the population). In addition, 51% of municipalities (representing 66% of the population) have at some time been involved in distributing backyard composters to residents.

Although composting has great potential for reducing the amount of organic material that enters the disposal stream, households have not adapted to this option as quickly as they have for other types of recycling programs. Among households, reported use of a compost heap, compost container or composting service rose from 17% to 23% between 1991 and 1994 (Statistics Canada, 1995).

1.4 Selected waste disposal and recycling ratios¹

Up to this point, this chapter has dealt mainly with a national view of local government waste management practices and the total magnitude of solid waste that municipalities for which municipalities are in some way responsible. This section presents some of the ratios that are used in evaluating the solid waste stream and it also shows some of the variability that underlies the broad national picture.

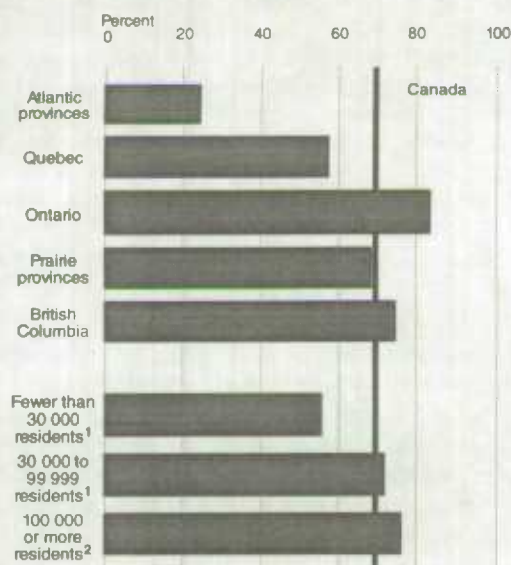
Regions and municipality size

The effect of regions and municipality size on environmental characteristics has been demonstrated in other surveys. For example, the *Households and the Environment Survey, 1994*, has shown that reported access to and use of recycling programs by households varies both by region and by municipality size (Figure 1.4). Similar patterns were found in the reported use of composting and hazardous waste collection programs (Figure 1.5). In the rank order of regions and municipality size groups, these results are generally consistent with those of the LGWMS, 1993 (Tables 1.4 and 1.5).

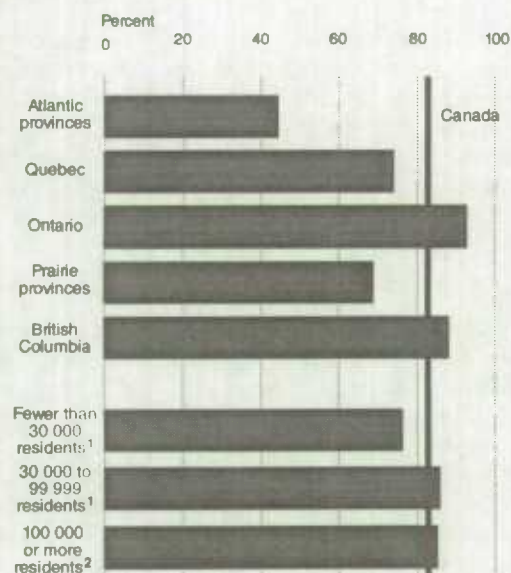
1. Given the number of factors that contribute to the variability of estimates, it cannot be emphasized enough that the ratios shown in this section should be interpreted very carefully. It is recommended, therefore, that their use be limited to rank or order-of-magnitude comparisons only.

Figure 1.4
Reported Access to and Use of Paper Recycling Programs, by Region and Size of Area of Residence, 1994

Households that report having access to programs



Households that report using programs



Notes:

Rates are based on perceptions of the respondents of having or of using programs. In reporting for the LGWMS, 1993, rates are based on the total population of municipalities that have recycling programs (see also Tables 1.4 and 1.5).

1. Includes all rural areas

2. Includes only urban areas.

Source:

Statistics Canada, 1995.

Variations in waste collection patterns across regions generally reflect the administrative context of waste management. As discussed in the beginning of this chapter, municipal waste management reflects policy and program decisions that are made at the provincial or territorial level. Such decisions may take the form, for example, of environmental legislation, guidelines for waste disposal, targets for waste diversion, program funding or cost-recovery policies. These will certainly influence the type and extent of services offered at the local level.

Variation according to municipality size group indicates the influence of population density on the provision of waste management services. Local government services are often limited by dwelling type and, in those cases, services to high-density dwellings (e.g., row houses and apartments) would be provided by private companies contracted by building owners or property managers. The incidence of such high-density dwellings is generally higher in large municipalities than in small ones, which may tend to lower their waste collection rates. Another consideration is the total population served in a given municipality. While it can be costly and difficult to provide sufficient infrastructure to dispose of large quantities of waste, the opposite may hold for diversion programs. Larger municipalities may benefit from economies of scale in providing collection services and marketing recovered materials.

Waste collected per person

The per capita rate of waste collected for disposal is an indication of the state of consumption patterns – and therefore the waste generation patterns – of businesses, institutions, households and individuals.

Two such ratios from the LGWMS, 1993, are shown in Table 1.4. First, the residential rate (330 kg per person) is related to the waste generating capacity of activities in homes. By this measure, in 1993, the average person in the surveyed municipalities each day disposed of 0.9 kg of materials, which were mostly old newspapers, yard and kitchen waste, and packaging. The second measure, the combined rate of residential plus ICI waste (401 kg per person) is an indication of the waste intensity of all the activities that are represented in a jurisdiction although, for this particular year of data, there is some question as to whether C&D wastes have been fully taken into account.

The regional variation shown in Tables 1.4 and 1.5 is likely related to both the administration of municipal waste management in those areas and the average population density of surveyed municipalities. In the LGWMS, 1993, the quantity of waste collected for disposal includes only the material collected by employees of, or by contractors to, surveyed municipalities. This quantity is clearly influenced by regional waste management policies and the accompanying institutional arrangements. Moreover, in Quebec and in the Atlantic provinces, the regional effect is compounded by population density. Surveyed municipalities in these regions were, on average, smaller than those in other areas.

Table 1.4
Selected Waste Disposal¹ Ratios, by Region and Size of Municipality, 1993

Region	Waste collected for disposal ¹						Reference municipalities and population ²		
	Residential			Total			number of municipalities	thousand persons	persons per municipality
	thousand tonnes	tonnes per municipality	kilograms per person	thousand tonnes	tonnes per municipality	kilograms per person			
Atlantic provinces	450	8 191	462	634	11 519	650	55	975	17 722
Quebec	2 382	13 014	452	2 752	15 037	522	183	5 269	28 793
Ontario	2 641	12 946	288	3 063	15 017	334	204	9 167	44 936
Prairie provinces	1 070	12 586	312	1 360	16 001	397	85	3 425	40 296
B.C., Yukon and N.W.T.	572	9 080	211	837	13 285	308	63	2 715	43 098
Size of municipality									
5 000 to 29 999 residents	2 174	4 748	414	2 892	6 315	550	458	5 254	11 472
30 000 to 99 999 residents	1 665	17 525	304	2 139	22 514	390	95	5 484	57 731
100 000 or more residents	3 276	88 533	303	3 615	97 697	334	37	10 812	292 229
Canada	7 115	12 059	330	8 646	14 654	401	590	21 551	36 527

Notes:

Figures may not add due to rounding. Data include only the surveyed municipalities. Population estimates refer to July 1, 1993.

1. Waste collected by municipal employees or private companies contracted by municipalities.

2. Ratios are based on the total population of municipalities that report having an organized program to collect waste for disposal.

No adjustments have been made to reflect the actual population that is served by such programs.

Source:

Statistics Canada, National Accounts and Environment Division.

Table 1.5
Selected Recycling Ratios, by Region and Size of Municipality, 1993

Region	Residential waste collected for recycling				Reference municipalities and population ¹		
	tonnes	tonnes per municipality	kilograms per person	percent of total collected ²	number of municipalities	thousand persons	persons per municipality
Atlantic provinces	21	990	43	4	21	488	23 239
Quebec	184	1 392	40	7	132	4 568	34 609
Ontario	468	2 363	52	15	198	9 081	45 865
Prairie provinces	76	1 218	24	7	62	3 204	51 684
B.C., Yukon and N.W.T.	109	1 882	40	16	58	2 719	46 878
Size of municipality							
5 000 to 29 999 residents	212	623	52	9	341	4 075	11 950
30 000 to 99 999 residents	239	2 598	46	13	92	5 173	56 233
100 000 or more residents	406	10 677	38	11	38	10 812	284 539
Canada	857	1 820	43	11	471	20 061	42 592

Notes:

Figures may not add due to rounding. Data include only the sampled municipalities. Population estimates refer to July 1, 1993.

1. Ratios are based on the total population of all municipalities that report having an organized program to collect waste for disposal or to collect household waste for recycling. No adjustments have been made to reflect the actual population that is served by such programs.

2. Quantity of household materials collected for recycling as a percentage of residential waste collected for disposal plus residential materials collected for recycling. Residential waste collected for disposal includes waste collected by employees of, or by private companies contracted by, surveyed municipalities (See Table 1.4).

Source:

Statistics Canada, National Accounts and Environment Division.

Neither the residential nor the combined rate of residential plus ICI waste explicitly takes into account waste from C&D activities. In addition, these rates cannot take into account the part of the waste stream that is not under the responsibility of municipalities or their contractors. The latter may result in an underestimate of the combined rate of residential plus ICI waste per capita.

The reader should also consider that, for small municipalities, per capita rates are likely to be very sensitive to variations in the estimates of population and of quantities collected. If either the population estimate or the quantity estimate is adjusted by even a very small percentage, then

there could be quite a substantial change to the per capita rate.

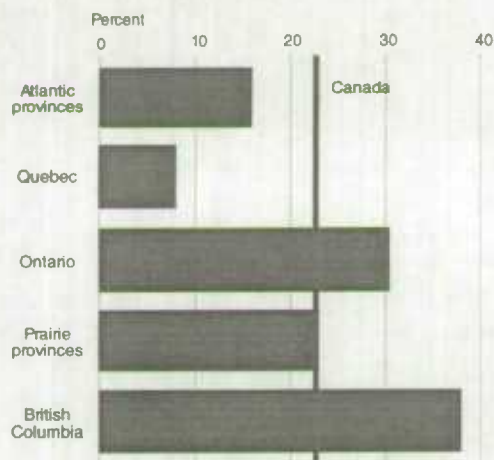
Waste collected per municipality

The average quantity of waste that is collected by each municipality gives an indication of the magnitude of the waste disposal stream with which particular local governments contend.

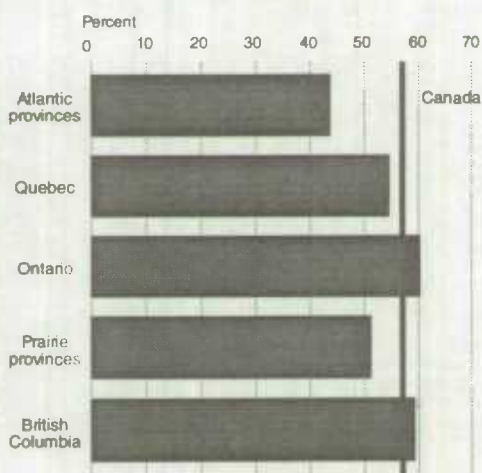
Even when the per capita waste collection is low, a high population density can result in a large total volume of waste for disposal. This was the case in Ontario, where the

Figure 1.5
Reported Use of Composting and Special
Disposal¹ Programs, by Region, 1994

Households that report using composting programs



Households that report using special disposal programs



Note:
Special disposal programmes include any curbside or depot collection of household hazardous waste.
Source:
Statistics Canada, 1995.

per capita rate of residential waste collection (288 kg per person) was well below the national average. However, the average Ontario municipality also had to address the disposal of somewhat more waste (a little over 12 000 tonnes per municipality) than the national average. The opposite situation held in the Atlantic provinces, where municipalities were smaller and the regional rate of residential waste per capita (462 kg per person) was higher. They also had the

lowest regional rate of collection for disposal per municipality (just over 8 000 tonnes per municipality).

When each municipality's collection volume is low, it may be difficult to achieve economies of scale, particularly in collecting recyclable materials, and to find markets for quite small volumes of recovered materials. This would be a consideration with both the total volume of the recyclables stream and even which particular materials are included in the stream. This may, to some extent, account for the lower service rates in municipalities in the smallest size group (5 000 to 29 999 residents). In addition, smaller municipalities do not generally collect as many types of material for recycling compared with larger ones.

Conclusion

The LGWMS, 1993, provides some basic information on the strategies applied and the magnitude of the waste stream that municipalities are engaged in managing. There is, however, still much to be measured and to be understood concerning municipal solid waste. Continued monitoring and closer study of municipal waste management programs is required and one possible approach is an integrated survey of both the public and the private components of the waste management industry.

Supplementary data are also needed on the factors influencing the role of local governments in waste management and the waste disposal and diversion habits of the residential and the ICI sectors. To this end, an obvious starting point would be the issues raised in analysing the LGWMS, 1993 – the relationships between the upper and lower tier municipalities, the relationships between local governments and private waste management companies, along with the effects of population density and urbanization on waste management practices.

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2 Waste Management Activities

This chapter presents a detailed inventory of waste management practices of municipalities surveyed in the LGWMS, 1993. It provides a close look at the programs implemented in particular areas and shows the level of data that are currently available on the disposal and diversion streams of municipal solid waste. A summary of these data, by region and size of municipality, is shown in Table 2.1.

On the questionnaire, surveyed municipalities were asked to give Statistics Canada permission to publish their data at a detailed level. For municipalities that did consent to this,

detailed data are shown in Table 2.2. While reading this table, the reader should bear in mind that differences between municipalities and between regions may be greatly influenced by factors other than the rate of solid waste generation. Some such factors are described in the preceding chapter. The reader should also note that per capita rates in small areas are very sensitive to variations in the population estimate – that is, even very small percentage errors in the population figure could result in a much different per capita rate.

Table 2.1
Availability of Waste Management Programs, by Region and Size of Municipality, 1993

Region	Surveyed population		Collection service		Waste disposal programs		Waste composition studies	
	municipalities	thousand persons	municipalities	thousand persons	Hazardous waste collection		municipalities	thousand persons
					municipalities	thousand persons		
Atlantic provinces	64	1 105	57	1 048	8	68	29	449
Quebec	189	5 362	183	5 269	84	3 215	41	2 485
Ontario	218	9 278	204	9 187	127	7 630	53	3 485
Prairie provinces	104	3 609	85	3 431	63	3 037	30	1 238
B.C., Yukon and N.W.T.	67	2 818	83	2 715	8	186	22	1 324
Size of municipality								
5 000 to 29 999 residents	508	5 780	460	5 334	210	2 533	124	1 398
30 000 to 99 999 residents	97	5 579	95	5 484	54	3 073	34	2 111
100 000 or more residents	37	10 812	37	10 812	26	8 530	17	5 472
Canada	642	22 171	592	21 630	290	14 136	175	8 980

Region	Collection service for recyclable household waste		Collection of organic waste for composting		Distribution of backyard composters		Public education programs	
	municipalities	thousand persons	municipalities	thousand persons	municipalities	thousand persons	municipalities	thousand persons
Atlantic provinces	20	503	13	304	14	285	33	717
Quebec	132	4 568	47	2 219	80	2 569	80	3 106
Ontario	198	9 081	111	7 148	190	8 700	153	8 400
Prairie provinces	62	3 210	26	1 978	20	1 013	56	3 178
B.C., Yukon and N.W.T.	58	2 719	19	1 319	40	1 988	39	2 401
Size of municipality								
5 000 to 29 999 residents	343	4 096	139	1 692	236	2 769	254	3 136
30 000 to 99 999 residents	90	5 173	49	2 910	60	3 551	74	4 390
100 000 or more residents	37	10 812	28	8 366	28	8 234	33	10 276
Canada	470	20 082	216	12 968	324	14 554	361	17 801

Notes:

Figures may not add due to rounding. Data include only the surveyed municipalities. Population estimates refer to July 1, 1993.

Source:

Statistics Canada, National Accounts and Environment Division.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services			Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies		
		for disposal	Municipality				Residential	Non- residential	Total		Hazardous waste	Composition			
			Employees	Contractors	Other									Curbside	Depot
Newfoundland															
Bay Roberts	5.5	x	x	x	x	x	x	x	x	x	x	x	x		
Carbonear	5.3	✓	✓	...	...	100	1 500	-	1 500	280	...	...	...
Channel-Port aux Basques	5.6	✓	✓	...	...	100	5 200	2 000	7 200	930	...	✓	...
Conception Bay South	22.4	✓	...	✓	...	100	18 000	6 000	24 000	800	...	...	...
Corner Brook	22.4	✓	...	✓	...	100	30 000	10 000	40 000	1 340	...	...	...
Gander	10.4	✓	✓	...	...	84	2 600	..	..	250	...	...	...
Grand Falls-Windsor	14.8	✓	✓	...	✓	93	3 900	-	3 900	260	...	...	...
Happy Valley-Goose Bay	8.6	✓	...	✓	...	100	10 000	-	10 000	1 160	...	...	...
Labrador City	9.1	✓	✓	✓	...	100	14 300	-	14 300	1 580	...	...	...
Marystown	6.8	x	x	x	x	x	x	x	x	x	x	x	x		
Mount Pearl	23.8	✓	✓	...	...	100	7 500	-	7 500	320	...	...	...
St. John's	96.1	✓	✓	...	...	100	39 195	-	39 195	410	...	...	...
Stephenville	7.6	✓	✓	...	...	100	3 385	-	3 385	440	...	✓	...
Prince Edward Island															
Charlottetown	15.7	✓	✓	✓	...	71	3 000	600	3 600	190	...	...	1993
Sherwood	6.1	✓	...	✓	...	3	3 200	800	4 000	520	...	...	...
Summerside	7.3	✓	✓	✓	...	100	2 806	772	3 578	380	...	...	1993
Nova Scotia															
Amherst	9.7	...	...	...	...	..	..	-	..	..	...	...	1990
Annapolis	23.5	✓	...	✓	...	100	1 200	-	1 200	50	...	...	...
Antigonish	19.1	✓	✓	...	...	100	3 800	690	4 290	190	...	...	1991
Argyle	9.2	...	...	...	...	..	..	..	..	..	...	...	1991
Barrington	7.8	✓	...	✓	...	100	3 520	-	3 520	450	...	...	1993
Bedford	11.7	x	x	x	x	x	x	x	x	x	x	x	x		
Bridgewater	7.2	✓	...	✓	...	100	5 829	3 639	9 468	800	...	...	1992
Cape Breton	119.5	✓	✓	✓	...	100	31 000	31 000	62 000	260	...	...	...
Chester	10.8	✓	...	✓	...	100	8 000	-	8 000	740	...	...	...
Clare	9.7	✓	...	✓	...	100	180	60	240	20	...	...	...
Colchester	47.4	✓	...	...	✓	..	..	..	..	..	...	...	1991
Cumberland	34.1	...	...	...	...	..	..	..	..	..	...	...	1989
Dartmouth	68.4	✓	...	✓	...	68	22 000	-	22 000	320	...	...	...
Digby	9.2	x	x	x	x	x	x	x	x	x	x	x	x		
East Hants	19.3	x	x	x	x	x	x	x	x	x	x	x	x		
Glace Bay	19.4	✓	✓	...	...	100	5 500	5 700	11 200	280	...	...	1994
Guysborough	6.3	✓	...	✓	...	100	5 500	293	5 793	870	✓	...	...
Halifax (City)	115.4	✓	✓	✓	...	50	25 000	9 500	34 500	220	...	...	...
Halifax (County)	329.1	✓	...	✓	...	100	42 600	-	42 600	130	...	✓	1990		
Inverness	21.5	x	x	x	x	x	x	x	x	x	x	x	x		
Kentville	5.7	✓	...	✓	...	100	4 400	7 200	1 160	780	...	...	1994
Kings	56.0	✓	✓	...	...	100	10 000	-	10 000	180	...	...	1993
Lunenburg	25.7	✓	...	✓	...	100	5 247	9 844	15 191	200	...	...	1992
New Glasgow	9.9	x	x	x	x	x	x	x	x	x	x	x	x		
New Waterford	7.7	✓	...	✓	...	100	2 700	-	2 700	350	...	...	...
North Sydney	7.2	✓	...	✓	...	100	2 060	-	2 060	280	...	...	...
Pictou	49.4	✓	...	✓	...	100	5 344	8 000	13 344	110	...	...	...
Queens	12.9	✓	...	✓	...	100	5 300	-	5 300	410	...	...	1993

Symbols are explained on page ii. Notes are on page 38.

