



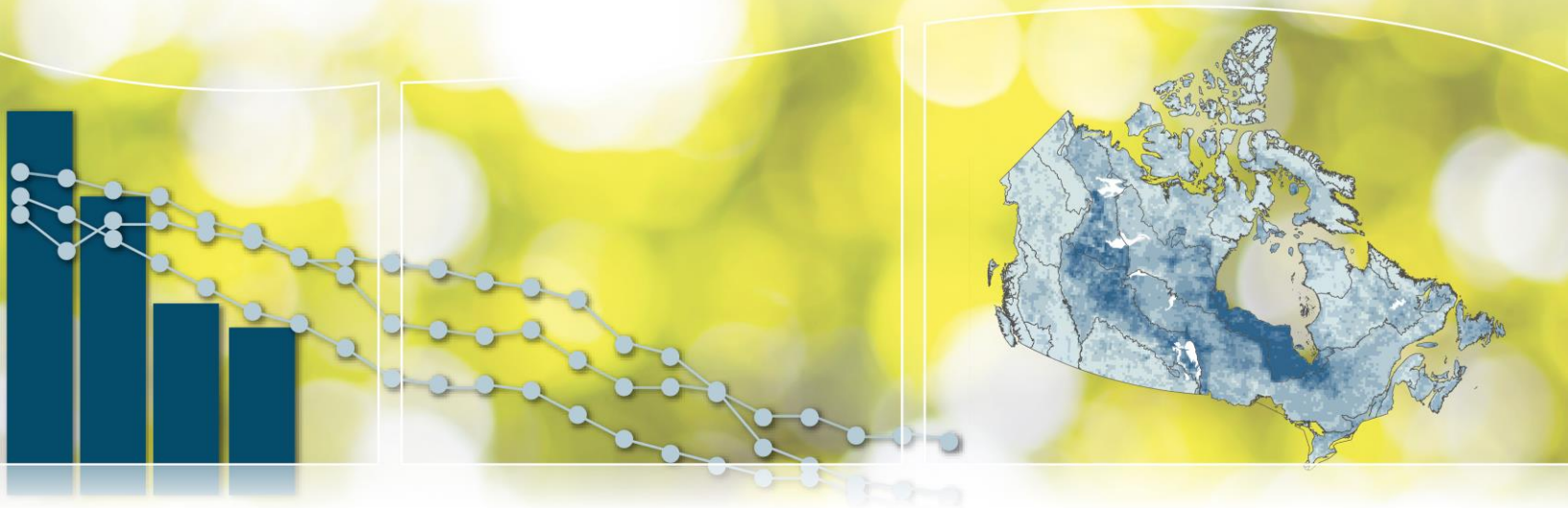
Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



Canadian Environmental Sustainability Indicators

Solid Waste Disposal and Diversion



Suggested citation for this document: Environment and Climate Change Canada (2016)
Canadian Environmental Sustainability Indicators: Solid Waste Disposal and Diversion.
Consulted on *day Month, year*.
Available at: www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=D2EA2E21-1.

Cat. No.: En4-144/71-2015E-PDF
ISBN: 978-0-660-03761-5

Unless otherwise specified, you may not reproduce materials in this publication, in whole or in part, for the purposes of commercial redistribution without prior written permission from Environment and Climate Change Canada's copyright administrator. To obtain permission to reproduce Government of Canada materials for commercial purposes, apply for Crown Copyright Clearance by contacting:

Environment and Climate Change Canada
Public Inquiries Centre
7th floor, Fontaine Building
200 Sacré-Coeur boul.
Gatineau QC K1A 0H3
Telephone: 819-938-3860
Toll Free: 1-800-668-6767 (in Canada only)
Fax: 819-994-1412
TTY: 819-994-0736
Email: ec.enviroinfo.ec@canada.ca

Photos: © Thinkstockphotos.ca; © Environment and Climate Change Canada

© Her Majesty the Queen in Right of Canada, represented by the Minister of Environment and Climate Change, 2016

Aussi disponible en français

Canadian Environmental Sustainability Indicators

Solid Waste Disposal and Diversion

March 2016

Table of Contents

Part 1. Solid Waste Disposal and Diversion Indicator	5
Solid waste diversion rate by source.....	6
Solid waste diversion by type of material	7
Part 2. Data Sources and Methods for the Solid Waste Disposal and Diversion Indicator.....	8
Introduction.....	8
Description and rationale of the Solid Waste Disposal and Diversion indicator	8
Data	8
Methods	9
Caveats and limitations	9
Part 3. Annexes	10
Annex A. Data tables for the figures presented in this document	10
Annex B. References and additional information	12

