Statistics Canada, Environment Accounts and Statistics Division

# Waste Management Industry Survey, 2000 - Business and Government Sectors Survey Guide

*Français au verso*

## Introduction, Explanations and Definitions

### Introduction

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

### What is waste?

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

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

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

### What is the waste management industry?

The Canadian waste management industry embodies two inter-related elements - governments and other public organisations that provide or make provision for waste management services and private firms that supply these services. To supply the information needed to depict these

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

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

- *Waste and recyclable materials collection* methods are curbside collection, back door pick-up, and automated collection. The waste or recytclable materials may be taken to an intermediate site or to a final disposal site.
- *Waste diversion* includes any physical transformation of materials in preparation for recycling or reuse. Such activities include sorting, cleaning, and volume reduction as well as composting.
- *Waste treatment* refers to hazardous waste and includes any physical or chemical transformation of waste such as decontamination in preparation for disposal.
- *Waste disposal* facilities include landfills and incinerators as well as facilities designed to contain hazardous wastes.

**Please exclude:**

- wastes that are associated with primary resource extraction or harvesting (e.g. farm manure, fish waste from fish processing, market garden waste, orchard and urban forest tree prunings, mine or mill tailings, forest industry waste)
- conventional air pollutants
- liquid effluents from processing or manufacturing sites
- any materials used as landfill cover
- clean or contaminated soil including soil used as landfill cover
- industrial sludge
- gravel and rocks
- by-products generically referred to as nuclear wastes

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

### Estimating sources of wastes and recyclable materials

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

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

## Definitions

### Approved quantity of waste

The total quantity of waste in a landfill that has been approved by a regulatory body, e.g., a provincial or territorial Environment Ministry or Department.

### Bottom ash

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

### Composting

Composting is an aerobic biological treatment process used most frequently in Canada at this time for management of biodegradable residential waste such as leaf and yard waste or food wastes. Another method of composting organic materials is anaerobic digestion. In Canada, this method is in its developmental stages yet a few facilities that employ this process have either been recently constructed or will be built in the near future.

### Construction and demolition waste

C&D waste, also referred to as DLC (demolition, landclearing and construction waste), refers to waste generated by construction and demolition activities. It generally includes materials such as concrete, brick, painted wood, rubble, drywall, metal, cardboard, doors, windows, wiring, etc. It excludes materials from land clearing on areas not previously developed.

### Contaminated soil

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

### Disposal fees

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

### Hazardous waste

Includes all materials that may be hazardous to human health or the environment, due to their nature or quantity, and which require special handling techniques as specified by the Transportation of Dangerous Goods Regulations (1985), The Canadian Environmental Protection Act (1988), The Basel Convention (1989), or the Export and Import of Hazardous Waste Regulations (1992).

### Hazardous waste collection services, residential

Collection of hazardous waste including materials that may be hazardous to human health or the environment, due to their nature or quantity, and which require special handling techniques as may be specified by legislation or regulation. The hazardous waste originates from residential dwellings and may include recyclable material. Waste may be taken to an intermediate site or final disposal site and may include recyclable material.

### Hazardous waste collection services, non-residential

Collection of hazardous waste as may be specified by legislation or regulation from sources such as heavy and light industry, manufacturing, agricultural, warehousing, transportation, retail and wholesale commercial activities, restaurants, offices, educational or recreational facilities, health, and other service locations. Waste may be taken to an intermediate site or final disposal site and may include recyclable material.

### Hazardous waste transfer facilities services

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

### Hazardous waste recyclable material recovery and preparation services

Recovery of hazardous recyclable material (such as used oils, solvents and batteries) from the hazardous waste stream by sorting, consolidating, reducing volume and preparing for shipment.

### Hazardous waste treatment services

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

### Hazardous waste disposal services

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

### Heavy metal solutions and residuals

Aqueous solutions with heavy metals (e.g., inorganic wastes from pigment manufacturing, neutralized solutions, sludges and residues containing heavy metals), heavy metal sludges (e.g., primary lead, zinc and copper smelting wastes), tannery waste sludges, photoprocessing / photochemical wastes, and waste mercury solutions.

### Incineration

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

### Industrial, commercial and institutional waste

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

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

### Inorganic sludges, solutions and residues

Ash, inorganic wastes (e.g., detergents and soaps), alum and gypsum sludges.