Table 2.2
Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality	
Recycling service	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education		
availability				percent	tonnes							percent	availability				
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Newfoundland
...	...	...	...	...	...	...	...	...	...	...	...	...	✓	...	✓	...	Bay Roberts
...	...	...	...	...	...	...	...	...	...	...	...	...	✓	...	✓	...	Carbonear
✓	...	...	✓	*	...	...	...	...	...	...	...	...	...	...	✓	...	Channel-Port aux Basques
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Conception Bay South
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Comer Brook
✓	...	...	✓	*	5	-	1	-	10	10	27	1	...	...	✓	...	Gender
✓	...	...	✓	*	119	-	-	6	-	12	137	3	...	...	...	...	Grand Falls-Windsor
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Happy Valley-Goose Bay
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Labrador City
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Marystown
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Mount Pearl
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Stephenville
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	St. John's
Prince Edward Island																	
...	...	...	...	...	...	...	...	...	...	...	...	...	✓	✓	...	...	Charlottetown
✓	...	...	✓	3	...	...	...	...	...	...	5 500	63	✓	...	✓	...	Sherwood
✓	✓	✓	...	100	...	...	...	...	...	...	500	15	...	...	✓	...	Summerside
Nova Scotia																	
✓	...	...	✓	*	18	40	6	12	12	36	142	...	...	...	✓	...	Amherst
✓	...	✓	...	50	100	20	60	20	80	120	400	25	...	...	✓	...	Annapolis
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Antigonish
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Argyle
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Barrington
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Bedford
...	...	...	...	38	...	...	...	...	...	...	2 190	27	...	✓	✓	...	Bridgewater
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Cape Breton
✓	...	...	✓	*	14	4	6	15	6	4	47	1	...	✓	✓	...	Chester
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Clare
✓	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Colechester
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Cumberland
✓	...	...	✓	68	...	...	...	...	...	...	...	...	...	✓	...	✓	Danmouth
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Digby
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	East Hants
...	✓	...	✓	...	...	...	...	...	...	...	...	...	...	...	...	...	Glace Bay
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Guysborough
✓	...	✓	...	50	1 202	...	...	...	...	900	1 952	7	✓	...	✓	...	Halifax (City)
✓	...	...	✓	100	1 202	81	-	227	214	132	1 855	4	...	...	...	...	Halifax (County)
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Inverness
✓	...	...	✓	90	105	-	-	80	2	2	169	4	✓	...	...	...	Kentville
✓	✓	...	...	55	481	-	-	233	108	10	832	6	...	✓	✓	...	Kings
✓	✓	...	...	*	16	-	-	22	4	2	44	1	...	...	✓	...	Lunenburg
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	New Glasgow
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	New Waterford
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	North Sydney
✓	...	✓	...	*	25	12	4	6	4	710	761	12	...	...	✓	...	Pictou
✓	...	✓	...	100	750	...	250	36	31	148	965	15	...	...	✓	...	Queens

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services				Dwellings served	Waste collected			Other programs		
		disposal	for Municipality			Residential		Non- residential	Total	Residential waste per capita kilograms per person	Hazardous waste		Composition studies
			Employees	Contractors	Other						Curbside	Depot	
Richmond	11.2	✓	...	✓	...	100	3 180	880	4 060	280	...	...	1994
Shelburne	5.5	✓	...	✓	...	100	2 000	-	2 000	370	...	...	1990
Stellarton	5.2	...	...	...	...	..	..	..	..	..	...	...	...
Sydney	26.0	✓	✓	...	...	100	3 640	3 000	6 640	140	...	...	1994
Sydney Mines	7.5	x	x	x	x	x	x	x	x	x	x	x	...
Truro	11.9	✓	...	...	✓	..	..	..	..	..	...	...	1986
Victoria	8.7	✓	...	✓	...	..	..	..	..	..	...	...	...
West Hants	14.1	✓	...	✓	...	100	..	..	3 152	..	...	...	1994
Yarmouth (Municipality)	10.8	x	x	x	x	x	x	x	x	x	x	x	x
Yarmouth (Town)	7.8	✓	...	...	✓	..	..	..	..	..	...	...	1984
New Brunswick													
Bathurst	14.4	✓	✓	...	...	100	4 578	-	4 578	320	...	...	...
Campbellton	8.6	✓	...	✓	...	83	4 000	-	4 000	460	...	...	...
Chatham	6.6	x	x	x	x	x	x	x	x	x	x	x	x
Dieppe	10.5	✓	...	✓	...	82	3 215	-	3 215	310	...	✓	1993
Edmundston	10.7	✓	...	✓	...	100	3 950	3 810	7 760	370	...	✓	1991
Fairvale	5.2	...	...	...	...	..	..	..	..	..	...	...	...
Fredericton	46.7	✓	...	✓	...	82	11 964	242	12 206	280	...	...	...
Grand Falls	8.3	...	...	...	...	..	..	..	..	..	...	✓	1994
Moncton	57.4	✓	...	✓	...	100	27 000	30 000	57 000	470	...	...	1990
New Maryland	5.8	✓	...	✓	...	100	1 182	-	1 182	200	...	...	1994
Newcastle	5.8	x	x	x	x	x	x	x	x	x	x	x	x
Oromocto	8.8	✓	...	✓	...	100	3 465	-	3 465	390	...	✓	...
Quispamsis	8.7	x	x	x	x	x	x	x	x	x	x	x	x
Riverview	16.5	✓	✓	...	...	81	4 036	99	4 135	250	...	...	1993
Sackville	5.5	✓	...	✓	...	100	2 440	-	2 440	440	...	...	1992
Saint John	73.8	✓	✓	✓	✓	100	20 000	50 000	70 000	270	...	...	1991
Quebec													
Alma	25.9	✓	...	✓	...	100	..	..	..	..	...	...	...
Amos	13.7	✓	...	✓	...	100	3 000	4 000	7 000	220	...	...	1988
Amqui	..	✓	...	✓	...	100	13	8	21	..	...	✓	...
Anjou	36.8	✓	...	✓	...	100	17 536	1 387	18 923	480	...	✓	...
Asbestos	6.5	x	x	x	x	x	x	x	x	x	x	x	x
Ascot	8.2	x	x	x	x	x	x	x	x	x	x	x	x
Aylmer	34.1	...	...	...	...	..	..	..	..	..	...	...	...
Baie-Comeau	26.3	✓	✓	✓	...	100	14 196	12 082	26 278	540	...	...	1993
Beaconsfield	19.4	x	x	x	x	x	x	x	x	x	x	x	x
Beauharnois	6.5	✓	...	✓	...	100	2 357	416	2 773	360	...	...	...
Beauport	70.7	x	x	x	x	x	x	x	x	x	x	x	x
Bécancour	11.2	✓	...	✓	...	100	3 500	-	3 500	310	...	...	...
Bellefleur	11.7	✓	...	✓	...	100	100	20	120	10	...	...	...
Beloeil	19.2	✓	...	✓	...	100	10 703	-	10 703	560	...	...	1993
Bermières	7.2	✓	...	✓	...	100	2 400	2 200	4 600	330	...	...	1992
Blainville	24.1	✓	...	✓	...	100	10 000	-	10 000	410	...	✓	...
Boisbriand	22.5	✓	...	✓	...	100	6 984	-	6 964	310	...	✓	...
Bois-des-Filion	6.7	x	x	x	x	x	x	x	x	x	x	x	x
Boucherville	35.4	✓	...	✓	...	100	17 000	-	17 000	480	...	✓	1994
Brossard	66.9	✓	...	✓	...	90	30 450	-	30 450	460	...	✓	...

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality			Other		Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors															
availability					percent	tonnes							percent	availability			
...	Richmond
✓	✓	...	✓	-	96	42	43	7	6	12	163	...	...	...	✓	Shelburne
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Stellenon
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Sydney
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Sydney Mines	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Truro
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Victoria
✓	✓	✓	✓	62	93	118	-	44	35	9	296	...	...	...	✓	West Hants
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Yarmouth (Municipality)	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	...	Yarmouth (Town)
New Brunswick																	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Bathurst
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Campbellton
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Chatham	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	✓	Dieppe
...	...	...	...	-	...	...	...	...	...	...	...	...	...	✓	...	Edmundston
...	...	...	...	-	...	...	...	...	...	...	...	...	✓	✓	✓	Fairvale
✓	...	✓	...	85	1 444	10	5	-	-	464	1 923	14	✓	✓	✓	Fredericton	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	✓	Grand Falls
...	...	...	...	-	...	...	...	...	...	...	...	...	...	✓	...	Moncton
...	...	...	...	-	...	...	...	...	...	...	...	...	✓	...	✓	New Maryland
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Newcastle	
✓	...	✓	...	100	...	...	...	...	...	...	...	...	...	✓	✓	Oromocio
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Quispamsis	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	✓	✓	Riverview
...	...	...	...	-	...	...	...	...	...	...	...	...	...	✓	✓	Sackville
✓	...	...	✓	100	...	...	...	...	...	...	2 000	9	...	✓	✓	Saint John
Quebec																	
✓	...	✓	...	100	...	...	...	...	...	...	...	...	...	...	...	Alma
✓	...	✓	...	100	400	1 000	400	-	1 500	4 200	7 500	71	...	...	...	Amos
✓	...	...	✓	-	...	...	...	...	...	...	25	66	...	...	...	Amqui
✓	...	✓	...	66	220	220	220	100	60	60	660	5	...	...	...	Anjou
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Asbestos	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Ascot	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Aylmer
✓	...	...	✓	91	71	20	55	-	-	5	9 133	39	...	✓	✓	Bele-Comeau
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Beaconsfield	
✓	...	✓	...	100	...	...	...	...	...	...	273	10	...	...	...	Beaunamois
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Beauport	
✓	...	✓	...	95	206	58	-	32	26	178	500	12	...	✓	...	Bécancour	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Bellevue
✓	...	...	✓	100	960	276	-	200	-	54	2 548	19	...	...	✓	Beloeil
✓	...	✓	...	100	...	...	...	...	...	...	...	...	✓	...	...	Bermières
✓	...	✓	...	98	150	30	30	30	30	15	285	3	✓	✓	✓	Blainville	
✓	✓	...	...	-	-	-	-	31	-	261	292	4	✓	✓	✓	Boisbriand
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Bois-des-Filion	
✓	...	✓	✓	82	...	...	...	...	...	...	22 006	56	...	...	...	Boucherville
✓	...	✓	...	100	...	...	...	...	...	...	...	...	...	...	...	Brossard

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection for disposal	Providers of collection services			Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies						
			Employees	Contractors	Other		Residential	Non- residential	Total		Hazardous waste Curbside	Deposit							
														Municipality	availability	percent	tonnes	availability	year
Buckingham	11.2	✓	...	✓	...	100	6 800	-	6 800	610	...	✓	...						
Candiac	12.0	✓	✓	✓	...	100	..	..	..	..	...	...	...
Cap-de-la-Madeleine	34.3	x	x	x	x	x	x	x	x	x	x	x	x						
Cap-Rouge	14.4	✓	...	✓	...	100	5 200	-	5 200	360	...	...	1993				
Carignan	5.6	✓	...	✓	...	100	..	..	..	..	...	...	...
Chambly	16.5	✓	...	✓	...	100	8 500	-	8 500	520	...	✓	...						
Charlemagne	6.2	✓	...	✓	...	100	2 400	-	2 400	380	...	...	...			
Charlesbourg	72.3	✓	...	✓	...	100	28 719	2 187	30 906	400	...	✓	...						
Cherry	10.8	✓	...	✓	...	100	3 200	1 650	4 850	300	...	...	...			
Châteauguay	43.2	x	x	x	x	x	x	x	x	x	x	x	x						
Chelsea	5.3	✓	...	✓	...	100	4 000	3 000	7 000	750	...	...	...			
Chibougamau	8.8	✓	✓	...	...	100	6 000	-	6 000	680	...	...	...			
Chicoutimi	63.2	✓	...	✓	...	97	17 339	606	17 945	270	...	...	...			
Coaticook	6.8	✓	...	✓	...	100	3 200	1 000	4 200	470	...	...	...			
Contrecoeur	5.8	✓	...	✓	...	100	3 300	-	3 300	570	...	...	...			
Côte-St-Luc	28.3	✓	...	✓	...	100	12 000	1 000	13 000	420	...	✓	...						
Cowansville	12.3	✓	...	✓	...	100	4 000	500	4 500	330	...	✓	...						
Delaon	6.6	✓	...	✓	...	100	2 048	227	2 275	310	...	✓	...						
Deux-Montagnes	14.2	✓	...	✓	...	100	8 500	-	6 500	460	...	✓	...						
Dolbeau	8.2	✓	...	...	✓	..	..	..	..	..	...	...	...
Dolard-des-Ormeaux	46.3	✓	...	✓	...	99	15 188	1 664	16 852	330	...	✓	...						
Donnacoona	6.2	✓	...	✓	...	100	2 124	1 061	3 185	340	...	...	...			
Dorion	6.2	✓	...	✓	...	100	3 072	542	3 614	490	...	...	...			
Dorval	17.0	✓	...	✓	...	82	10 907	-	10 907	640	...	✓	...						
Drummondville	36.6	✓	...	✓	...	100	13 666	-	13 666	370	...	✓	...						
Farnham	6.3	✓	✓	...	...	100	2 199	2 688	4 887	350	...	✓	...				
Fjord-du-Saguenay	..	✓	...	✓	...	100	51 738	49 399	101 137	..	...	...	1992			
Fleurimont	15.0	✓	...	✓	...	100	6 700	-	6 700	450	...	...	...			
Gardeur	15.4	✓	...	✓	...	100	8 480	-	8 480	550	...	✓	...						
Gaspé	18.3	✓	...	✓	...	100	25 000	-	25 000	1 530	...	...	...			
Gatineau	97.6	✓	...	✓	...	100	30 000	15 000	45 000	310	...	✓	1993						
Granby (Canton)	11.0	✓	...	✓	...	100	3 600	-	3 600	330	...	...	...			
Granby (Ville)	44.2	✓	...	✓	...	100	14 000	-	14 000	320	...	✓	...						
Grand-Mère	14.5	✓	...	✓	...	100	5 100	900	6 000	350	...	✓	...						
Grantham	8.0	✓	...	✓	...	100	1 500	-	1 500	190	...	...	...			
Greenfield Park	18.2	✓	...	✓	...	100	7 444	576	8 020	410	...	✓	...						
Hampstead	8.5	✓	...	✓	...	100	3 000	100	3 100	350	...	✓	...						
Hull	64.2	✓	...	✓	...	100	..	..	40 220	..	...	✓	...				
Iberville	9.7	x	x	x	x	x	x	x	x	x	x	x	x						
Joliette	17.9	x	x	x	x	x	x	x	x	x	x	x	x						
Jonquière	58.4	✓	...	✓	...	100	19 000	-	19 000	330	...	...	1991				
Kirkland	17.3	x	x	x	x	x	x	x	x	x	x	x	x						
La Baie	21.2	✓	...	✓	...	100	7 194	1 335	8 529	340	...	✓	...						
La Pêche	6.1	✓	...	✓	...	100	2 759	-	2 758	450	...	...	1993				
La Plaine	11.5	✓	...	✓	...	100	3 600	-	3 600	310	...	✓	...						
La Prairie	16.2	✓	...	✓	...	100	5 100	900	6 000	310	...	✓	...						

Symbols are explained on page ii. Notes are on page 38.