List of Figures

Figure 1. Solid waste disposal and diversion, Canada, 2002 to 2012.....	5
Figure 2. Solid Waste diversion rate by source, Canada, 2002 to 2012	6
Figure 3. Solid waste diversion by type of material, Canada, 2002 to 2012.....	7

List of Tables

Table A.1. Data for Figure 1. Solid waste disposal and diversion, Canada, 2002 to 2012 10

Table A.2. Data for Figure 2. Solid Waste diversion rate by source, Canada, 2002 to 2012 10

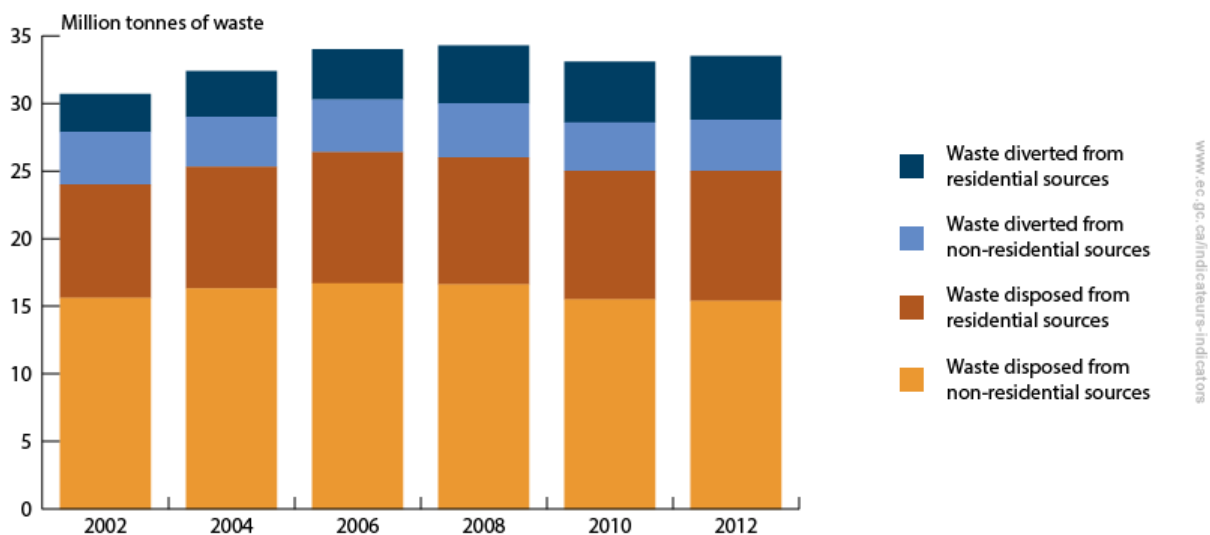
Table A.3. Data for Figure 3. Solid waste diversion by type of material, Canada, 2002 to 2012 11

Part 1. Solid Waste Disposal and Diversion Indicator

From 2002 to 2012, the total amount of solid waste¹ disposed and diverted in Canada grew from 30.7 to 33.5 million tonnes, with a peak of 34.3 million tonnes in 2008.

While the residential sector is the dominant source of the growth in total annual solid waste generated from 2002 to 2012, an increasing share of residential waste is being diverted. On a per capita basis, residential waste diversion increased by 51%, while residential waste disposal increased by 2%. Diversion of non-residential waste remained relatively stable over this period.

Figure 1. Solid waste disposal and diversion, Canada, 2002 to 2012



[Data for Figure 1](#)

Source: Statistics Canada (2015) [CANSIM Table 153-0041 – Disposal of waste, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#). Statistics Canada (2015) [CANSIM Table 153-0042 – Materials diverted, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#).