### Landfill

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

### Landfill liner or membrane

A continuous layer of synthetic material or natural clay or earth materials, placed beneath and at the sides of a landfill and intended to restrict the downward or lateral escape of waste or leachate or in some cases to restrict the upward movement of ground water into the landfill. Some landfills do not use liners and instead rely on the underlying soils capacity to filter out contaminants from the leachate. Others use clay, an artificial membrane or a combination of the two.

### Leachate

Any liquid and suspended materials which it contains, which has percolated through or drained from a landfill or other waste disposal facility.

### Leachate capture

Leachate capture refers to a system that is designed to collect leachate and move it away from the landfill in a controlled manner, where it can be stored or treated. Usually, a system such as this consists of a network of pipes along the bottom of the landfill that captures leachate and other fluids as they accumulate.

### Non-hazardous recyclable material collection services, residential

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

### Non-hazardous recyclable material collection services, non-residential

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

### Non-hazardous recyclable material collection services, commercial, institutional, agricultural, and service locations

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

**Non-hazardous recyclable material collection services, industrial locations**

Collection of non-hazardous recyclable material, e.g., cardboard, paper, plastics, metals, glass, organic waste from sources from heavy and light industry and manufacturing. Recyclable material may be taken to an intermediate site such as a material recovery facility or transfer facility.

**Non-hazardous waste transfer facility services**

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

**Non-hazardous recyclable material recovery and preparation services**

Recovery of recyclable material e.g., cardboard, paper, plastics, metals, glass, organic waste, from the non-hazardous waste stream by baling, cleaning, sorting, reducing volume and preparing for shipment.

**Non-hazardous waste**

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

**Non-hazardous waste collection services, residential**

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

**Non-hazardous waste collection services, non-residential**

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

**Non-hazardous waste collection services, construction and demolition**

Collection of non-hazardous waste such as brush and debris from the construction, demolition and renovation of buildings, bridges, roads and ports and the clearing of land. Waste may be taken to an intermediate site or to a final disposal site.

### Oils and greases, oily mixtures and residues

Waste oil and mixed oil, (e.g., waste crankcase oils and lubricants, oily water/waste oil, oily acidic solids, cutting oil).

### Organic solvents, solutions and still bottoms

Petroleum distillates, halogenated and non-halogenated still bottoms, halogenated and non-halogenated solvents with heavy metals, aromatic solvents and residues.

### Other hazardous waste

Pathological wastes (e.g., anatomical wastes, non-anatomical wastes, and sharps waste, such as needles and scalpels) and other biological-infectious wastes as well as used batteries (e.g., carbon, nickel, cadmium, lead, and zinc).

### Other waste management activity / revenue

These may include consulting fees, education programs or other revenue streams that are not listed in the Financial and Employment Section of the questionnaire.

### Other non-ferrous metals

Examples include (but are not limited to): nickel, precious metals, mercury and lead.

### Other non-waste management activity / revenue

These may include other activities and the revenues derived from such that are not considered to be waste management-oriented within the definitions contained in this Guide.

### PCB wastes

Polychlorinated Biphenyls, (PCB) wastes used in electrical insulating fluids in capacitors and transformers, among other applications.

### Pesticide and herbicide wastes

Halogenated and non-halogenated pesticide, herbicide and fungicide wastes.

### Quantity of compost produced

The quantity, by weight, of compost that is produced by a central composting facility.

### Quantity of materials entering the facility

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

### Recyclable material

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

### Recycling

Recycling is defined as the process whereby a recyclable material (e.g., glass, metal, plastic, paper) is diverted from the waste stream in order to be remanufactured into a new product, or is used as a raw material substitute.

### Residential waste

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

It includes:

- waste managed on-site such as backyard composting and grasscycling;
- the waste picked up by the municipality, (either using its own staff, or through contracted companies), and
- the waste from residential sources which is self-hauled to depots, transfer stations and landfills.

### Sources of materials

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

### Sale of recovered materials

Sale of recovered and recyclable material, (e.g., cardboard, paper, plastics, metals, glass, organic waste) recovered from a waste stream.

### Transfer facility

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

**Conversions**

One cubic yard = 0.764 cubic metres

1 kilogram = 2.2 pounds

1 tonne = 1000kg = 2200 pounds

**Is there anything we missed or do you have any more questions?**

If so, please contact:

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