Table 2.2
Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality					Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other														
availability					percent	tonnes							percent	availability			
✓	...	✓	95	...	...	...	...	...	...	...	...	✓	...	...	Buckingham
✓	...	✓	187	...	...	...	...	...	...	507	...	...	...	✓	Candiac
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Cap-de-la-Madeleine
✓	...	✓	100	...	...	...	...	...	...	...	...	✓	...	✓	Cap-Rouge
✓	...	✓	100	...	...	...	...	...	...	...	...	✓	...	✓	Carignan
✓	✓	✓	90	500	200	50	100	35	1 200	2 085	20	...	...	✓	Chambly
...	-	Charlemagne
✓	...	✓	-	1 000	-	-	-	-	-	1 000	3	✓	...	...	Charlesbourg
✓	...	✓	-	420	12	✓	...	...	Charmy
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Châteauguay
✓	✓	100	40	-	40	60	16	-	156	4	...	✓	✓	Chelsea
...	-	Chibougamau
✓	...	✓	100	...	...	...	...	...	...	2 499	13	...	...	✓	Chicoutimi
✓	...	✓	100	...	...	...	...	...	...	170	5	...	✓	✓	Coaticook
✓	✓	10	...	...	...	...	...	...	...	...	...	...	...	Contrecoeur
✓	✓	30	785	...	...	...	135	165	1 065	8	...	...	✓	Côte-St-Luc
...	-	✓	...	Cowansville
✓	...	✓	100	3 475	3 475	3 475	1 345	1 345	2 690	19 280	90	...	...	...	Dalton
✓	✓	-	-	-	-	19	19	188	226	3	...	...	...	Deux-Montagnes
✓	...	✓	-	60	-	2	-	-	-	62	...	✓	...	...	Dolbeau
✓	...	✓	68	...	...	...	...	...	...	2 194	13	...	✓	✓	Dollard-des-Ormeaux
...	-	✓	Dorval
✓	...	✓	✓	...	100	...	...	...	...	...	...	312	9	✓	...	...	Donon
✓	...	✓	82	...	...	...	...	...	...	837	7	...	✓	...	Dorval
✓	...	✓	100	...	...	...	...	...	...	1 777	12	...	✓	✓	Drummondville
...	-	✓	...	Farnham
✓	...	✓	91	2 551	1 913	74	450	489	3 675	9 133	15	✓	✓	✓	Fjord-du-Saguenay
✓	...	✓	-	126	-	10	10	10	20	176	3	...	...	...	Fleurimont
...	-	Gardeur
...	-	Gaspé
✓	...	✓	74	1 474	-	-	543	-	307	2 324	7	✓	✓	✓	Gatineau
✓	...	✓	-	92	2	...	...	...	Granby (Canton)
✓	...	✓	100	953	909	67	162	284	33	2 408	15	...	...	...	Granby (Ville)
✓	...	✓	100	...	...	...	...	...	...	...	...	...	...	...	Grand-Mère
...	-	✓	Grantham
✓	...	✓	100	...	...	...	...	...	...	1 000	12	...	...	✓	Greenfield Park
✓	...	✓	70	...	...	...	...	...	...	400	12	...	...	...	Hampstead
✓	✓	75	...	...	...	...	...	...	...	...	...	✓	...	Hull
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Iberville
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Joliette
✓	...	✓	100	...	...	...	...	...	...	2 300	11	...	...	✓	Jonquière
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Kirkland
✓	✓	100	...	...	...	...	...	...	709	9	...	...	✓	La Baie
...	-	La Pêche
...	-	✓	✓	La Plaine
✓	...	✓	100	105	105	105	45	45	90	600	11	...	...	...	La Prairie

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services			Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies						
		disposal	for Municipality		Other		Residential	Non- residential	Total		Hazardous waste	Curbside		Depot					
			Employees	Contractors											availability	tonnes	per person	availability	year
La Sarre	8.5	✓	...	✓	...	100	6 400	1 600	8 000	760	...	...	...			
L'Acadie	5.2	✓	...	✓	...	100	4 508	-	4 508	860	✓	...	1992						
Lachenaie	16.5	x	x	x	x	x	x	x	x	x	x	x	x						
Lachine	34.8	✓	...	✓	...	95	14 700	-	14 700	420	...	...	...			
Lachute	12.0	✓	...	...	✓	96	5 000	-	5 000	420	...	...	...			
Lac-Mégantic	5.8	✓	...	✓	...	3	60	40	100	10	...	...	1987				
Lac-St Charles	7.7	✓	...	✓	...	100	2 725	-	2 725	350	...	✓	...						
Lafontaine	7.8	x	x	x	x	x	x	x	x	x	x	x	x						
L'Ancienne-Lorette	15.6	✓	...	✓	...	100	7 200	-	7 200	460	...	...	...			
LaSalle	72.9	✓	...	✓	...	100	22 810	279	23 089	310	...	✓	1988						
L'Assomption	6.4	✓	...	...	✓	..	..	..	..	..	...	...	...
Laval	326.6	✓	...	✓	...	100	140 000	-	140 000	430	...	...	1986				
LeMoyne	5.6	...	...	...	...	..	..	..	..	..	...	...	...
Levis	41.7	✓	...	✓	...	100	17 000	4 325	21 325	410	...	...	1991				
L'Île-Perrot	8.5	✓	...	✓	...	100	3 630	300	3 930	430	...	...	1990				
Longueuil	134.1	✓	...	✓	...	100	90 000	30 000	120 000	670	...	✓	...						
Loretteville	14.5	✓	...	✓	...	100	6 300	685	6 985	430	...	...	...			
Lorraine	8.9	✓	...	✓	...	100	4 300	43	4 343	480	...	✓	1993						
Louiseville	8.1	✓	✓	✓	...	100	9	-	9	..	...	...	...		
Magog	14.3	✓	...	✓	...	100	7 700	280	7 980	540	...	...	1993				
Marieville	5.3	✓	...	✓	✓	100	2 200	-	2 200	410	...	...	...			
Mascouche	28.2	✓	...	✓	...	100	10 000	5 000	15 000	350	...	✓	...						
Masson-Angers	6.1	✓	...	✓	...	100	2 153	-	..	350	...	✓	1993						
Matane	12.5	✓	...	✓	...	100	7 000	5 500	12 500	560	...	...	...			
Mercier	8.9	✓	...	✓	...	100	3 000	-	3 000	340	...	✓	1994						
Mirabel	19.5	✓	...	✓	...	100	7 828	288	8 116	400	...	✓	...						
Mistassini	6.9	✓	...	...	✓	..	..	..	..	..	...	...	...
Mont-Joli	6.4	✓	...	✓	...	100	..	..	..	..	...	...	...
Mont-Laurier	8.0	✓	...	✓	...	100	2 300	3 000	5 300	290	...	...	1993				
Montmagny	11.6	✓	...	✓	...	100	10 980	5 120	16 000	840	...	...	...			
Montréal	1 005.2	✓	✓	✓	...	100	512 850	-	512 850	510	✓	...	1989						
Montréal-Nord	84.5	✓	...	✓	...	100	34 000	6 000	40 000	400	...	...	...			
Montréal-Ouest	5.1	✓	...	✓	...	100	..	..	2 098	..	...	✓	...				
Mont-Royal	18.0	✓	...	✓	...	100	5 316	2 693	8 009	300	...	✓	...						
Mont-St-Hilaire	12.8	✓	...	✓	...	87	4 480	300	4 780	350	...	✓	...						
Notre-Dame-de-l'Île-Perrot	5.7	x	x	x	x	x	x	x	x	x	x	x	x						
Notre-Dame-des-Prairies	6.7	✓	...	✓	...	100	2 612	-	2 612	390	...	...	1989				
Ottum Park	6.3	✓	...	✓	...	100	6 500	1 500	8 000	1 040	...	...	...			
Outremont	22.7	✓	...	✓	...	95	7 000	3 600	10 600	310	...	✓	1993						
Pays-d'en-haut	24.4	...	...	...	...	..	..	..	..	..	...	...	...
Pierrefonds	48.1	✓	...	✓	...	100	18 826	8 000	26 826	390	...	✓	...						
Pincourt	10.2	✓	...	✓	✓	100	3 600	-	3 600	370	...	✓	...						
Pintendre	5.3	✓	...	✓	...	100	1 849	326	2 175	350	...	...	...			
Plessisville	7.0	x	x	x	x	x	x	x	x	x	x	x	x						
Pointe-Claire	27.3	✓	...	✓	...	100	12 600	1 225	13 825	460	...	✓	...						
Pointe-du-Lac	5.8	x	x	x	x	x	x	x	x	x	x	x	...						

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality	
	Municipality			availability		percent	Newsprint	Cardboard	Fine paper	Glass	Metal	Other		Total	Composting	Distribution ⁴		Education
	Employees	Contractors	Other															
availability				percent	tonnes							percent	availability					
...	-	La Sarre	
...	-	✓	...	L'Acadie	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Lachenaie	
✓	...	✓	...	46	650	-	-	200	-	-	-	850	5	...	...	...	Lachine
...	-	✓	Lachute	
✓	...	✓	...	-	-	150	150	-	-	-	400	700	92	✓	✓	...	Lac-Mégantic	
✓	...	✓	...	100	-	-	-	-	-	-	-	268	9	✓	✓	✓	Lac-St Charles	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	LaPortaine	
✓	...	✓	...	100	-	...	...	...	...	...	...	...	...	...	...	✓	L'Ancienne-Lorette
✓	...	✓	...	100	-	200	-	670	260	2 791	3 921	15	...	...	✓	✓	LaSalle
✓	✓	35	-	-	-	-	-	-	-	-	...	...	...	...	L'Assomption	
✓	...	✓	...	12	1 300	-	-	500	-	-	-	1 800	1	...	✓	✓	Leval	
...	-	LeMoynes	
✓	...	✓	...	100	821	328	-	263	115	115	1 642	9	✓	...	...	✓	Levis
✓	✓	100	20	19	18	19	19	37	150	4	...	...	...	✓	L'Île-Perrot	
✓	...	✓	...	33	-	...	...	...	...	...	1 800	2	...	...	...	...	Longueuil
✓	...	✓	...	90	300	-	-	39	39	78	456	7	✓	✓	✓	✓	Loretteville	
✓	...	✓	...	-	-	-	-	-	-	-	275	6	✓	...	...	✓	Lorraine
✓	...	✓	...	100	-	-	-	-	-	-	-	-	...	...	✓	✓	Louiseville
✓	...	✓	...	-	-	144	-	4	4	3	155	2	...	...	✓	✓	Magog
✓	...	✓	...	-	Mariville	
...	-	✓	Mascouche	
✓	✓	100	-	-	-	-	-	-	-	-	...	...	✓	...	Masson-Angers	
✓	...	✓	...	80	-	-	-	-	-	-	-	-	...	...	...	✓	Matane
✓	...	✓	...	100	-	-	-	-	-	-	-	285	9	...	...	✓	Mercier
✓	...	✓	✓	100	-	-	-	-	-	-	-	259	3	✓	✓	✓	Mirabel	
...	-	Mistassini	
...	-	Mont-Joli	
✓	✓	80	-	-	-	-	-	-	-	-	...	...	...	✓	Mont-Laurier	
...	-	Montmagny	
✓	...	✓	...	33	12 652	-	-	3 976	904	542	18 074	3	✓	✓	✓	✓	Montréal	
...	-	Montréal-Nord	
✓	...	✓	...	83	244	-	-	79	-	-	323	-	...	...	✓	...	Montréal-Ouest
✓	✓	80	645	-	-	147	85	48	925	15	...	...	✓	✓	Mont-Royal	
✓	...	✓	...	70	-	-	-	-	-	-	-	576	11	✓	...	✓	Mont-St-Hilaire	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Notre-Dame-de-l'Île-Perrot	
✓	...	✓	...	100	-	-	-	-	-	-	-	328	11	...	✓	...	Notre-Dame-des-Prairies	
✓	...	✓	...	100	-	-	-	-	-	-	-	302	4	...	...	✓	Ottum Park
✓	...	✓	...	55	225	135	45	135	135	225	900	11	...	...	✓	✓	Ottumont
...	-	Pays-d'en-haut	
✓	...	✓	...	100	-	-	-	-	-	-	-	2 179	10	...	...	✓	Pierrefonds
✓	...	✓	...	100	140	155	-	27	25	28	375	9	✓	✓	✓	✓	Pincourt	
✓	...	✓	...	-	-	-	-	-	-	-	-	15	1	...	✓	✓	Pintendre	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Plessisville	
...	-	✓	✓	Pointe-Claire	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Pointe-du-Lac	

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection for disposal				Dwellings served percent	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies year		
		disposal	Providers of collection services				Residential	Non- residential	Total		Hazardous waste	Compostion			
			Employees	Contractors	Other									Curbside	Depot
Port-Cartier	7.5	✓	...	✓	...	100	4 752	648	5 400	640	...	...	...
Prévost	6.4	x	x	x	x	x	x	x	x	x	x	x	x		
Québec	171.2	✓	✓	✓	...	100	55 000	41 000	96 000	320	...	...	1982
Repentigny	55.3	✓	...	✓	...	100	18 551	-	18 551	340	...	✓	...		
Rimouski	31.7	✓	...	✓	...	100	3 285	2 190	5 475	100	...	...	...
Rivière-du-Loup	14.1	✓	...	✓	...	100	..	..	..	..	...	...	...
Roberval	11.7	✓	...	...	✓	100	1 820	-	1 820	160	...	...	...
Rock Forest	14.8	✓	...	✓	...	100	8 200	-	6 200	420	...	...	...
Rosemère	11.9	✓	...	✓	...	100	8 000	1 960	9 960	670	...	✓	1993		
Rouyn-Noranda	28.6	✓	...	✓	✓	90	16 200	10 800	27 000	618	...	...	...
Roxboro	5.8	✓	...	✓	...	10	2 000	773	2 773	340	...	...	...
Salaberry-de-Valleyfield	27.7	✓	...	✓	...	100	..	..	..	..	...	...	...
Sept-Îles	25.1	✓	...	✓	...	100	4 500	7 500	12 000	160	...	...	...
Shawinigan	20.3	x	x	x	x	x	x	x	x	x	x	x	x		
Shawinigan-Sud	11.8	✓	...	✓	...	100	3 624	-	3 624	310	...	...	...
Sherbrooke	77.7	✓	✓	...	...	100	25 000	-	25 000	320	...	✓	1991
Sillery	12.8	✓	...	✓	...	100	5 000	1 251	6 251	390	✓	...	...
Sorel	18.9	✓	...	...	✓	100	12 100	1 850	13 750	640	...	✓	...
St-Nicéphore	8.4	✓	...	✓	...	100	4 050	-	4 050	480	...	✓	...		
St-Amable	6.1	x	x	x	x	x	x	x	x	x	x	x	x		
St-Antoine	10.9	✓	...	✓	...	100	5 054	-	5 054	460	...	...	...
St-Athanase	6.6	...	...	...	...	..	..	..	..	..	...	...	...
St-Augustin-de-Desmaures	13.0	✓	...	✓	...	100	4 003	2 181	6 104	310	...	✓	...		
St-Basile-le-Grand	10.5	✓	...	✓	...	100	4 423	233	4 656	420	...	✓	...		
St-Bruno-de-Montarville	24.7	✓	...	✓	...	100	9 621	3 000	12 621	400	...	✓	...		
St-Charles-Borromée	9.9	✓	...	✓	...	100	2 831	-	2 831	290	...	...	...
St-Constant	20.0	✓	...	✓	...	100	7 100	-	7 100	360	...	✓	1992		
Ste-Agathe-des-Monts	5.6	✓	...	✓	...	100	2 800	300	3 100	480	...	✓	...		
Ste-Anne-des-Monts	5.5	✓	...	✓	...	..	24 457	-	24 457	4 450	...	...	...
Ste-Anne-des-Plaines	11.5	✓	...	✓	...	100	5 068	-	5 068	440	...	✓	1994		
Ste-Catherine	10.6	✓	✓	...	...	100	13 500	-	13 500	1 270	...	✓	...
Ste-Foy	72.7	✓	...	✓	...	100	31 442	8 674	41 116	430	...	...	...
Ste-Julie	21.6	✓	...	✓	...	100	5 400	-	5 400	250	...	...	...
Ste-Julienne	6.7	✓	...	✓	...	100	3 000	2 000	5 000	450	...	✓	...		
Ste-Marie	10.5	✓	...	...	✓	..	4 000	555	4 555	360	...	✓	1994
Ste-Marthe-du-Cap-de-la-Madeleine	5.9	✓	...	✓	...	83	2 000	500	2 500	340	...	...	...
Ste-Marthe-sur-le-Lac	8.1	...	...	...	...	..	..	..	..	..	...	...	...
St-Émile	7.1	✓	...	✓	...	100	2 765	800	3 565	390	...	...	...
Ste-Sophie	7.9	✓	...	✓	...	100	1 500	-	1 500	190	...	...	...
Ste-Thérèse	25.7	✓	...	✓	...	100	10 300	-	10 300	400	...	...	1989
St-Étienne-de-Leuzon	7.7	✓	...	...	✓	..	..	..	..	..	...	...	1993
St-Eustache	40.8	✓	✓	✓	...	100	14 310	1 590	15 900	350	...	✓	...		
St-Félicien	9.4	✓	...	✓	✓	88	26 631	2 004	28 635	2 840	...	✓	...		
St-Georges	19.6	✓	...	✓	...	100	..	..	..	..	...	...	...
St-Hubert	76.4	✓	...	✓	...	100	25 324	3 160	28 484	330	...	✓	...		
St-Hyacinthe	40.2	x	x	x	x	x	x	x	x	x	x	x	x		

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services			Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other													
availability				percent	tonnes							percent	availability			
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Port-Cartier
✓	✓			74							3 000	5	✓			Prévost
✓		✓		100							1 470	7	✓			Québec
																Recentigny
																Rimouski
✓			✓	100	60						60	3			✓	Rivière-du-Loup
✓		✓		100							400	6		✓		Roberval
											347	4		✓	✓	Rock Forest
✓			✓	100	500	800	1 400			350	3 050	16				Rosemère
			✓										✓	✓		Rouyn-Noranda
✓			✓								636					Roxboro
																Salaberry-de-Valleyfield
																Sept-Îles
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Shawinigan
✓		✓		100							743	17				Shawinigan-Sud
✓		✓		100	1 375	236	262	500	485	888	3 746	13	✓	✓	✓	Sherbrooke
✓		✓		72				119	52	575	746	13		✓	✓	Sillery
													✓			Sorel
																St-Nicéphore
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	St-Amable
✓	✓			100										✓		St-Antoine
					187						243			✓		St-Athanase
✓		✓		100							421	10	✓		✓	St-Augustin-de-Desmaures
✓		✓		100							400	8	✓			St-Basile-le-Grand
✓			✓	95	375	108		78		434	995	9	✓	✓	✓	St-Bruno-de-Montarville
✓		✓		80							351	11		✓		St-Charles-Bonrome
✓		✓									1 310	16				St-Constant
✓		✓		100				6		53	60	2				Ste-Agathe-des-Monts
																Ste-Anne-des-Monts
✓		✓		100	187			36	14	10	247	5	✓	✓	✓	Ste-Anne-des-Plaines
✓		✓		60									✓		✓	Ste-Catherine
✓		✓		100	1 256	228	1 456	418		1 256	4 614	13	✓			Ste-Foy
✓		✓		100												Ste-Julie
																Ste-Julienne
																Ste-Marie
																Ste-Marthe-du-Cap-de-la-Madeleine
✓	✓										58				✓	Ste-Marthe-sur-le-Lac
													✓		✓	St-Émile
																Ste-Sophie
✓		✓		100	47	47	47	43	13	74	270	3	✓		✓	Ste-Thérèse
✓			✓	100									✓		✓	St-Étienne-de-Lauzon
✓		✓		83							1 452	9	✓	✓	✓	St-Eustache
																St-Fidèle
																St-Georges
✓	✓	✓		87	1 674			610			2 584	9				St-Hubert
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	St-Hyacinthe