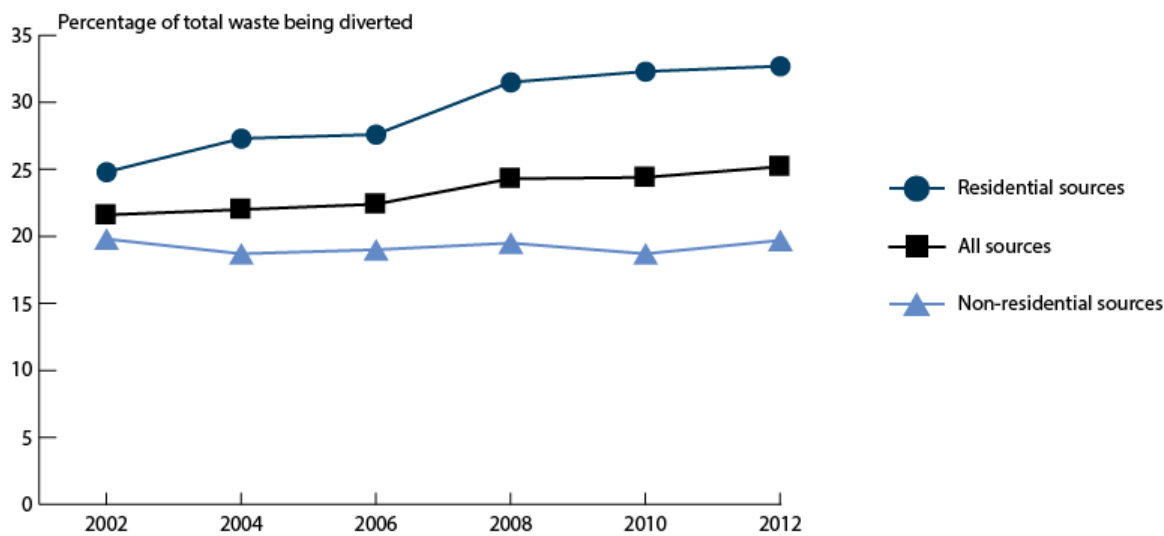
In Canada, the responsibility for managing non-hazardous solid waste and reducing the amount of waste sent for disposal is shared among the provincial, territorial and municipal governments. Waste in landfills can contribute to environmental impacts such as air emissions, land disturbance and water pollution. These impacts occur both during and after the lifetime of the landfill site. Waste can be diverted from landfills by activities such as recycling or composting. These have the added benefit of also helping to conserve natural resources. Also, the use and processing of recycled waste often requires less energy and produces less pollution and greenhouse gas emissions compared to raw material extraction and processing.

¹ For more details about what constitutes solid waste in the context of this indicator, please refer to section Data source in Part 2 of this document.

Solid waste diversion rate by source

Between 2002 and 2012, the share of solid waste being diverted from disposal increased from 21.6% to 25.2% of the total waste generated. This increase was attributed to higher diversion from residential sources,² which increased from 24.8% to 32.7% over the period. The share of waste diverted from non-residential³ sources was relatively stable during this time.

Figure 2. Solid Waste diversion rate by source, Canada, 2002 to 2012



[Data for Figure 2](#)

Source: Statistics Canada (2015) [CANSIM Table 153-0041 – Disposal of waste, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#). Statistics Canada (2015) [CANSIM Table 153-0042 – Materials diverted, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#).

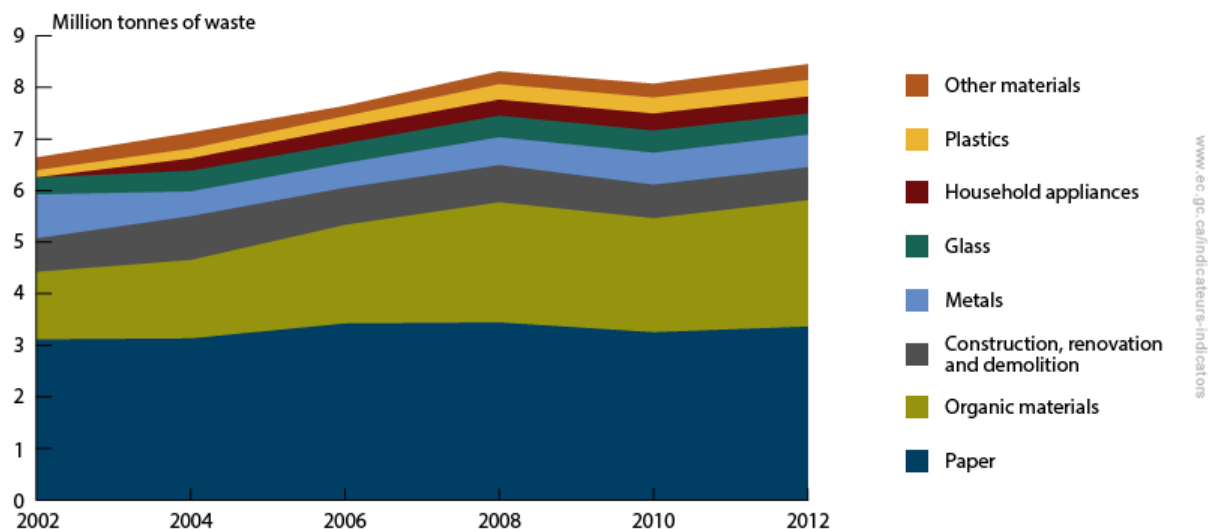
² Residential waste includes solid waste from primary and seasonal dwellings.