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services				Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs	
		disposal	for Municipality			Residential		Non- residential	Total	Hazardous waste		Composting studies	
			Employees	Contractors	Other					Curbside			Depot
St-Jean-Chrysostome	13.4	✓	...	✓	...	100	5 840	-	5 840	430	...	...	...
St-Jean-sur-Richelieu	38.8	✓	...	✓	...	100	16 000	-	16 000	410	...	...	...
St-Jérôme	24.9	✓	...	✓	...	100	10 000	1 000	11 000	400	...	...	...
St-Lambert	21.7	✓	...	✓	...	100	9 600	2 000	11 600	440	...	✓	...
St-Laurent	71.5	✓	...	✓	...	100	24 000	10 290	34 290	340	...	✓	...
St-Lazare	9.6	x	x	x	x	x	x	x	x	x	x	x	x
St-Léonard	72.2	✓	...	✓	...	100	31 300	-	31 300	430	...	✓	...
St-Lin	7.4	x	x	x	x	x	x	x	x	x	x	x	x
St-Louis-de-France	6.9	✓	...	✓	...	97	2 585	-	2 585	380	...	...	...
St-Luc	15.5	✓	...	✓	...	100	5 880	665	6 545	380	...	...	...
St-Nicolas	8.0	✓	...	✓	...	100	3 900	689	4 589	490	...	...	1993
St-Raphaël-de-Fle-Bizard	11.2	✓	...	✓	...	100	5 000	500	5 500	450	...	✓	...
St-Rédempteur	6.2	✓	...	✓	...	100	2 439	234	2 673	390	...	...	...
St-Rémi	5.9	✓	...	✓	...	100	4 500	-	4 500	760	...	...	...
St-Romuald	10.4	✓	...	✓	...	100	4 620	1 980	6 600	450	...	...	...
St-Timothée	9.3	✓	...	✓	...	100	3 798	117	3 915	460	...	...	...
Terrebonne	43.3	x	x	x	x	x	x	x	x	x	x	x	x
Thetford-Mines	17.3	✓	...	✓	...	100	6 006	2 574	8 580	350	...	✓	1981
Tracy	13.3	✓	...	...	✓	100	6 600	900	7 500	500	...	✓	...
Trois-Rivières	50.3	✓	...	✓	...	100	17 000	8 700	25 700	340	...	✓	1990
Trois-Rivières-Ouest	20.4	✓	...	✓	...	100	8 000	1 000	9 000	390	...	...	...
Tuque	10.2	✓	...	✓	...	100	4 600	2 500	7 300	470	...	✓	...
Val-Bélair	17.6	✓	...	✓	...	100	8 400	300	8 700	480	...	✓	...
Val-des-Monts	5.8	✓	...	✓	...	100	1 900	100	2 000	330	...	...	1992
Val-d'Or	23.7	✓	...	✓	...	100	...	...	...	...	...	✓	1991
Val-St-François	32.6	✓	...	✓	...	100	12 460	7 280	19 740	380	...	...	...
Vanier	11.1	✓	...	✓	...	100	8 500	630	9 130	770	...	...	...
Varannes	15.5	✓	...	✓	...	100	8 200	...	8 200	400	...	...	...
Vaudreuil	11.8	✓	...	✓	...	99	5 471	475	5 946	460	...	...	...
Verdun	60.6	✓	...	✓	...	100	25 000	2 500	27 500	410	✓	...	...
Victoriaville	22.1	✓	...	✓	...	100	22 000	4 000	26 000	1 000	...	...	...
Westmount	20.0	✓	...	✓	...	100	4 000	3 100	7 100	200	...	✓	...
Ontario													
Ajax	81.3	✓	✓	✓	...	100	14 481	3 833	18 314	240	...	✓	...
Ameliasburgh	5.5	✓	✓	...	...	100	1 082	-	1 082	200	...	...	...
Amherstburg	11.0	✓	...	✓	...	100	3 174	122	3 296	290	...	✓	1982
Ancaster	18.9	x	x	x	x	x	x	x	x	x	x	x	x
Anderdon	6.8	✓	...	✓	...	100	1 724	75	1 799	250	...	✓	...
Amprior	7.2	✓	...	✓	...	100	11	7	18	...	...	...	...
Augusta	7.5	...	...	...	...	...	...	...	...	...	...	...	...
Aurora	32.3	✓	...	✓	...	100	9 675	-	9 675	300	...	✓	...
Aylmer	7.7	✓	...	✓	...	100	2 315	1 000	3 315	300	...	...	...
Barrie	67.7	✓	...	✓	...	80	19 379	-	19 379	290	...	...	...
Belleville	39.2	✓	...	✓	...	100	10 000	-	10 000	260	...	✓	1993
Blandford-Blenheim	9.1	✓	...	✓	...	100	1 376	-	1 376	150	...	...	...

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
Recycling service	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	availability			percent	tonnes							percent	availability			
...	-	St-Jean-Christophe
...	-	✓	✓	St-Jean-sur-Richelieu
✓	...	✓	...	-	200	100	-	50	50	20	420	4	...	...	...	St-Jérôme
✓	...	✓	...	75	225	225	225	135	45	45	900	9	...	...	...	St-Lambert
✓	...	✓	...	50	1 706	-	-	228	137	204	2 275	9	...	...	✓	St-Laurel
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	St-Lazare
✓	...	✓	...	26	-	-	-	188	82	82	1 174	4	...	...	✓	St-Leonard
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	St-Lin
...	-	St-Louis-de-France
✓	...	✓	...	100	501	-	-	38	38	38	615	9	...	✓	✓	St-Luc
...	-	✓	✓	✓	St-Nicolas
✓	...	✓	...	100	...	...	...	...	...	...	455	8	...	✓	✓	St-Raphaël-de-l'Île-Bizard
...	100	...	...	...	...	...	...	134	5	✓	...	✓	St-Rédempteur
✓	...	✓	...	100	...	...	...	...	...	...	...	...	...	...	...	St-Rémi
✓	...	✓	...	65	...	...	...	...	...	...	226	5	✓	...	...	St-Romuald
✓	✓	100	...	...	...	...	...	...	352	8	...	...	...	St-Timothée
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Terrebonne
✓	...	✓	...	100	101	235	58	26	-	2	422	7	...	...	...	Thetford-Mines
...	-	✓	Tracy
...	-	✓	Trois-Rivières
...	-	Trois-Rivières-Ouest
...	-	Tuque
...	-	✓	✓	...	Val-Bélair
...	-	Val-des-Monts
...	-	Val-d'Or
✓	...	✓	...	10	...	...	...	...	...	...	...	...	...	...	...	Val-St-François
...	-	Vanier
✓	✓	100	-	-	-	48	-	639	687	10	...	...	...	Varennes
✓	...	✓	...	99	67	67	66	22	22	44	354	6	...	...	...	Vaudreuil
✓	...	✓	...	100	...	...	...	...	...	...	325	1	...	...	✓	Verdun
✓	...	✓	...	100	1 200	800	300	1 000	400	1 575	5 275	19	...	...	✓	Victoriaville
✓	✓	100	350	350	350	175	105	470	1 800	31	...	✓	✓	Westmount
Ontario																
✓	✓	✓	...	88	...	...	...	...	...	...	2 930	17	✓	...	✓	Ajax
✓	✓	100	131	...	...	...	...	...	354	24	...	✓	✓	Ameliasburg
✓	✓	100	340	...	30	60	...	...	500	14	✓	...	✓	Amherstburg
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Ancaster
✓	✓	100	6	...	...	...	...	...	30	2	✓	✓	...	Anderton
✓	...	✓	...	80	9	...	...	...	...	...	51	82	...	✓	✓	Amprior
✓	✓	-	Augusta
✓	...	✓	...	100	1 224	...	...	...	...	...	1 884	16	✓	✓	...	Aurora
...	-	✓	✓	Aylmer
✓	...	✓	...	100	2 500	...	...	...	...	...	4 300	18	✓	✓	✓	Barrie
✓	✓	75	...	...	...	...	...	...	...	...	...	✓	✓	Belleville
✓	...	✓	...	100	136	...	...	...	...	...	261	16	...	✓	...	Blandford-Blenheim

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services				Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies year
		for disposal	Municipality			Residential		Non- residential	Total	Hazardous waste Curbside		Depot		
			Employees	Contractors	Other									
			availability	percent	tonnes								availability		year
Bosquet	6.5	✓	✓	...	...	100	1 645	-	1 645	250	...	...	...
Bracebridge	12.7	✓	...	✓	...	100	2 451	-	2 451	190	...	...	...
Bradford West Gwillimbury	19.1	✓	...	✓	...	72	4 210	-	4 210	220	...	...	...
Brampton	252.7	✓	...	✓	...	..	76 688	-	..	300	...	✓	1993
Brantford (City)	74.6	✓	...	✓	...	100	23 000	-	23 000	310	...	✓	...	
Brantford (Township)	5.9	✓	...	✓	...	100	1 685	9 790	11 475	280	...	...	1993
Brock	11.8	✓	...	✓	...	43	3 778	-	3 778	320	...	...	...
Brockville	22.6	✓	...	✓	...	90	4 780	-	4 780	210	...	✓	...	
Burford	5.2	✓	...	✓	...	100	231	77	308	40	...	...	...
Burlington	115.7	✓	...	✓	...	86	28 633	3 181	31 814	250	...	✓	...	
Caledon	37.7	✓	...	✓	...	100	22 000	-	22 000	580	...	✓	...	
Cambridge	6.4	...	...	...	...	..	..	..	..	..	...	...	...
Cambridge	116.0	✓	...	✓	...	100	22 542	-	22 542	190	...	✓	...	
Caradoc	7.6	...	...	...	...	..	..	..	..	..	...	...	...
Carleton Place	7.8	✓	...	✓	...	100	2 166	-	2 166	280	...	...	...
Cavan	5.8	✓	...	...	✓	..	..	..	..	..	...	...	1990
Charlottenburgh	8.0	x	x	x	x	x	x	x	x	x	x	x	x	
Chatham (City)	53.0	✓	...	✓	...	100	15 115	1 679	16 794	290	...	✓	...	
Chatham (Township)	8.1	...	...	...	...	..	..	..	..	..	...	...	...
Clarence	9.7	✓	✓	...	...	100	3 218	1 000	4 218	330	...	...	...
Cobourg	15.6	✓	...	✓	✓	66	2 700	400	3 100	170	...	✓	1990	
Colchester South	6.5	✓	...	✓	...	100	1 668	375	2 043	260	...	✓	...	
Collingwood	14.6	✓	...	✓	...	..	3 712	..	..	250	...	...	...
Cornwall (City)	49.1	✓	...	✓	...	100	15 394	39 290	54 684	310	...	✓	1989	
Cornwall (Township)	6.7	✓	...	✓	✓	50	2 966	1 652	4 618	440	...	...	...
Cumberland	42.5	✓	...	✓	...	100	13 683	-	13 683	320	...	...	...
Delhi	14.0	✓	...	✓	...	100	5 000	-	5 000	360	...	✓	...	
Dryden	7.0	✓	...	✓	...	100	3 000	1 000	4 000	430	...	...	1991
Dundas	18.8	✓	...	...	✓	100	8 120	500	6 620	330	...	✓	...
Dunnville	10.7	...	...	...	...	..	..	..	..	..	...	...	...
East Gwillimbury	20.2	✓	...	✓	...	100	5 121	-	5 121	250	...	✓	...	
East York	101.8	✓	✓	✓	...	100	33 767	-	33 767	330	...	✓	1989	
East Zorra-Tavistock	9.1	✓	...	✓	...	100	1 200	300	1 500	130	...	...	...
Elizabethtown	7.8	...	...	...	...	..	..	..	..	..	...	✓	...
Elliot Lake	14.2	✓	✓	...	...	100	6 000	2 000	8 000	420	...	...	...
Emily	6.7	...	...	...	...	..	..	..	..	..	...	✓	...
Eramosa	5.2	✓	...	✓	...	100	2 430	1 020	3 450	460	...	✓	1992	
Erin	6.7	✓	...	✓	...	18	1 030	-	1 030	150	...	...	...
Ernestown	12.9	✓	...	✓	...	100	4 519	1 473	5 992	350	...	✓	1993	
Espanola	5.5	✓	...	✓	...	100	2 300	950	3 250	410	...	...	...
Essa	15.3	✓	...	✓	...	100	2 853	1 103	3 956	190	...	✓	...	
Essex	8.3	✓	...	✓	...	100	2 123	139	2 262	260	...	...	...
Etobicoke	307.2	✓	✓	✓	...	100	98 000	8 000	106 000	320	...	✓	...	
Fenelon	6.1	✓	✓	...	...	80	1 360	340	1 700	220	...	✓	...
Fergus	7.0	x	x	x	x	x	x	x	x	x	x	x	x	
Flamborough	25.5	✓	...	✓	...	100	7 777	864	8 641	310	...	✓	...	

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality					Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other														
availability					percent	tonnes							percent	availability			
✓	...	✓	✓	100	..	..	..	..	..	..	..	..	...	✓	✓	Brantford
✓	...	✓	...	100	..	..	..	..	..	..	1 015	29	...	✓	✓	Bracebridge
✓	...	...	✓	100	..	..	..	..	..	..	..	..	...	✓	✓	Bradford-West Gwillimbury
✓	...	✓	...	100	7 945	..	..	..	..	..	11 734	13	✓	✓	✓	Brampton
✓	✓	...	...	80	2 008	..	..	..	..	..	3 786	14	✓	✓	✓	Brantford (City)
✓	✓	...	...	100	104	..	..	..	..	..	104	6	...	✓	✓	Brantford (Township)
✓	...	...	✓	43	..	..	..	..	..	..	..	..	...	✓	✓	Brock
✓	...	✓	...	95	442	..	..	..	..	..	899	16	✓	✓	✓	Brockville
✓	...	✓	...	100	..	..	..	..	..	..	..	..	...	...	✓	Burlford
✓	...	✓	...	98	6 669	..	..	..	..	..	10 199	26	✓	✓	✓	Burlington
✓	...	✓	...	100	840	..	..	..	..	..	1 602	7	...	✓	✓	Caledon
...	...	...	...	..	...	..	..	..	..	..	...	...	...	...	...	Cambridge
✓	...	...	✓	100	2 000	..	..	..	..	..	4 000	15	...	✓	...	Cambridge
✓	...	✓	...	..	..	..	..	..	..	..	..	..	...	✓	✓	Canadoc
✓	...	...	✓	100	..	..	..	..	..	..	224	9	✓	✓	...	Carleton Place
✓	...	...	✓	100	..	..	..	..	..	..	328	..	...	✓	✓	Cavan
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Charltonburgh	
✓	✓	✓	...	..	458	..	..	..	..	..	2 689	15	✓	✓	...	Chatham (City)
✓	...	✓	...	..	..	..	..	..	..	..	..	..	...	✓	...	Chatham (Township)
✓	...	✓	...	100	..	..	..	..	..	..	30	1	...	✓	...	Clarence
✓	...	...	✓	100	..	..	..	..	..	..	2 800	51	✓	✓	✓	Cobourg
✓	...	...	✓	100	..	..	..	..	..	..	111	8	...	✓	...	Colchester South
✓	✓	✓	...	100	399	..	..	..	..	..	783	17	✓	✓	✓	Collingwood
✓	...	✓	...	100	1 008	..	..	..	..	..	2 404	14	✓	✓	✓	Comwall (City)
✓	✓	...	✓	..	..	..	..	..	..	..	227	7	...	✓	✓	Comwall (Township)
✓	...	✓	...	100	1 300	..	..	..	..	..	2 111	13	✓	✓	✓	Cumberland
✓	...	✓	...	100	..	..	..	..	..	..	420	8	✓	✓	✓	Delhi
✓	...	...	✓	85	85	..	5	70	30	..	210	7	✓	✓	✓	Dryden
✓	...	...	✓	90	..	..	..	..	..	..	967	14	✓	✓	...	Dundas
...	...	...	...	..	..	..	..	..	..	..	..	..	...	...	...	Dunnville
✓	...	✓	...	95	580	..	..	..	..	..	947	16	✓	✓	✓	East Gwillimbury
✓	✓	✓	✓	51	..	..	..	..	..	..	4 143	11	✓	✓	✓	East York
✓	...	✓	...	100	170	..	..	..	..	..	327	21	...	✓	✓	East Zorra-Tavistock
✓	✓	✓	...	25	63	..	..	..	..	..	124	..	...	✓	✓	Elizabethtown
...	...	...	...	..	..	..	..	..	..	..	..	..	...	✓	✓	Elliott Lake
✓	...	✓	...	..	40	..	..	..	..	..	163	..	...	✓	...	Emily
...	...	...	...	..	..	..	..	..	..	..	..	..	...	...	✓	Eramosa
✓	...	...	✓	20	..	..	..	..	..	..	..	..	...	✓	...	Erin
✓	...	✓	...	100	..	..	..	..	..	..	23	1	✓	✓	✓	Ernstown
...	...	...	...	..	..	..	..	..	..	..	..	..	...	✓	✓	Espanola
✓	...	✓	...	100	250	..	..	135	102	..	494	15	...	✓	✓	Essa
✓	...	...	✓	100	364	..	..	..	..	..	1 368	39	...	✓	✓	Essex
✓	✓	...	...	80	..	..	..	..	..	..	56 000	36	✓	✓	✓	Etobicoke
✓	✓	...	...	..	..	..	..	..	..	..	..	..	...	✓	✓	Fenelon
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Fergus	
✓	...	...	✓	100	843	..	..	..	..	..	1 341	15	...	✓	✓	Flemingdon