³ Non-residential waste includes waste from the industrial, commercial and institutional (ICI) sectors, as well as construction, renovation and demolition waste.

Solid waste diversion by type of material

Paper products are the most common type of material diverted for recycling. However, the increase in the total amount of solid waste being diverted between 2002 and 2012 was largely due to an increase in the diversion of organic materials.⁴

Figure 3. Solid waste diversion by type of material, Canada, 2002 to 2012



[Data for Figure 3](#)

Note: Other materials include electronics, tires and other unclassified materials.

Source: Statistics Canada (2015) [CANSIM Table 153-0043 – Materials diverted, by type, Canada, provinces and territories, every 2 years \(tonnes\)](#).

⁴ Organic materials include materials that are or were once living, such as leaves, grass, yard trimmings, agricultural crop residues, wood waste, paper and paperboard products or food scraps.

Part 2. Data Sources and Methods for the Solid Waste Disposal and Diversion Indicator

Introduction

The [Solid Waste Disposal and Diversion](#) indicator is part of the [Canadian Environmental Sustainability Indicators](#) (CESI) program, which provides data and information to track Canada's performance on key environmental sustainability issues.

Description and rationale of the Solid Waste Disposal and Diversion indicator

Description

The Solid Waste Disposal and Diversion indicator reports on the total quantity of non-hazardous solid waste disposed and diverted by municipal governments and businesses in the waste management industry, the diversion rate by source (residential and non-residential) and the types of materials diverted.

Rationale

Tracking the trends in waste disposal and diversion can provide useful context in understanding how consumers and industry make use of existing waste disposal and diversion programs. It also helps to provide an understanding of the related implications for the natural environment.

Data

Data source

Information on the physical quantities of non-hazardous wastes collected, disposed of and recycled in Canada is collected biennially by Statistics Canada through two surveys: the [Waste Management Industry Survey: Government Sector](#), which covers operations and facilities owned by local governments within Canada and other local bodies engaged in the delivery of waste management services, and the [Waste Management Industry Survey: Business Sector](#), which covers those operations and facilities owned by businesses that provided waste management services.

In the context of this indicator, waste includes non-hazardous solid wastes from residential and industrial, commercial and institutional (ICI) sectors disposed and diverted through municipal governments and the waste management industry. The indicator includes construction, renovation and demolition waste. It excludes material that bypasses the waste management stream captured by the surveys (this includes any materials not processed in a material recycling facility, such as packaging material recycled directly by retailers, or the reuse of bottles handled through a bottle-return program). Disposed waste includes waste materials sent to landfills, to incinerators or to facilities that generate energy from waste. Diverted waste includes waste materials that go through any physical transformation, such as composting, separation or sorting in preparation for recycling or reuse.

Residential waste includes solid waste from primary and seasonal dwellings. Non-residential waste includes waste from the ICI sectors, as well as construction, renovation, and demolition waste. Industrial waste is generated by manufacturing and primary and secondary industries. Commercial waste is generated by commercial operations, such as shopping

centres and offices. Some commercial waste (e.g., from small street-front stores or restaurants) may be picked up along with residential waste. Institutional waste is generated by institutional facilities, such as schools, hospitals, government facilities, senior homes and universities.

Spatial coverage

The indicator provides national coverage.

Temporal coverage

The data is reported biennially from 2002 to 2012.

Data completeness

The [Waste Management Industry Survey](#) is a census with a population cut-off for the government sector survey and a revenue cut-off for the business sector survey. It also covers municipalities with a disposal or diversion facility within its jurisdiction and businesses falling into the following classifications of the 2012 version of the [North American Industry Classification System](#) (NAICS): Waste Collection (NAICS 56211), Waste Treatment and Disposal (NAICS 56221), and Material Recovery Facilities (NAICS 56292). Some other NAICS are covered where it is clear that a waste management activity is taking place.

Data timeliness

Statistics Canada administers the [Waste Management Industry Survey](#) every two years. The most recent survey was conducted in 2012 and the results were released in 2015.

Methods

The indicator is calculated by adding together the weight of all types of material disposed and diverted from residential and non-residential sources. The diversion rate was calculated as the percentage of waste diverted relative to the total waste disposed and diverted as reported to the two waste surveys.

Caveats and limitations

The [Waste Management Industry Survey](#) includes imputed values in cases where values were missing or where the respondent did not complete a questionnaire even after extensive follow-up.

In accordance with the definition of waste used by the Canadian Council of Ministers of the Environment (CCME), the following types of waste are excluded from the survey:

- 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).
- Conventional air pollutants.
- Liquid effluents from processing or manufacturing sites.
- Any materials used as landfill cover.
- Clean or contaminated soil, including soil used as landfill cover.
- Industrial sludge.
- Gravel and rocks.
- By-products generically referred to as nuclear wastes.
- Oil field waste.
- Waste from portable toilets.

Part 3. Annexes

Annex A. Data tables for the figures presented in this document

Table A.1. Data for Figure 1. Solid waste disposal and diversion, Canada, 2002 to 2012

Year	Waste diverted from residential sources (million tonnes)	Waste diverted from non-residential sources (million tonnes)	Waste disposed from residential sources (million tonnes)	Waste disposed from non-residential sources (million tonnes)	Waste diverted from residential sources (kilograms per capita)	Waste disposed from residential sources (kilograms per capita)
2002	2.8	3.9	8.4	15.6	89	269
2004	3.4	3.7	9.0	16.3	105	281
2006	3.7	3.9	9.7	16.7	114	299
2008	4.3	4.0	9.4	16.6	129	281
2010	4.5	3.6	9.5	15.5	133	278
2012	4.7	3.8	9.6	15.4	134	276

Source: Statistics Canada (2015) [CANSIM Table 153-0041 – Disposal of waste, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#). Statistics Canada (2015) [CANSIM Table 153-0042 – Materials diverted, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#).

Table A.2. Data for Figure 2. Solid Waste diversion rate by source, Canada, 2002 to 2012

Year	Residential sources diversion rate (percentage of waste being diverted)	Non-residential sources diversion rate (percentage of waste being diverted)	All sources diversion rate (percentage of waste being diverted)
2002	24.8	19.8	21.6
2004	27.3	18.7	22.0
2006	27.6	19.0	22.4
2008	31.5	19.5	24.3
2010	32.3	18.7	24.4
2012	32.7	19.7	25.2

Source: Statistics Canada (2015) [CANSIM Table 153-0041 – Disposal of waste, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#). Statistics Canada (2015) [CANSIM Table 153-0042 – Materials diverted, by source, Canada, provinces and territories, every 2 years \(tonnes\)](#).

Table A.3. Data for Figure 3. Solid waste diversion by type of material, Canada, 2002 to 2012

Type of material	2002 (million tonnes)	2004 (million tonnes)	2006 (million tonnes)	2008 (million tonnes)	2010 (million tonnes)	2012 (million tonnes)
Other materials	0.25	0.31	0.20	0.25	0.27	0.31
Plastics	0.14	0.19	0.23	0.30	0.31	0.32
Household appliances	n.a.	0.24	0.30	0.31	0.33	0.33
Glass	0.33	0.40	0.38	0.42	0.43	0.41
Metals	0.85	0.48	0.48	0.54	0.62	0.63
Construction, renovation and demolition	0.65	0.85	0.72	0.72	0.65	0.64
Organic materials	1.31	1.52	1.91	2.33	2.21	2.45
Paper	3.11	3.13	3.42	3.44	3.25	3.36

Note: n.a.: not available. Other materials include electronics, tires and other unclassified materials.

Source: Statistics Canada (2015) [CANSIM Table 153-0043 – Materials diverted, by type, Canada, provinces and territories, every 2 years \(tonnes\)](#).

Annex B. References and additional information

References and further reading

Babooram A and Wang J (2007) [Recycling in Canada](#). Statistics Canada. Retrieved on 10 June, 2015.

Statistics Canada (2011) [North American Industry Classification System \(NAICS\) Canada 2012](#). Retrieved on 10 June, 2015.

Statistics Canada (2015) [Waste Management Industry Survey: Business and Government Sectors](#). Retrieved on 10 June, 2015.

Related information

[Canadian Council of Ministers of the Environment – Waste](#)

[Environment and Climate Change Canada – Managing and Reducing Waste](#)

www.ec.gc.ca

Additional information can be obtained at:

Environment and Climate Change Canada

Public Inquiries Centre

7th floor, Fontaine Building

200 Sacré-Coeur boul.

Gatineau, QC K1A 0H3

Telephone: 1-800-668-6767 (in Canada only) or 819-938-3860

Fax: 819-994-1412

TTY: 819-994-0736

Email: ec.enviroinfo.ec@canada.ca