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection Providers of collection services for Municipality				Dwellings served percent	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies year										
		disposal	Municipality				Residential	Non- residential	Total		Curbside	Depot											
			Employees	Contractors	Other																		
			availability				tonnes				availability												
Fort Erie	22.7	✓	...	✓	...	92	17 710	8 000	25 710	780	...	✓	1982										
Fort Frances	9.0	✓	...	✓	...	100	3 000	2 000	5 000	330	...	...	1993								
Gananoque	5.5	✓	...	✓	...	100	..	..	957	..	...	...	1992					
Glenbrook	8.4	✓	...	✓	...	100	2 900	44	2 944	350	...	✓	...										
Gloucester	106.3	✓	...	✓	✓	100	28 200	-	28 200	270	...	...	...							
Goderich	7.6	✓	...	✓	...	83	1 200	2 300	3 500	160	...	...	...							
Gosfield South	9.1	✓	...	✓	...	100	2 337	-	2 337	260	...	✓	1993										
Goulbourn	16.9	✓	...	✓	...	100	2 219	..	..	130	...	...	...							
Gravenhurst	10.3	✓	...	✓	...	100	10 000	-	10 000	970	...	...	...							
Grimsby	16.1	✓	...	✓	...	100	4 710	-	4 710	290	...	✓	...										
Guelph	77.6	✓	✓	...	...	71	21 243	-	21 243	270	...	✓	1990								
Haldimand	18.2	✓	...	✓	...	91	25 000	40 000	65 000	1 380	...	✓	1990										
Halton Hills	32.9	✓	✓	...	...	72	7 468	981	8 449	230	...	...	...							
Hamilton (City)	273.7	✓	✓	...	...	100	103 202	-	103 202	380	...	✓	...								
Hamilton (Township)	9.9	✓	...	✓	...	68	1 830	-	1 830	180	...	✓	1993										
Hanover	6.9	✓	...	✓	...	74	1 250	-	1 250	180	...	...	...							
Harwich	7.9	x	x	x	x	x	x	x	x	x	x	x	x										
Hawkesbury	10.4	✓	...	✓	...	100	..	..	..	..	...	...	...			
Heerst	6.0	✓	...	✓	...	100	3 500	350	3 850	580	...	...	1993								
Huntsville	15.5	✓	...	✓	...	83	7 000	8 000	15 000	450	...	...	...							
Ingersoll	11.7	✓	...	✓	...	100	..	..	..	..	...	...	...			
Innisfil	23.4	✓	...	✓	...	100	7 589	843	8 432	320	...	✓	...										
Inquois Falls	5.9	✓	...	✓	...	100	12	4	16	-	...	...	1992								
Kanata	39.0	✓	...	✓	...	93	11 009	-	11 009	280	...	✓	1992										
Kapuskasing	10.2	✓	✓	...	...	100	3 000	2 000	5 000	290	...	...	...							
Kenora	10.5	✓	✓	...	...	100	6 000	4 000	10 000	570	...	✓	...								
Kincardine	6.9	✓	✓	...	...	100	1 800	-	1 800	260	...	...	...							
King	19.9	✓	...	✓	...	100	3 725	-	3 725	190	...	✓	...										
Kingston (City)	58.1	✓	✓	...	✓	100	14 813	11 707	26 520	280	...	✓	1991										
Kingston (Township)	40.8	✓	✓	...	...	100	7 700	-	7 700	190	...	✓	1992								
Kingsville	7.0	✓	✓	...	...	95	1 874	237	2 111	270	...	✓	...								
Kirkland Lake	10.5	✓	...	✓	...	98	5 000	4 000	9 000	470	...	...	...							
Kitchener	210.4	✓	...	✓	...	64	38 644	-	38 644	180	...	...	...							
La Salle	20.5	✓	...	✓	...	100	6 002	19	6 021	290	...	✓	1993										
Leamington	17.5	✓	✓	...	✓	100	3 336	464	3 800	190	...	...	...							
Lincoln	15.0	✓	...	✓	...	100	4 418	313	4 731	300	...	✓	1994										
Lindsay	17.7	✓	...	✓	...	100	6 450	29 210	35 660	360	...	✓	1992										
Listowel	6.6	✓	...	✓	...	100	2 800	2 000	4 800	420	...	✓	...										
Lobo	6.9	✓	...	✓	...	100	1 602	35	1 637	230	...	...	1993								
London (City)	377.1	✓	...	✓	...	100	120 000	40 000	160 000	320	...	✓	...										
London (Township)	7.3	✓	...	✓	...	100	1 550	-	1 550	210	...	...	...							
Maidstone	12.2	✓	...	✓	...	100	2 840	453	3 293	230	...	✓	1993										
Malahide	7.4	✓	...	✓	...	100	1 427	29	1 456	180	...	...	...							
Manvers	5.5	✓	...	✓	...	20	..	..	..	..	...	✓	...					
Marathon	5.1	✓	✓	...	...	100	790	1 132	1 922	150	...	...	...							
Manitosa	7.3	x	x	x	x	x	x	x	x	x	x	x	x										

Symbols are explained on page ii. Notes are on page 36.

Table 2.2
Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services			Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other													
availability				percent	tonnes							percent	availability			
✓	...	✓	...	95	878	..	..	..	..	..	1 394	7	✓	...	✓	Fort Erie
✓	✓	100	..	..	..	..	..	..	340	10	...	✓	✓	Fort Frances
✓	✓	-	137	..	..	..	..	..	296	..	...	✓	...	Gananoque
✓	✓	100	195	..	..	..	..	..	394	12	...	✓	✓	Glanbrook
✓	...	✓	...	95	2 564	..	..	..	..	..	4 087	13	✓	✓	✓	Gloucester
✓	✓	100	..	..	..	..	..	..	600	33	✓	✓	✓	Goderich
✓	✓	100	2	..	..	..	..	..	539	19	✓	✓	...	Gosfield South
✓	...	✓	...	100	477	..	..	..	..	..	837	27	...	✓	✓	Goulbourn
✓	✓	100	..	..	..	..	..	..	800	7	...	✓	...	Gravenhurst
✓	...	✓	...	100	..	..	..	..	..	..	1 118	19	...	✓	✓	Grimsby
✓	...	✓	...	100	3 967	..	..	..	..	..	11 416	35	✓	✓	✓	Guelph
✓	...	✓	...	100	..	..	..	..	..	..	5 500	18	✓	✓	✓	Haldimand
✓	✓	83	..	..	..	..	..	..	2 058	22	✓	✓	...	Halton Hills
✓	✓	100	8 393	..	..	..	..	..	13 427	12	...	✓	✓	Hamilton (City)
✓	✓	✓	...	70	..	..	..	..	..	..	2 000	52	✓	✓	✓	Hamilton (Township)
✓	...	✓	...	100	..	..	..	..	..	..	..	..	✓	✓	✓	Hanover
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Harwich
✓	...	✓	...	100	..	..	..	..	..	..	657	..	✓	✓	...	Hawkesbury
...	✓	✓	Hearst
✓	...	✓	...	90	838	..	..	..	..	..	6 578	48	...	✓	✓	Huntsville
✓	...	✓	...	-	250	..	..	..	..	..	525	100	...	✓	✓	Ingersoll
✓	...	✓	...	100	60	..	..	..	..	..	516	6	...	✓	✓	Innisfil
...	-	✓	...	Inquis Falls
✓	...	✓	...	95	1 593	..	..	..	..	..	2 527	19	✓	✓	✓	Kanata
...	-	✓	...	Kapuskasing
✓	...	✓	...	100	80	..	..	..	31	..	185	3	...	✓	✓	Kenora
✓	✓	100	260	..	..	..	..	..	570	24	✓	✓	...	Kincardine
✓	...	✓	...	100	681	..	..	..	..	..	1 230	25	...	✓	✓	King
✓	✓	100	1 515	..	..	..	..	..	2 833	16	✓	...	✓	Kingston (City)
✓	✓	100	..	..	..	..	..	..	2 402	24	✓	...	✓	Kingston (Township)
✓	✓	100	..	..	..	..	..	..	511	21	✓	✓	✓	Kingsville
...	-	✓	...	Kirkland Lake
✓	...	✓	...	100	..	..	..	..	..	..	7 303	16	✓	✓	✓	Kitchener
✓	✓	100	..	..	..	..	..	..	153	2	✓	✓	✓	La Salle
✓	✓	100	1 440	..	..	..	..	..	4 462	57	✓	...	...	Leamington
✓	✓	100	..	..	..	..	..	..	976	18	...	✓	✓	Lincoln
✓	...	✓	✓	100	550	..	..	..	..	..	1 493	19	✓	✓	✓	Lindsay
✓	...	✓	✓	100	1	..	..	..	..	..	203	7	✓	✓	✓	Listowel
✓	...	✓	...	100	143	..	..	70	..	..	270	14	✓	✓	✓	Lobo
✓	...	✓	...	60	8 078	..	..	..	..	..	12 728	10	...	✓	✓	London (City)
✓	...	✓	...	100	..	..	..	..	..	..	..	-	...	✓	...	London (Township)
✓	...	✓	...	100	10	..	..	..	..	..	731	20	✓	...	✓	Maldstone
...	-	250	..	..	..	..	..	525	27	...	...	...	Malahide
✓	...	✓	...	60	..	..	..	..	..	..	..	..	...	✓	✓	Manvers
✓	✓	-	24	..	..	..	..	..	34	4	...	✓	...	Marathon
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Mariposa

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services				Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies	
		disposal	Municipality			Residential		Non- residential	Total	Hazardous waste Curbside		Depot			
			Employees	Contractors	Other								availability		year
Markham	168.9	✓	...	✓	...	100	39 106	-	39 106	230	...	✓	1982		
McNab	5.9	✓	...	✓	...	100	1 300	130	1 430	220	...	...	...
Medonte	6.3	x	x	x	x	x	x	x	x	x	x	x	x		
Merssa	10.5	✓	...	✓	...	100	1 730	655	2 385	180	...	✓	...		
Midland	15.0	✓	...	✓	...	100	3 215	3 407	6 622	210	...	✓	...		
Milton	28.7	✓	...	✓	...	67	5 100	-	5 100	180	...	✓	...		
Mississauga	499.5	✓	...	✓	...	100	94 444	-	94 444	180	...	✓	1994		
Mono	6.2	✓	...	...	✓	..	..	..	..	..	...	✓	...
Moore	13.2	✓	...	✓	...	100	10 000	..	..	760	...	✓	...
Murray	7.2	✓	...	✓	...	100	1 773	-	1 773	250	...	✓	...		
Muskoka Lakes	5.7	✓	...	✓	...	76	3 840	960	4 800	670	...	...	...
Nanticoke	20.1	✓	✓	...	...	100	4 620	1 000	5 620	230	...	✓	...
Napanee	5.4	✓	...	✓	...	100	1 017	-	1 017	190	...	✓	...		
Nepean	112.5	✓	...	✓	...	92	20 000	12 636	32 636	180	...	✓	1992		
New Liskeard	5.5	✓	...	✓	...	100	5 445	6 171	11 615	990	...	...	...
New Tecumseth	21.8	✓	...	✓	...	70	4 255	-	4 255	190	...	✓	...		
Newcastle	52.9	x	x	x	x	x	x	x	x	x	x	x	x		
Newmarket	49.9	✓	...	✓	...	100	16 000	..	..	320	...	...	...
Niagara Falls	65.8	✓	✓	✓	...	100	22 766	-	22 766	350	...	✓	...		
Niagara-on-the-Lake	11.3	✓	...	✓	...	98	3 237	995	4 232	290	...	✓	...		
Nickel Centre	12.7	✓	✓	...	✓	97	5 000	-	5 000	390	...	✓	...		
Norfolk	10.4	...	...	...	...	..	..	..	..	..	...	...	...
North Bay	57.1	✓	...	✓	...	100	21 000	22 000	43 000	370	...	✓	1989		
North Dorchester	9.8	✓	✓	...	...	100	1 824	18	1 842	190	...	...	...
North Dumfries	8.5	✓	...	✓	...	100	1 270	363	1 633	150	...	✓	1993		
North York	557.4	✓	✓	✓	...	98	179 000	-	179 000	320	...	✓	1992		
Norwich	12.7	✓	...	✓	...	100	2 246	250	2 496	180	...	...	...
Nottawasaga	5.7	...	...	...	...	..	..	..	..	..	...	...	...
Oakville	102.4	✓	✓	...	...	60	23 824	1 702	25 526	230	...	✓	...
Onaping Falls	5.6	✓	✓	...	...	100	2 723	454	3 177	490	...	...	...
Orangeville	19.2	x	x	x	x	x	x	x	x	x	x	x	x		
Orillia (City)	28.0	✓	...	✓	...	100	6 000	-	6 000	210	...	✓	...		
Orillia (Township)	8.8	✓	...	✓	...	100	2 136	209	2 345	240	...	...	...
Oro	9.6	✓	...	✓	...	100	3 125	-	3 444	320	...	...	...
Osgoode	14.6	✓	...	✓	...	3	5 903	-	5 903	400	...	✓	...		
Oshawa	138.2	✓	✓	✓	...	83	33 400	1 900	35 300	240	...	✓	...		
Otanabee	5.5	✓	...	✓	...	100	1 328	-	1 328	240	...	✓	...		
Ottawa	328.2	✓	...	✓	...	100	98 844	-	98 844	300	...	✓	1993		
Owen Sound	22.2	✓	✓	...	...	85	3 850	680	4 530	170	...	...	...
Oxford (On Rideau)	6.0	...	...	...	...	..	..	..	..	..	...	...	1992
Paris	7.6	✓	...	✓	...	92	2 366	-	2 366	300	...	...	...
Parry Sound	6.4	✓	...	✓	...	100	1 840	160	2 000	290	...	✓	...		
Pelham	11.6	✓	...	✓	...	100	3 114	164	3 278	270	...	✓	...		
Pembroke	15.0	✓	...	✓	...	100	3 963	6 370	10 333	260	...	✓	...		
Penetanguishene	7.2	✓	✓	✓	...	100	1 556	155	1 711	220	...	✓	...		
Perth	5.9	✓	...	✓	...	100	2 000	-	2 000	340	...	✓	1993		

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality			Other		Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors															
availability					percent	tonnes							percent	availability			
✓	...	✓	...	100	5 000	..	..	..	..	..	9 317	19	✓	...	✓	Markham
✓	...	✓	...	100	90	..	..	..	..	..	183	12	...	✓	...	McNab
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Medonte	
✓	✓	100	..	..	..	..	..	..	239	12	...	✓	✓	Mersea	
✓	✓	100	1 199	..	..	..	..	..	2 668	45	✓	✓	✓	Midland	
✓	✓	100	..	..	..	..	..	..	1 250	20	...	✓	✓	Milton	
✓	...	✓	...	100	12 350	..	..	..	..	..	24 181	20	✓	✓	✓	Mississauga
✓	...	✓	...	100	240	..	..	..	..	..	559	..	...	✓	✓	Mono
✓	...	✓	...	100	278	..	..	..	..	..	805	6	...	✓	...	Moore
✓	...	✓	...	100	15	..	..	..	..	..	32	2	...	✓	✓	Murray
✓	...	✓	350	..	..	..	..	..	1 240	24	...	✓	✓	Muskoka Lakes	
✓	✓	60	10	..	..	..	..	..	78	2	✓	✓	✓	Nanticoke	
✓	✓	100	166	..	..	..	..	..	353	26	...	✓	...	Napanee	
✓	✓	✓	...	92	3 271	..	..	..	..	..	4 835	20	✓	✓	✓	Nepean
...	✓	✓	...	New Liskeard	
✓	✓	100	..	..	..	..	..	..	..	..	✓	✓	✓	New Tecumseh	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Newcastle	
✓	...	✓	...	92	1 369	..	..	..	..	..	2 079	11	✓	✓	✓	Newmarket
✓	✓	✓	...	95	1 900	..	..	..	..	..	3 700	14	✓	✓	✓	Niagara Falls
✓	...	✓	...	98	..	..	..	..	..	..	805	20	...	✓	✓	Niagara-on-the-Lake
✓	✓	100	..	..	..	..	..	..	..	..	...	✓	...	Nickel Centre	
...	Norfolk	
✓	...	✓	...	75	1 200	..	..	..	..	..	2 710	11	✓	✓	✓	North Bay
✓	✓	100	260	3	..	..	..	..	497	21	✓	✓	✓	North Dorchester	
✓	...	✓	...	100	..	..	..	..	..	..	332	21	...	✓	...	North Dumfries
✓	✓	84	13 527	..	..	..	..	..	20 659	10	✓	✓	✓	North York	
✓	...	✓	...	100	182	..	..	..	..	..	349	13	...	✓	✓	Norwich
...	Nottawasaga	
✓	✓	100	..	..	..	..	..	..	9 500	29	✓	✓	✓	Oakville	
✓	✓	100	..	..	..	..	..	..	..	..	...	✓	...	Onaping Falls	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Orangeville	
✓	...	✓	...	100	..	..	..	..	..	..	1 655	22	✓	✓	✓	Orillia (City)
✓	...	✓	...	100	298	..	..	..	..	..	589	22	...	✓	...	Orillia (Township)
✓	...	✓	...	100	..	..	..	..	..	..	..	..	...	✓	...	Oro
✓	...	✓	...	100	349	..	..	..	..	..	683	10	...	✓	...	Osgoode
✓	...	✓	...	67	3 530	..	..	..	..	..	5 900	15	✓	✓	✓	Oshawa
✓	✓	325	20	...	...	...	Ottawabee	
✓	...	✓	...	81	8 561	..	..	..	..	..	13 038	12	✓	✓	✓	Ottawa
✓	...	✓	...	78	642	..	..	..	..	..	1 124	23	✓	✓	✓	Owen Sound
✓	✓	✓	00	..	..	..	..	..	167	..	...	✓	✓	Oxford (On Rideau)	
✓	...	✓	...	00	..	..	..	..	..	..	805	20	✓	✓	✓	Paris
✓	...	✓	...	100	71	500	00	..	..	..	799	30	✓	...	✓	Parry Sound
✓	...	✓	...	100	..	..	..	..	..	..	743	19	✓	✓	...	Pelham
✓	✓	100	290	6	0	..	..	..	583	13	✓	✓	✓	Pembroke	
✓	✓	100	..	..	..	..	..	..	..	..	✓	...	...	Penetanguishene	
✓	✓	100	..	..	..	..	..	..	..	..	...	✓	✓	Perth	

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹	Collection Providers of collection services				Dwellings served	Waste collected			Other programs			
		for disposal	Municipality				Residential	Non-residential	Total	Residential waste per capita	Hazardous waste		
			Employees	Contractors	Other						Curbside	Depot	
thousand persons	availability	percent	tonnes			kilograms per person	availability			year			
Petzawawa (Township)	8.8	✓	...	✓	✓	100	1 080	1 320	2 400	120	...	✓	...
Petawawa (Village)	6.2	✓	...	✓	...	100	2 000	1 000	3 000	320	...	✓	1993
Peterborough	70.1	✓	✓	...	...	86	14 700	-	14 700	210	...	✓	1990
Pickering	73.3	✓	...	✓	...	97	17 769	-	17 769	240	...	✓	...
Pittsburgh	11.7	✓	✓	...	...	100	1 500	200	1 700	130	...	✓	1991
Plympton	6.5	✓	...	✓	...	100	1 283	-	1 283	200	...	✓	...
Port Colborne	16.4	✓	...	✓	...	98	5 600	8 400	14 000	340	...	✓	1993
Port Elgin	7.2	✓	✓	...	✓	80	9 000	2 000	11 000	1 250	...	...	1993
Port Hope	11.9	✓	...	✓	...	100	2 518	-	3 518	210	...	✓	...
Puslinch	4.8	✓	...	✓	✓	100	2 028	1 095	3 123	430	...	✓	...
Raleigh	7.0	x	x	x	x	x	x	x	x	x	x	x	x
Rayside-Balfour	15.5	✓	...	✓	...	100	5 500	-	5 500	380	...	✓	...
Renfrew	8.7	x	x	x	x	x	x	x	x	x	x	x	x
Richmond Hill	88.0	✓	...	✓	...	100	23 826	-	23 826	270	...	✓	...
Rideau	12.3	✓	...	✓	...	100	4 000	-	4 000	320	...	...	...
Rockland	7.3	✓	...	✓	...	100	2 300	1 235	3 535	320	...	✓	1993
Russell	11.5	✓	...	✓	...	100	4 420	-	4 420	390	...	✓	...
Sandwich South	6.6	✓	...	✓	✓	100	1 995	192	2 187	300	...	...	...
Samia-Cleanwater	91.8	✓	...	✓	...	80	21 714	-	21 714	240	...	✓	...
Sault Ste. Marie	81.8	✓	✓	✓	...	100	20 601	2 289	22 890	250	...	...	...
Scarborough	519.8	✓	✓	✓	...	100	100 000	50 000	150 000	190	...	✓	1993
Scugog	19.0	✓	...	✓	...	71	3 054	-	3 054	180	...	✓	...
Sidney	17.6	✓	...	✓	...	100	3 961	-	3 961	230	...	✓	...
Simcoe	13.7	✓	✓	...	...	100	3 000	1 000	4 000	220	...	✓	...
Smith	9.2	x	x	x	x	x	x	x	x	x	x	x	x
Smiths Falls	9.9	✓	...	✓	...	100	2 305	-	2 305	230	...	✓	...
South-West Oxford	10.6	✓	✓	...	...	100	2 087	-	2 087	200	...	...	...
Stoney Creek	42.8	✓	...	✓	...	100	15 366	-	15 366	360	...	...	...
Stratford	34.0	✓	...	✓	...	88	9 100	18 900	28 000	270	...	...	...
Strathroy	13.1	✓	...	✓	...	100	3 311	-	3 311	250	...	...	...
Sturgeon Falls	6.0	✓	✓	...	...	91	3 000	2 000	5 000	500	...	...	1994
St. Catharines	112.8	✓	...	✓	...	74	35 247	2 014	37 261	310	...	✓	1992
St. Marys	8.8	✓	...	✓	...	100	13	-	13	..	...	✓	...
St. Thomas	37.0	✓	...	✓	...	100	11 000	-	11 000	300	...	✓	...
Sudbury	95.5	✓	✓	✓	✓	100	25 400	900	26 300	270	...	✓	1993
Tay	7.6	x	x	x	x	x	x	x	x	x	x	x	x
Tecumseh	12.9	✓	...	✓	...	100	4 256	268	4 524	330	...	✓	...
Thorold	15.3	✓	...	✓	...	100	5 700	-	5 700	370	...	✓	...
Thunder Bay	115.1	✓	✓	...	...	100	35 818	-	35 818	310	...	...	1992
Thurlo	8.0	✓	...	✓	...	100	583	58	641	70	...	✓	...
Tiltsenburg	15.0	x	x	x	x	x	x	x	x	x	x	x	x
Timmins	47.0	✓	✓	...	✓	95	17 772	19 644	37 416	380	...	...	1994
Tiny	9.7	✓	...	✓	...	100	3 568	-	3 568	370	...	✓	...
Toronto	629.8	✓	✓	✓	...	100	235 555	84 893	320 448	370	...	✓	...
Trenton	17.8	✓	...	✓	...	81	..	..	3 900	..	...	✓	1994
Uxbridge	15.1	✓	...	✓	...	100	2 600	100	2 900	190	...	...	...

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality		
	Municipality			Employees		Contractors	Other	Newsprint	Cardboard	Fine paper	Glass	Metal		Other	Total	Composting		Distribution ⁴	Education
	availability				percent	tonnes							percent	availability					
✓	✓	100	133	3	...	78	46	...	268	20	...	✓	✓	Petawawa Township			
✓	...	✓	...	100	...	...	...	...	...	...	229	10	...	...	✓	Petawawa (Village)
✓	...	✓	...	98	2 933	...	...	...	...	...	5 125	26	✓	✓	✓	Peterborough
✓	✓	88	...	...	...	...	...	...	3 549	17	✓	✓	✓	Pickering		
✓	✓	100	...	...	...	...	...	...	450	23	✓	✓	✓	Pittsbur		
✓	...	✓	...	100	122	13	...	65	...	...	264	17	...	✓	✓	Pympion	
✓	...	✓	...	100	587	...	...	...	...	...	1 023	15	✓	✓	✓	Port Colborne
✓	✓	90	134	...	2	...	...	...	435	5	✓	✓	✓	Port Elgin		
✓	✓	100	...	...	...	...	...	...	...	...	...	✓	✓	Port Hope		
✓	✓	-	✓	✓	...	Puslinch			
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Raleigh			
✓	✓	100	...	...	...	...	...	...	...	...	...	✓	...	Rayside-Belfour		
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Renfrew			
✓	...	✓	...	100	2 609	...	...	...	...	...	7 053	23	✓	✓	✓	Richmond Hill
✓	...	✓	...	100	371	...	...	...	...	...	674	14	✓	✓	✓	Rideau
✓	...	✓	...	100	...	...	...	...	...	...	...	...	✓	✓	✓	Rockland
✓	...	✓	...	100	154	...	...	...	...	...	385	8	...	✓	...	Russell
✓	✓	100	12	...	...	...	...	...	49	2	✓	✓	...	Sandwich South		
✓	...	✓	...	100	3 018	...	...	...	...	...	5 046	19	✓	✓	✓	Samia-Clearwater
✓	...	✓	...	75	1 300	...	...	...	...	...	2 600	11	...	✓	✓	Sault Ste. Marie
✓	✓	✓	✓	98	14 490	...	...	...	...	...	23 722	19	✓	✓	✓	Scarborough
✓	...	✓	...	75	...	...	...	...	...	...	224	7	✓	✓	✓	Scugog
✓	✓	100	497	...	...	...	...	...	1 320	25	✓	✓	✓	Sidney		
✓	✓	75	...	...	...	...	...	...	...	...	✓	✓	✓	Simcoe		
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Smith			
✓	...	✓	...	100	...	...	...	...	...	...	...	...	✓	✓	✓	Smiths Falls
✓	✓	100	185	...	...	...	...	...	346	14	...	✓	...	South-West Oxford		
✓	✓	86	1 270	...	...	...	...	...	1 962	11	...	✓	✓	Stoney Creek		
✓	...	✓	...	85	620	...	...	...	...	...	1 267	12	✓	✓	✓	Stratford
✓	✓	100	...	...	...	...	...	...	632	16	✓	...	...	Strathroy		
...	✓	...	Sturgeon Falls			
✓	...	✓	...	74	...	...	...	...	...	...	5 744	14	✓	✓	✓	St. Catharines
✓	✓	90	...	...	...	...	...	...	...	...	...	✓	...	St. Marys		
✓	...	✓	...	100	...	...	...	...	...	...	1 204	10	✓	✓	✓	St. Thomas
✓	✓	-	2 669	...	...	...	...	...	5 288	17	✓	✓	✓	Sudbury		
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Tay			
✓	✓	100	...	...	...	...	...	...	1 025	19	✓	✓	✓	Tecumseh		
✓	...	✓	...	85	...	...	...	...	...	...	885	13	...	✓	✓	Thorold
✓	✓	100	1 755	...	...	...	...	...	1 755	5	✓	✓	...	Thunder Bay		
✓	✓	100	212	...	...	...	...	...	542	48	...	✓	✓	Thurlow		
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Tillsonburg			
...	✓	✓	Timmins			
✓	✓	100	...	...	...	...	...	...	...	...	✓	✓	...	Tiny		
✓	✓	86	17 900	...	...	...	...	...	31 500	12	✓	✓	✓	Toronto		
✓	✓	100	465	...	...	...	...	...	1 236	...	...	✓	✓	Trenton		
✓	...	✓	...	45	...	...	...	...	...	...	550	16	✓	✓	✓	Uxbridge

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹	Collection for disposal	Providers of collection services				Dwellings served	Waste collected			Other programs		
			Municipality			Residential		Non-		Residential waste per capita	Hazardous waste		Composition studies
			Employees	Contractors	Other			residential	Total		Curbside	Depot	
	thousand persons									kilograms per person			
Valley East	22.6	✓	...	...	✓	..	7 500	-	7 500	330	...	✓	...
Vanier	19.0	✓	...	✓	...	75	4 776	-	4 776	250	...	✓	1991
Vaughan	122.3	✓	...	✓	...	100	37 003	-	37 003	300	...	✓	...
Vespra	8.4	✓	...	✓	...	100	2	3	5	..	...	✓	...
Wainfleet	5.4	✓	...	✓	...	..	..	..	..	..	...	...	...
Walden	10.1	✓	✓	...	...	100	4 500	-	4 500	450	...	✓	...
Wallaceburg	14.4	✓	...	✓	...	80	4 500	500	5 000	310	...	✓	...
Wasaga Beach	6.7	✓	✓	✓	...	100	3 380	516	3 896	500	...	...	...
Waterloo	89.0	✓	✓	...	...	100	12 700	318	13 018	140	...	✓	1990
Welland	41.6	✓	✓	✓	...	100	16 900	-	16 900	400	...	...	...
Wellesley	10.3	...	...	...	...	..	..	..	..	..	...	✓	...
West Carleton	15.3	✓	...	✓	...	100	4 120	-	4 120	270	...	...	...
West Lincoln	9.5	✓	...	✓	...	100	3 302	-	3 302	350	...	✓	...
Westminster	8.5	...	...	...	...	..	..	..	..	..	...	...	...
Whitby	65.5	✓	✓	✓	✓	100	14 759	622	15 421	230	...	✓	...
Whitchurch-Stouffville	20.2	✓	...	✓	...	100	5 764	-	5 764	290	...	✓	...
Windsor	235.8	✓	✓	...	...	100	83 000	8 000	91 000	350	...	✓	1992
Woodstock	37.5	✓	✓	...	...	92	10 000	1 000	11 000	270	...	✓	...
Woolwich	21.7	✓	...	✓	...	81	2 480	-	2 480	110	✓	...	...
Yammouth	9.8	✓	...	✓	...	100	..	..	..	..	...	...	...
York	139.2	✓	✓	✓	...	100	49 691	2 071	51 762	360	..	✓	...
Zorra	10.3	✓	...	✓	...	100	5 000	1 000	6 000	490	...	...	..
Manitoba													
Brandon	40.4	✓	✓	...	✓	100	13 136	-	13 136	320	...	✓	...
Dauphin	8.5	✓	✓	✓	...	3	3 800	3 400	7 200	450	...	✓	1993
East St. Paul	6.0	✓	✓	...	...	100	800	-	800	100	...	✓	...
Flin Flon (Part)	7.1	✓	...	✓	...	100	5 000	2 000	7 000	700	...	✓	...
Hanover	9.7	✓	✓	...	✓	50	5 300	-	5 300	550	...	...	...
Morden	5.6	x	x	x	x	x	x	x	x	x	x	x	x
Portage la Prairie (City)	13.5	✓	...	✓	...	100	35	25	60	..	...	✓	1993
Portage la Prairie (Municipality)	7.3	...	...	...	...	..	..	..	..	..	...	...	...
Ritchot	5.6	✓	...	✓	...	..	..	..	..	..	...	...	...
Rockwood	7.1	✓	...	✓	...	34	676	52	728	90	...	...	1993
Selkirk	10.1	✓	...	✓	...	100	..	..	..	..	...	✓	1992
Springfield	11.8	✓	...	✓	...	..	..	..	..	..	...	...	1994
Steinbach	8.9	✓	...	✓	...	100	1 385	-	1 385	160	...	...	...
St. Andrews	9.8	...	...	...	...	..	..	..	..	..	...	...	...
St. Clements	8.1	...	...	...	...	..	..	..	..	..	...	...	...
Tache	8.2	x	x	x	x	x	x	x	x	x	x	x	x
The Pas	6.2	✓	✓	...	...	100	..	..	..	..	...	...	...
Thompson	15.5	✓	✓	✓	...	100	8 000	5 500	11 500	390	...	✓	...
Winkler	6.8	✓	...	✓	...	100	864	1 024	1 904	130	...	✓	...
Winnipeg	623.8	✓	✓	✓	...	100	218 300	17 661	235 961	350	...	✓	...
Saskatchewan													
Corman Park No. 344	6.9	...	...	...	...	..	..	..	..	..	...	...	..
Estevan	10.3	✓	...	✓	✓	100	1 200	2 000	3 200	120	...	...	..
Lloydminster (Part)	7.3	✓	...	✓	...	100	5 350	15 250	20 600	730	...	✓	1990
Melfort	5.7	✓	...	✓	...	100	4 500	900	5 400	790	...	...	..

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality			Newsprint		Cardboard	Fine paper	Glass	Metal	Other	Total	Composting		Distribution ⁴	Education		
	Employees	Contractors	Other														
	availability			percent	tonnes							percent	availability				
✓	...	...	✓	100	...	...	...	...	...	...	1 600	18	✓	✓	✓	Valley East
✓	...	✓	...	56	245	...	...	...	...	...	407	8	✓	✓	✓	Vanier
✓	...	✓	...	90	...	...	...	...	...	...	3 986	10	✓	✓	✓	Vaughan
✓	...	✓	...	100	...	...	...	...	...	...	...	...	✓	✓	...	Vespra
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Wainfleet
✓	...	...	✓	80	...	...	...	...	...	...	...	...	✓	✓	✓	Walden
✓	...	✓	...	90	210	...	...	...	...	...	471	9	...	✓	...	Wallaceburg
✓	✓	✓	...	100	...	...	...	...	...	...	321	9	✓	...	✓	Wasaga Beach
✓	✓	...	...	100	...	...	...	...	...	...	4 000	24	✓	✓	✓	Waterloo
✓	...	...	✓	85	700	...	...	...	...	...	2 820	14	✓	...	✓	Welland
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Wellesley
✓	✓	...	...	-	110	...	...	...	...	...	521	11	✓	✓	✓	West Carleton
✓	...	✓	...	100	246	...	...	...	...	...	582	15	...	✓	✓	West Lincoln
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Westminster
✓	✓	✓	✓	84	1 982	...	...	...	...	...	3 431	19	✓	✓	✓	Whitby
✓	...	✓	...	93	550	...	...	...	...	...	899	13	✓	✓	✓	Whitchurch-Stouffville
✓	✓	...	...	100	...	...	...	...	...	...	...	...	✓	✓	✓	Windsor
✓	✓	✓	✓	100	942	...	...	...	...	...	1 474	13	...	✓	✓	Woodstock
✓	...	✓	...	80	...	...	...	...	...	...	802	24	✓	✓	✓	Woolwich
✓	...	✓	...	100	...	...	...	...	...	...	...	...	...	✓	...	Yarmouth
✓	✓	...	...	70	...	...	...	...	...	...	4 298	8	...	✓	✓	York
✓	...	✓	...	100	185	...	...	...	...	...	356	7	...	✓	✓	Zorra
Manitoba																	
✓	✓	...	✓	1	282	-	18	29	4	119	462	3	✓	...	✓	Brandon	
✓	...	...	✓	-	145	-	-	10	45	14	214	5	...	...	...	Dauphin
...	...	...	...	-	-	-	-	-	62	-	62	9	...	...	...	East St. Paul
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Fin Flon (Part)
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Hanover
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Morden	
✓	...	...	✓	100	639	38	-	150	-	639	1 466	96	...	✓	✓	Portage la Prairie (City)
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Portage la Prairie (Municipality)
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	...	Richot
✓	...	✓	...	25	52	-	1	26	26	33	128	16	✓	...	...	Rockwood
✓	...	...	✓	100	50	-	-	-	25	26	101	...	...	...	✓	Saskatoon
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Springfield
✓	✓	...	...	-	16	8	4	8	6	12	55	4	...	...	✓	Steinbach
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	✓	St. Andrews
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	St. Clements
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Tache	
...	...	...	...	-	...	...	...	...	...	...	...	...	✓	...	...	The Pas
✓	...	...	✓	-	...	...	...	...	...	...	...	...	✓	✓	✓	Thompson
✓	✓	...	...	90	61	123	-	9	12	4	209	19	✓	...	✓	Winkler
✓	✓	...	...	-	1 100	-	-	-	-	145	1 200	1	✓	...	✓	Winnipeg
Saskatchewan																	
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Coman Park No. 344
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	✓	Estevan
✓	...	✓	...	75	460	-	15	32	37	165	709	12	...	...	✓	Lloydminster (Part)
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	✓	Melfort

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection for disposal	Providers of collection services			Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies		
			Employees	Municipality			Residential	Non-			Hazardous waste	Composition			
				Contractors	Other			residential	Total					Curbside	Depot
Moose Jaw	33.8	✓	✓	...	✓	92	9 600	1 950	11 550	280	...	✓	...		
North Battleford	13.9	...	...	...	...	...	...	...	...	...	...	...	...
Prince Albert	34.3	✓	✓	...	✓	90	11 325	1 258	12 583	330	...	✓	...		
Regina	181.2	✓	✓	...	✓	71	53 000	4 000	57 000	290	...	✓	...		
Saskatoon	188.3	✓	✓	...	✓	100	51 000	7 000	58 000	270	...	...	1989
Swift Current	14.8	✓	...	✓	...	100	15 000	7 000	22 000	1 020	...	...	...
Weyburn	9.6	x	x	x	x	x	x	x	x	x	x	x	x		
Yorkton	15.1	x	x	x	x	x	x	x	x	x	x	x	x		
Alberta															
Airdrie	13.0	✓	...	✓	...	100	3 069	-	3 069	240	...	✓	...		
Athabasca County No. 12	6.3	✓	...	✓	...	...	...	...	...	...	...	✓	...
Banff	5.7	✓	✓	...	...	100	7 000	9 500	10 500	1 230	...	✓	1994
Bearhead County No. 11	5.9	✓	...	✓	...	100	...	...	...	...	...	...	...
Beaumont	5.2	✓	...	✓	...	100	2 800	425	3 225	540	...	...	...
Beaver County No. 9	5.5	✓	✓	...	...	100	400	2 340	6 340	70	...	✓	1993
Bonnyville No. 87 (Municipality)	10.9	✓	...	✓	...	38	86	45	131	10	...	✓	...		
Bonnyville (Town)	5.4	x	x	x	x	x	x	x	x	x	x	x	x		
Brazeau No. 77	6.5	...	...	...	...	...	...	...	...	...	...	...	...
Brooks	9.8	✓	✓	...	✓	100	...	...	...	...	...	✓	...
Calgary	739.4	✓	✓	...	...	86	191 000	43 000	234 000	260	...	✓	...
Camrose No. 22 (County)	7.6	✓	...	✓	...	100	2 500	1 500	4 000	330	...	...	...
Camrose (City)	13.6	✓	...	✓	...	100	11 000	11 000	22 000	810	...	✓	...		
Canmore	5.7	✓	...	✓	...	100	1 153	1 855	3 008	200	...	✓	1991		
Clearwater No. 99	10.8	✓	✓	✓	...	100	9 646	21 684	30 330	800	...	...	...
Coaldale	5.5	✓	✓	...	✓	99	2 250	150	2 400	410	...	✓	1992		
Cochrane	5.5	✓	✓	✓	...	100	1 700	2 300	4 000	310	...	✓	1993		
Crowsnest Pass	6.7	✓	...	✓	...	100	4 745	-	4 745	710	...	...	...
Drayton Valley	6.2	✓	...	✓	...	100	6 639	30 742	37 381	1 080	...	...	1991
Drumheller	6.6	✓	✓	...	...	100	2 000	-	2 000	300	...	...	...
Edmonton	635.2	✓	✓	✓	✓	68	142 500	-	142 500	220	...	✓	1994		
Edson	7.5	✓	...	✓	...	100	1 000	-	1 000	130	...	✓	1993		
Foothills No. 31	11.4	...	...	...	...	...	...	...	...	...	...	...	...
Fort McMurray	35.5	✓	✓	...	...	90	27 000	-	27 000	760	...	✓	1993
Fort Saskatchewan	12.4	✓	...	✓	...	100	2 940	3 033	5 973	240	...	✓	1993		
Grande Prairie	28.6	✓	...	✓	...	100	5 860	-	5 860	210	...	✓	...		
Grande Prairie County No. 1	12.4	✓	...	✓	...	100	5 860	-	5 860	470	...	✓	...		
High River	8.5	✓	✓	...	✓	100	3 000	1 000	4 000	460	...	✓	...		
Hinton	8.3	✓	...	...	✓	...	...	...	...	...	...	...	...
Improvement Dist. of Yellowhead #14	9.0	✓	✓	✓	...	...	1 400	-	1 400	160	...	...	...
Improvement Dist. #16	5.3	x	x	x	x	x	x	x	x	x	x	x	x		
Improvement Dist. #17 Central	12.6	✓	✓	✓	...	100	10 000	-	10 000	790	...	...	...
Improvement Dist. #18 (Part)	11.6	...	...	...	...	...	...	...	...	...	...	...	1990
Improvement Dist. #23	7.5	...	...	...	...	...	...	...	...	...	...	...	...
Innisfail	6.0	✓	✓	✓	...	100	1 351	200	1 551	230	...	✓	...		
Lac Ste. Anne County No. 28	8.4	✓	...	✓	...	6	312	-	312	40	...	✓	...		
Lacombe County No. 14	8.9	✓	...	✓	...	11	...	...	...	...	...	...	...
Lacombe (Town)	7.3	✓	✓	...	...	100	1 100	1 100	2 200	150	...	✓	...

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services			Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other													
availability				percent	tonnes							percent	availability			
✓	...	✓	✓	-	210	60	30	20	72	-	392	4	...	...	✓	Moose Jaw
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	North Battleford
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	✓	✓	Prince Albert
✓	✓	...	✓	3	3 200	1 980	-	-	-	470	5 650	10	✓	...	✓	Regina
✓	...	✓	✓	-	9 000	-	-	170	-	86	9 256	15	...	...	✓	Saskatoon
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Swift Current
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Wayburn
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Yorkton
Alberta																
✓	✓	...	...	-	193	85	20	18	19	10 807	492	14	...	...	✓	Airdrie
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Athabasca County No. 12
✓	✓	✓	...	-	80	26	6	8	4	45	149	2	...	...	✓	Banff
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Barhead County No. 11
✓	...	✓	...	-	84	15	-	-	3	-	102	...	...	...	✓	Beaumont
✓	...	...	✓	-	31	2	1	3	2	-	39	9	...	✓	✓	Beaver County No. 9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Bonnyville No. 87 (Municipality)
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Bonnyville (Town)
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Brazeau No. 77
✓	...	...	✓	-	...	...	...	...	...	...	180	...	✓	...	✓	Brooks
✓	✓	...	...	-	6 047	-	-	800	-	5 282	9 715	5	✓	...	✓	Calgary
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Camrose County No. 22
✓	...	✓	...	-	250	-	100	-	126	-	476	...	✓	✓	✓	Camrose (City)
✓	✓	...	...	-	62	-	-	2	4	154	222	16	...	...	...	Camrose
✓	...	...	✓	-	46	4	-	6	-	98	156	2	...	...	✓	Cleanwater No. 89
✓	...	✓	...	3	80	74	-	2	4	2	180	7	...	...	✓	Coaldale
✓	✓	✓	✓	5	40	52	14	10	18	14	146	...	...	...	✓	Cochrane
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Crowsnest Pass
✓	...	...	✓	-	68	83	3	17	10	150	331	5	...	...	✓	Drayton Valley
✓	✓	...	...	-	40	310	5	-	-	255	610	23	✓	...	✓	Drumheller
✓	✓	✓	...	80	16 418	2 650	53	861	1 392	2 570	26 202	...	...	✓	✓	Edmonton
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	✓	Edson
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Foothills No. 31
✓	✓	...	✓	-	...	...	...	...	...	...	...	...	✓	✓	✓	Fort McMurray
✓	✓	✓	...	-	276	104	-	37	19	250	686	...	✓	✓	✓	Fort Saskatchewan
✓	...	...	✓	-	118	78	118	10	50	145	525	8	...	...	✓	Grande Prairie
✓	...	...	✓	-	263	78	-	10	50	133	526	8	...	...	✓	Grande Prairie County No. 1
✓	...	...	✓	100	200	-	-	-	-	-	200	6	...	...	...	High River
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Hinton
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Improvement Dist. of Yellowhead #14
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Improvement Dist. #18
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Improvement Dist. #17 Central
✓	...	...	✓	-	40	40	15	-	-	-	95	...	...	...	✓	Improvement Dist. #18 (Part)
...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	✓	Improvement Dist. #23
✓	✓	...	✓	80	40	40	2	10	10	5	107	7	✓	...	✓	Innisfail
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Lac Ste. Anne County No. 28
✓	...	...	✓	-	70	-	-	-	-	-	70	...	✓	...	...	Lacombe County No. 14
✓	...	...	✓	-	...	...	...	...	...	...	...	...	✓	...	...	Lacombe (Town)

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services			Dwellings served	Waste collected			Other programs			
		for disposal	Municipality		Other		Residential	Non- residential	Total	Residential waste per capita	Hazardous waste		Composition studies
			Employees	Contractors							Curbside	Depot	
Leduc County No. 25	11.8	✓	...	✓	...	3	68	-	75	10	...	✓	...
Leduc (City)	14.4	✓	...	✓	...	100	7 200	4 800	12 000	500	...	✓	1992
Lethbridge County No. 26	8.7	✓	...	✓	...	16	936	-	936	110	...	✓	...
Lethbridge (City)	63.2	✓	✓	...	...	72	15 227	8 222	23 449	240	...	✓	1992
Medicine Hat	45.1	✓	✓	...	...	100	14 444	2 812	17 256	320	...	✓	...
Morinville	6.3	✓	✓	...	...	100	1 393	-	1 393	220	...	✓	...
Mountain View County No. 17	10.4	...	...	...	...	..	..	..	..	..	...	...	...
Newell County No. 4	6.2	...	...	...	...	..	..	..	..	..	...	✓	...
Okotoks	7.0	x	x	x	x	x	x	x	x	x	x	x	x
Olds	5.6	✓	✓	...	...	100	1 296	2 056	3 352	220	...	✓	1993
Parkland County No. 31	23.2	...	...	...	...	..	..	..	..	..	...	✓	1993
Peace River	6.8	✓	...	✓	...	100	2 800	3 000	5 800	410	...	✓	1993
Ponoka County No. 3	8.3	...	...	...	...	..	..	..	..	..	...	...	...
Ponoka (Town)	6.2	✓	...	✓	...	100	2 500	1 500	4 000	410	...	✓	1993
Red Deer County No. 28	15.8	✓	...	✓	...	10	..	..	..	..	...	...	...
Red Deer (City)	61.1	✓	...	✓	...	100	13 349	51 000	64 349	220	...	✓	...
Rocky Mountain House	5.8	✓	✓	✓	...	100	8 646	21 685	30 331	1 490	...	...	...
Rocky View No. 44	20.7	x	x	x	x	x	x	x	x	x	x	x	x
Slave Lake	5.8	✓	✓	...	...	100	4 800	2 650	7 250	800	...	...	...
Spruce Grove	13.3	✓	...	✓	...	100	5 000	-	5 000	380	...	...	1993
Stathcona County No. 20	58.3	✓	...	✓	...	87	12 936	-	12 936	220	...	✓	1986
Stettler County No. 6	5.3	x	x	x	x	x	x	x	x	x	x	x	x
Stony Plain	7.4	✓	...	✓	...	87	2 246	2 439	4 685	300	...	✓	1994
Sturgeon No. 90	15.9	...	...	...	...	..	..	..	..	..	...	✓	...
St. Albert	43.4	✓	✓	✓	...	100	12 150	1 350	13 500	280	...	✓	1992
St. Paul County No. 19	6.9	...	...	...	...	..	..	..	..	..	...	✓	...
Taber No. 14 (District)	5.5	...	...	...	...	..	..	..	..	..	✓	...	...
Taber (Town)	6.9	✓	✓	...	...	100	6 000	3 000	9 000	870	...	✓	...
Vegreville	5.2	✓	✓	...	...	100	2 000	8 000	10 000	380	...	✓	...
Vermilion River County No. 24	7.8	✓	✓	...	...	..	..	..	..	..	...	...	...
Westlock No. 92	7.3	✓	...	✓	...	100	..	..	..	..	...	✓	...
Wetaskiwin County No. 10	10.1	x	x	x	x	x	x	x	x	x	x	x	x
Wetaskiwin (City)	11.0	✓	...	✓	...	69	3 604	-	3 604	330	...	✓	...
Wheatland County No. 16	6.0	✓	...	✓	...	100	1	-	1	..	...	✓	1993
Whitecourt	7.3	✓	✓	✓	✓	58	2 100	26	2 126	290	...	✓	...
British Columbia													
Abbotsford	20.4	✓	...	✓	...	100	3 859	-	3 859	190	...	...	...
Burnaby	166.3	✓	✓	...	...	77	41 000	-	41 000	250	...	...	1992
Campbell River	23.2	✓	...	✓	...	77	6 000	-	6 000	260	...	...	1992
Castlegar	7.0	✓	...	✓	✓	100	..	..	..	..	...	...	...
Central Saanich	14.3	✓	...	...	✓	..	..	..	..	..	...	...	...
Chilliwack	54.7	...	...	...	...	..	..	..	..	..	...	...	...
Coldstream	8.8	✓	...	...	✓	..	..	..	..	..	...	...	...
Colwood	14.0	...	...	...	...	..	..	..	..	..	...	...	1993

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services			Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality				Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other													
	availability			percent	tonnes							percent	availability			
✓	...	...	✓	-	120	20	-	10	20	-	250	79	...	✓	...	Leduc County No. 25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Leduc (City)
✓	...	✓	...	1	1 440	750	-	150	100	138	2 578	73	✓	✓	✓	Lethbridge County No. 26
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	...	Lethbridge (City)
✓	...	...	✓	-	...	...	...	...	...	...	...	...	✓	✓	✓	Medicine Hat
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Morinville
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Mountain View County No. 17
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	...	Newell County No. 4
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Okotoks
✓	✓	...	...	-	100	250	5	25	170	20	570	31	✓	✓	✓	Olds
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	Parkland County No. 31
✓	...	...	✓	-	...	...	...	...	...	...	100	3	...	...	...	Peace River
✓	✓	...	...	-	66	18	-	18	13	20	135	...	...	✓	✓	Ponoka County No. 3
...	...	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Ponoka (Town)
✓	...	✓	...	100	1 238	120	11	138	155	71	1 720	...	...	...	✓	Red Deer County No. 23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Red Deer (City)
...	...	...	...	M	...	...	...	...	...	...	...	...	...	...	...	Rocky Mountain House
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Rocky View No. 44
✓	...	...	✓	-	34	-	5	-	-	-	39	1	...	...	...	Sieve Lake
✓	✓	✓	...	-	...	...	...	...	...	...	...	...	✓	...	...	Spruce Grove
✓	✓	✓	...	90	1 227	326	-	68	84	2 187	3 902	23	✓	✓	✓	Stathcona County No. 20
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Stettler County No. 6
✓	✓	...	...	-	148	28	-	30	-	426	631	22	✓	✓	✓	Stony Plain
...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	...	Sturgeon No. 90
✓	✓	✓	...	-	1 114	233	-	98	88	1 262	2 795	19	✓	...	✓	St. Albert
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	St. Paul County No. 19
✓	...	✓	...	-	200	300	-	-	-	100	600	...	...	...	✓	Taber No. 14 (District)
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Taber (Town)
✓	...	...	✓	-	2	4	4	-	-	9	39	2	✓	✓	✓	Vegreville
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Vermilion River County No. 24
...	...	...	...	...	...	...	...	...	...	...	...	...	✓	...	...	Westlock No. 92
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Wetaskiwin County No. 10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Wetaskiwin (City)
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Wheatland County No. 16
✓	✓	...	✓	-	31	53	-	-	-	-	84	4	✓	✓	✓	Whitecourt
British Columbia																
✓	...	...	✓	-	634	228	114	69	108	239	1 392	27	...	...	✓	Abbotsford
✓	✓	...	...	78	2 600	200	25	900	450	3 130	7 475	15	✓	✓	✓	Burnaby
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Campbell River
✓	...	...	✓	-	...	...	...	...	...	...	...	...	...	...	...	Castlegar
✓	...	...	✓	-	...	...	...	...	...	...	...	...	✓	✓	✓	Central Saanich
✓	...	✓	...	-	1 091	231	-	354	78	44	1 798	...	...	✓	✓	Chilliwack
✓	...	...	✓	-	...	...	...	...	...	...	460	...	✓	...	...	Coldstream
✓	...	...	✓	85	345	-	-	112	40	-	497	...	...	✓	✓	Colwood

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services				Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies year
		disposal	for Municipality					Residential	Non- residential	Total		Curbside	Depot	
			Employees	Contractors	Other	availability								
Comox	9.0	✓	✓	...	...	100	3 042	2 000	5 042	340	...	✓	...
Coquitlam	87.9	✓	...	✓	...	62	24 886	-	24 886	280	...	...	1993
Courtenay	12.7	✓	...	✓	...	...	...	...	8 058	...	...	...	...
Cranbrook	17.0	✓	✓	...	✓	78	9 204	1 080	10 284	540	...	...	...
Dawson Creek	11.0	✓	...	✓	...	100	7	60	67	...	...	...	1992
Delta	93.1	✓	...	✓	...	100	27 875	53 454	81 329	300	...	...	1993
Esquimalt	16.9	✓	✓	...	...	62	1 600	200	1 800	90	...	...	...
Fernie	5.2	✓	✓	...	...	100	3 650	-	3 650	700	...	...	...
Fort St. John	14.2	✓	...	...	✓	...	14 000	-	14 000	980	...	✓	...
Kamloops	71.8	✓	✓	...	✓	100	17 800	11 675	29 475	250	...	...	1991
Kelowna	85.6	✓	...	✓	...	68	16 081	-	16 081	190	...	...	1990
Kimberley	6.8	x	x	x	x	x	x	x	x	x	x	x	x	
Klittmat	11.6	x	x	x	x	x	x	x	x	x	x	x	x	
Langley (City)	20.7	...	...	...	...	...	...	...	...	...	...	...	...
Langley (Township)	69.1	✓	...	✓	...	63	10 000	-	10 000	140	...	...	...
Mackenzie	8.0	✓	✓	...	...	100	1 500	1 500	3 000	250	...	...	...
Maple Ridge	52.8	✓	...	...	✓	...	...	...	...	...	...	...	1990
Matsqui	73.6	✓	✓	...	✓	100	19 830	16 500	36 330	270	...	...	...
Merritt	6.7	✓	✓	...	...	100	1 560	1 040	2 600	230	...	...	...
Mission	28.5	✓	...	✓	...	63	4 500	-	4 500	160	...	...	...
Nanaimo	66.8	✓	✓	✓	...	78	8 969	-	8 969	130	...	✓	...	
Nelson	9.3	✓	✓	...	...	100	1 196	936	2 132	130	...	...	1979
New Westminster	45.8	✓	✓	...	...	100	4 985	3 222	8 207	110	...	✓	...
North Cowichan	23.2	✓	✓	...	...	100	...	...	...	...	...	...	1993
North Saanich	10.0	✓	...	...	✓	...	...	...	...	...	...	✓	...
North Vancouver (City)	40.2	✓	✓	...	...	100	6 495	-	6 495	160	...	...	...
North Vancouver (District)	78.7	✓	✓	...	...	100	19 000	7 000	26 000	240	...	...	...
Oak Bay	18.6	✓	✓	...	...	100	3 125	-	3 125	170	...	...	...
Parksville	8.1	✓	...	...	✓	...	...	...	...	...	...	...	...
Penticton	29.9	✓	...	✓	...	100	6 900	11 300	18 200	230	...	...	...
Pitt Meadows	12.1	✓	...	✓	...	79	7 000	-	7 000	580	...	...	...
Port Alberni	18.9	✓	✓	...	...	93	2 953	4 877	7 630	160	...	...	...
Port Coquitlam	38.5	✓	✓	...	...	100	11 102	-	11 102	290	...	...	...
Port Hardy	5.2	✓	...	✓	...	96	3 551	1 472	5 023	690	...	...	...
Port Moody	18.5	✓	✓	...	...	82	4 932	-	4 932	270	...	...	1990
Powell River	13.7	✓	✓	✓	...	100	1 820	1 950	3 770	130	...	...	1988
Prince George	72.3	✓	✓	✓	...	...	30 000	20 000	50 000	420	...	...	...
Prince Rupert	16.9	✓	✓	...	...	100	2 400	1 400	3 800	140	...	...	1994
Quesnel	8.5	✓	✓	...	...	93	4 000	4 000	8 000	470	...	...	...
Revelstoke	8.3	✓	...	✓	...	95	2 227	3 340	5 567	270	...	...	...
Richmond	132.5	✓	...	✓	✓	61	27 569	-	27 569	210	...	...	...
Saanich	99.6	✓	✓	✓	✓	78	11 930	-	11 930	120	...	...	...
Salmon Arm	13.0	...	...	...	✓	...	...	...	...	...	...	...	1992
Sechelt	6.9	✓	...	✓	...	100	5 040	2 160	7 200	730	...	...	...
Sidney	10.5	✓	...	✓	...	100	...	...	1 504	...	...	...	1991
Smithers	5.2	✓	✓	...	✓	100	2 082	1 388	3 470	400	...	✓	...	

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Recycling service	Providers of recycling services				Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Municipality					Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
	Employees	Contractors	Other														
availability					percent	tonnes							percent	availability			
✓	✓	...	100	..	..	..	..	..	..	1	-	✓	...	...	Comox
✓	...	✓	87	3 023	-	-	962	254	22	4 261	15	...	...	✓	Coquitlam
...	Courtenay
✓	✓	...	-	Cranbrook
...	Dawson Creek
✓	...	✓	100	3 272	322	19	666	766	122	5 137	16	✓	✓	✓	Delta
✓	✓	...	80	..	..	..	..	..	..	..	..	...	✓	...	Esquimalt
✓	✓	...	-	118	3	...	...	...	Fernie
✓	✓	...	100	..	..	..	..	..	..	200	1	...	...	...	Fort St. John
✓	✓	...	20	2 100	960	-	70	10	1 170	4 310	19	...	✓	✓	Kamloops
✓	...	✓	✓	✓	-	3 523	3 787	250	319	-	334	8 213	34	...	✓	✓	Kelowna
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Kimberley
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Kitimat
✓	...	✓	50	600	22	-	138	80	25	845	..	...	...	...	Langley (City)
✓	...	✓	100	2 467	50	-	495	278	80	3 380	25	...	...	✓	Langley (Township)
✓	...	✓	-	100	-	-	-	-	-	100	6	...	...	...	Mackenzie
✓	...	✓	80	1 513	670	98	426	245	1 577	4 361	..	...	✓	✓	Maple Ridge
✓	✓	...	-	2 537	912	-	278	-	632	4 359	18	...	✓	✓	Matsqui
...	✓	...	Meritt
✓	...	✓	77	..	..	..	..	..	..	788	15	✓	✓	✓	Mission
✓	...	✓	✓	...	78	1 244	247	49	162	37	163	1 902	17	...	...	✓	Nanaimo
✓	✓	...	90	232	382	-	114	-	73	872	42	...	✓	✓	Nelson
✓	✓	100	766	200	-	200	220	216	39	1	✓	...	✓	New Westminster
✓	✓	...	-	✓	✓	North Cowichan
✓	✓	...	100	245	3	-	107	28	17	648	..	...	✓	✓	North Saanich
✓	...	✓	100	1 606	-	-	386	128	21	2 141	25	...	✓	✓	North Vancouver (City)
✓	...	✓	100	..	..	..	..	..	..	0	..	...	✓	✓	North Vancouver (District)
✓	✓	75	620	45	10	225	75	225	1 200	28	✓	✓	...	Oak Bay
✓	✓	...	-	✓	...	Parksville
✓	...	✓	80	375	-	-	90	90	-	555	7	...	...	...	Penticton
✓	...	✓	79	..	..	..	..	..	..	200	3	...	✓	✓	Pitt Meadows
✓	✓	...	-	178	-	-	66	5	-	249	8	✓	✓	✓	Port Alberni
✓	✓	100	..	..	..	..	..	..	1 600	13	...	✓	✓	Port Coquitlam
...	✓	...	Port Hardy
✓	✓	100	..	..	..	..	..	..	1 200	20	✓	...	✓	Port Moody
✓	...	✓	-	88	103	24	66	35	546	862	32	...	✓	✓	Powell River
✓	✓	-	635	50	-	-	-	-	685	2	✓	✓	...	Prince George
✓	✓	✓	100	..	..	..	..	..	..	205	8	✓	...	✓	Prince Rupert
✓	✓	...	100	..	..	..	..	..	..	..	..	...	...	...	Queanlen
✓	✓	...	-	85	-	10	51	34	-	180	7	...	✓	✓	Riverside
✓	...	✓	71	3 460	105	-	808	319	1 431	6 123	18	✓	✓	✓	Richmond
✓	✓	...	58	2 176	205	-	766	226	526	3 899	25	✓	✓	✓	Saanich
...	✓	...	Salmon Arm
✓	✓	...	-	130	125	6	46	19	18	344	6	...	✓	...	Sechelt
✓	✓	...	100	331	-	-	143	42	78	584	..	...	✓	✓	Sidney
✓	✓	...	-	Smithers

Symbols are explained on page ii. Notes are on page 38.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993

Municipality	Population ¹ thousand persons	Collection	Providers of collection services			Dwellings served	Waste collected			Residential waste per capita kilograms per person	Other programs		Composition studies year
		disposal	for Municipality				Residential	Non- residential	Total		Curbside	Depot	
			Employees	Contractors	Other								
Squamish	13.4	✓	...	✓	...	..	..	..	9 250	..	...	...	...
Summerland	10.2	✓	...	...	✓	100	7 782	4 511	12 293	770	...	...	...
Surrey	256.6	✓	...	✓	...	70	67 300	59 700	127 000	260	...	...	...
Terrace	11.7	✓	✓	...	✓	100	3 360	6 786	10 146	290	...	...	1993
Trail	8.3	✓	...	✓	...	100	..	..	..	..	...	...	...
Vancouver	483.9	✓	✓	...	...	48	79 100	-	79 100	180	...	...	1983
Vernon	25.9	✓	...	✓	...	100	5 000	10 000	15 000	190	...	...	...
Victoria	74.2	✓	✓	...	✓	36	6 425	600	7 025	90	...	...	1989
West Vancouver	40.6	✓	...	✓	...	69	9 381	-	9 381	230	...	...	...
White Rock	17.1	✓	✓	...	...	100	3 310	2 330	5 640	190	...	...	...
Williams Lake	10.8	x	x	x	x	x	x	x	x	x	x	x	x
Yukon													
Whitehorse	19.7	✓	✓	...	✓	100	8 000	12 000	20 000	410	...	✓	...
Northwest Territories													
Yellowknife	15.6	✓	...	✓	...	100	5 414	5 832	11 246	350	...	✓	1989

Notes:

For the complete questionnaire, refer to pages 43 and 44.

1. Population estimates refer to July 1, 1993 and were last revised in December, 1994.

2. Of dwellings with a collection program for household recyclables.

3. Quantity of household materials collected for recycling as a percentage of residential waste collected for disposal and household materials collected for recycling.

4. Distribution of backyard composters.

Source:

Statistics Canada, National Accounts and Environment Division.

Table 2.2

Selected Waste Disposal and Diversion Activities, Surveyed Municipalities, 1993 (continued)

Providers of recycling services																
Recycling service	Municipality			Curbside service ²	Materials collected for recycling							Recycling rate ³	Other programs			Municipality
	Employees	Contractors	Other		Newsprint	Cardboard	Fine paper	Glass	Metal	Other	Total		Composting	Distribution ⁴	Education	
availability				percent	tonnes							percent	availability			
✓	...	✓	...	-	240	200	-	-	-	184	624	...	...	✓	✓	Squamish
✓	...	✓	...	-	127	-	-	40	10	300	477	6	✓	...	...	Summerland
✓	...	✓	...	70	...	...	...	...	...	...	9 200	12	...	...	✓	Surrey
...	...	...	...	...	...	...	...	...	...	...	...	...	✓	✓	✓	Terrace
...	...	...	...	...	...	...	...	...	...	...	...	...	...	✓	✓	Trail
✓	✓	...	...	48	8 000	400	-	3 350	800	7 700	20 250	20	✓	✓	✓	Vancouver
✓	✓	...	...	-	...	...	...	...	...	...	...	...	...	...	...	Vernon
✓	...	...	✓	60	1 870	-	-	900	260	-	2 930	31	...	✓	✓	Victoria
✓	...	✓	...	100	...	...	...	...	...	...	3 040	24	✓	✓	✓	West Vancouver
✓	✓	...	...	60	410	21	-	135	37	6	609	16	...	✓	...	White Rock
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Williams Lake
Yukon																
✓	...	...	✓	-	-	107	90	325	118	12	652	8	✓	✓	...	Whitehorse
Northwest Territories																
✓	✓	✓	...	-	94	-	18	-	9	-	138	2	...	...	✓	Yellowknife

3 Survey Design and Methodology

This final section of the report describes the design and methodology of the LGWMS, 1993. It addresses the following areas: the survey objective, the sample structure, along with the procedures for data collection, editing, imputation and quality assurance.

Objective

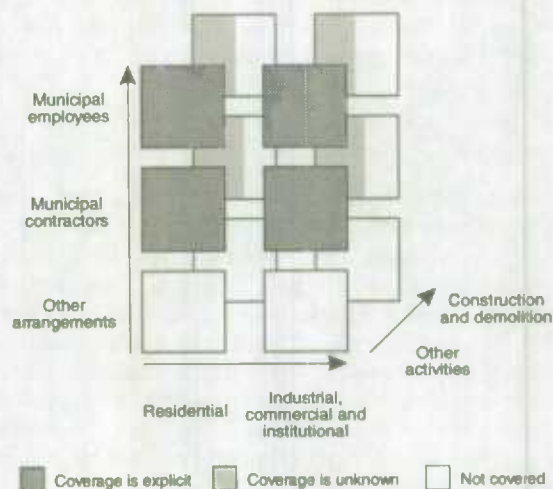
The LGWMS, 1993, was designed to summarize municipal waste management activities, particularly those related to residential waste disposal and diversion. The questions posed in this survey cover many aspects of municipalities' waste disposal and diversion activities, providing information on both the types of waste management activities represented as well as the quantities of waste that are involved. The questionnaire is shown at the end of this chapter.

This survey, however, does not provide exhaustive coverage of the total solid waste collection stream (Figure 3.1). Of waste collected for disposal, the LGWMS, 1993, asked directly for the quantity collected from the residential and the non-residential (ICI) sectors by either employees of, or by private companies contracted by, the surveyed municipalities. The definitions used did not explicitly specify the waste generating activities to be considered and, as such, municipalities had no instructions to include or to exclude C&D wastes. Another omission was a clear specification of "other" collection arrangements. At this point, responses in this category are interpreted as including services provided by private companies to individual business and households, along with those provided to the surveyed municipalities by another level of government (usually upper tier municipalities). Of waste collected for recycling, the LGWMS, 1993, asked directly for the quantity collected from households. This question did not specify the collection arrangements to be considered. There were no questions at all on ICI waste collected for recycling.

Sample definition and data collection

The survey covered all lower tier municipalities across Canada that had a population of at least 5 000 (based on the *Census of Population, 1991*). This criterion was selected as the most cost-effective way of representing a large part of the Canadian population, as smaller municipalities were not likely to be able to provide the information required. Table 3.1 shows that the resulting sample of 642 municipalities represented 22.8 million people (77% of the Canadian population in 1993). By province and territory, the sample fraction, or the proportion of the total population that is covered by the sample, ranged from 0.22 in Prince Edward Island to 0.86

Figure 3.1
Coverage of Total Waste Collection,
LGWMS, 1993



Source:
Statistics Canada, National Accounts and Environment Division.

in Ontario. In the Atlantic Provinces, Saskatchewan, Yukon and the Northwest Territories, the sample fraction is less than 0.70 owing to the dispersed nature of settlements; most people in these areas live in very small municipalities.

Data collection was based at the Sturgeon Falls regional office of Statistics Canada and took place during June and July, 1994. Questionnaires were mailed to all sampled municipalities. Responses were obtained from a contact person who was identified as being responsible for or having knowledge of the municipal waste management programs. After an initial round of editing and data quality review, additional follow-up was done for about 80 of the larger units, i.e. municipalities with a population of at least 50 000. In addition, the resulting data were supplemented by adding selected variables related to the Census of Population (1991 population and geocoding) and population projections for 1993.

Editing and imputation

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.

The second step, consistency edits, were applied when the responses on one part of a questionnaire were logically inconsistent with those given for other questions.

Although all sampled municipalities did respond to the survey, not all of them could provide the level of detail requested. This was especially true of responses to questions involving the weights of material collected and those supplied by the smaller municipalities, which do not always have weigh scales and so do not have exact tonnages. In these cases, estimates were first requested from either the regional or provincial governments. If such estimates were not available either, then selected per capita rates were used from municipalities in the same region and size group that did provide complete information in the survey. The effect of these imputation on selected estimates is shown in Table 3.2.

Data quality

Two types of sampling errors should be considered in evaluating this survey. First, as a result of the population threshold that was applied, the sample coverage in many provinces was quite low (Table 3.1) and as such, regional rather than provincial detail is shown. Even with this aggregation, it is noted that the sample coverage of mid- and high-density urban areas is complete but rural areas were not as well represented. Second, instead of a sample based entirely on lower tier municipalities, it might have been useful to have a blended sample of upper and lower tier municipalities, to reflect the true distribution of waste management responsibilities in a given area.

Non-sampling errors may also have influenced the quality of data. For example, respondents may have made errors in answering questions, answers may have been incorrectly entered on the questionnaires and errors may have been introduced in processing and tabulating data. Every effort was made to reduce the occurrence of such errors in the survey, including: a complete verification of keyed data, validity and consistency edits, closer follow-up with the larger sampled units, and consultation with selected provincial offices of waste management. However, the main sources of non-sampling error were the differences in definition of some terms on the questionnaire and across sampled jurisdictions, and what the respondents understood by those terms. These had the greatest influence on the ability of the LGWMS, 1993, to cover total solid waste collection (Figure 3.1).

Table 3.1
Sample Distribution Sample by Province and Territory

Province/territory	Sample		Sample fraction
	municipalities	population	
	number	thousand persons	
Newfoundland	13	238	0.41
P.E.I.	3	29	0.22
Nova Scotia	32	546	0.59
New Brunswick	16	291	0.39
Quebec	189	5 362	0.74
Ontario	218	9 278	0.86
Manitoba	20	820	0.73
Saskatchewan	12	521	0.52
Alberta	72	2 268	0.84
British Columbia	65	2 782	0.78
Yukon	1	16	0.84
N.W.T.	1	20	0.25
Canada	642	22 171	0.77

Notes:

Figures may not add due to rounding.

Population estimates refer to July 1, 1993.

Source:

Statistics Canada, National Accounts and Environment Division.

Table 3.2
Imputation Rates for Selected Questions

Imputation rate ¹	Question				
	2a	2b	2c	3b	5tot
	percent				
a. Frequency	5	17	11	17	1
b. Population	6	6	4	6	-
c. Estimate	5	5	3	5	-

Note:

1. The number of times that an imputation was made, as a percentage of all cases to which the question applies. In this table, the imputation rate is expressed as (a) the percentage of respondents that did not provide an answer, (b) the percentage of the sample population that those municipalities represent and (c) the relative contribution of those cases to the sample estimate for the question.

Source:

Statistics Canada, National Accounts and Environment Division.



1993 LOCAL GOVERNMENT WASTE MANAGEMENT SURVEY

National Accounts and Environment Division

Confidential when completed.
Collected under the authority of the *Statistics Act*,
Revised Statutes of Canada, 1985, Chapter S19.
Keep one copy for your records.

Si vous préférez ce questionnaire en français,
veuillez cocher ☐

USE OF DATA REPORTED

This survey is conducted by Statistics Canada. It is designed to collect information related to waste management and recycling from governments in a form that will permit national and regional assessments. Survey results will be released by the National Accounts and Environment Division.

CONFIDENTIALITY

Statistics Canada is prohibited by law from publishing any statistics that could divulge information obtained from this survey that relates to any identifiable local government without the previous written consent of that local government. By signing the voluntary authorization below you consent to the publication of identifiable information for your local government.

DATA SHARING AGREEMENT

To reduce response burden and to ensure more uniform statistics, Statistics Canada has entered into an agreement, under Section 12 of the *Statistics Act*, with the Federal Department of the Environment for the sharing of the information from this survey. Under Section 12 of the *Statistics Act*, you may refuse to share your information with the Federal Department of the Environment by writing to the Chief Statistician and returning your letter of objection along with a completed questionnaire in the enclosed return envelope.

RETURN DATE

This questionnaire should be completed and returned in the postage paid envelope within 30 days of receipt.

REPORTING PERIOD

Please report for the calendar year beginning January 1, 1993 and ending December 31, 1993.

Voluntary Authorization

I hereby authorize Statistics Canada to publish any or all portions of the data supplied on this questionnaire by their local government:

Name

Signature

Official position

Yes ☐

No ☐

REPORTING GUIDE AND DEFINITIONS

1. **Your municipality's employees** refers to people on the employee payroll of the respondents government.

Contractor(s) hired by your municipality refers to the independent firms hired by the respondents government to perform waste management activities for the municipality. Excluded are those contractors hired by other government bodies to provide a service to the respondents government.

Other can include, for example, collection by private contractors hired directly by residents, or collection by another municipality or regional authority.

2. **Waste** should be reported in metric tonnes. Estimates are acceptable.

3. A **dwelling** is defined as a separate set of living quarters with a private entrance either from the outside or from a common hall, lobby, vestibule, or stairway inside the building in which a person or group of persons resides or could reside. The entrance to the building must be one which can be used without passing through the living quarters of someone else.

4. **Your municipality's waste collection programmes** are ones conducted by your employees or contractors operating under contract to your municipality.

5. **Curbside collection** is the collection of materials at or near the point of generation (for example, a dwelling), usually at the curb or edge of the street.

A **depot** is a facility where members of the public can bring materials (for example, for recycling; separate containers may be in place for different materials such as newspapers, glass or metals).

6. **Household hazardous waste** is hazardous waste generated by the occupants of dwellings. It may include items such as paint and varnish remnants, batteries, household cleaners, oil, gasoline and pesticides.

Name of person completing report

Address

Official position

Telephone number

Fax number



1010256140

c. 3

1. (a) Does an organized waste collection programme exist in your municipality?

Yes ☐No ☐*If no, go to Question 3*

- (b) If yes, who collects the waste?
(check all items that apply; see guide item 1)

Your municipality's employees ☐Contractor(s) hired by your municipality ☐Other (please specify; see guide item 1) ☐

2. What is the amount of waste collected (for disposal) by your municipality's employees and/or by contractors operating under contract to your municipality? (exclude amounts reported in Questions 5 and 8; see guide item 2)

Residential waste Non-residential waste Total

3. (a) What is the number of dwellings in your municipality?
(count each individual dwelling unit; see guide item 3)

- (b) If you operate a waste collection programme, how many of these dwellings does it serve?

4. What is the amount of waste generated by residents of your municipality that is not reported in Question 2? (i.e. wastes not subject to your municipality's collection programmes - include waste taken to disposal sites by residents; please estimate if necessary; see guide item 2)

5. (a) Does an organized household recycling programme exist in your municipality?

Yes ☐No ☐*If no, go to Question 7*

- (b) If yes, who operates the recycling programme?
(check all items that apply; see guide item 1)

Your municipality's employees

Contractor(s) hired by your municipality

Other (please specify; see guide item 1)

- (c) What are the household recyclables collected: (check each that applies, specify additional ones and report amounts; please estimate if necessary; exclude compostable materials here; see guide item 5)

Newsprint Cardboard Fine paper Glass containers Metal containers Plastics Mixed metals Mixed paper

6. If a collection programme for recyclables is conducted, what percentage of total dwellings are provided with curbside collection?

 %

7. (a) Does an organized household hazardous waste collection/depot programme exist in your municipality?

Yes ☐No ☐

- (b) If yes, are the hazardous wastes collected: (check each that applies)

From curbside ☐Through a depot system ☐

8. (a) Does organized compostables collection programme exist in your municipality? (include collections of kitchen organic waste, yard waste, leaves and Christmas trees)

Yes ☐No ☐*If no, go to Question 9.*

- (b) If yes, estimate the amount of material diverted from the waste stream by the programme(s)

 (metric tonnes)

9. Have you or another level of government been involved in the distribution of backyard composters in your municipality?

Yes ☐No ☐

10. (a) Have any waste composition studies been done for your municipality?

Yes ☐No ☐*If no, go to Question 11.*

- (b) If yes, what is the year of the latest study?

11. Does your municipality operate any public education programmes to promote waste reduction (for example brochures, programmes in schools, public displays)?

Yes ☐No ☐

