



Statistics Canada
www.statcan.gc.ca

Measuring solid waste: The waste management industry survey program at Statistics Canada

*Recycling Council of Alberta
Recycling in the Rockies Conference*

October 1-3, 2014



Our environmental surveys

- Survey of Environmental Protection Expenditures
- Survey of Environmental Goods and Services
- Waste Management Industry Surveys
- Hazardous Waste Management Industry Survey (externally funded)
- Households and the Environment Survey
 - Energy Supplement

- Industrial Water Survey
- Agricultural Water Use Survey
- Survey of Drinking Water Treatment Plants



The Waste Management Industry Survey

- Targeted information
 - Quantities of non-hazardous waste
 - Disposal, diversion (recycling & composting), exports, imports
 - Per capita disposal rates calculated using Census of Population data
 - Financial information
 - Revenues from tipping fees, collection activities, marketing of recycled goods, utility bills, grants, levies, etc.
 - Expenditures - current and capital
 - Part-time and full-time employment
- Information captured on one of two questionnaires: one sent to government administrations, one to businesses



Business sector

- Sent to waste management firms, including those that:
 - collect solid waste and recyclables
 - operate solid non-hazardous waste disposal facilities as well as recycling and composting facilities

- The survey universe is derived from Statistics Canada's Business Register

- The surveyed units are determined using the following criteria:
 - revenue and employment levels that vary according to the province/territory of operation
 - 2010: Number of surveys returned = 405

Government sector

- Sent to public bodies that have waste management programs, including:
 - local governments
 - waste management boards and commissions
 - provincial waste programs
- The surveyed units are determined as follows:
 - population served: threshold varies according to province / territory
 - municipalities with waste disposal or material recycling facility within its borders
 - 2010: Number of surveys returned = 649

Survey response rates

- Strong response to the survey continues:

	2000	2002	2004	2006	2008	2010
• Business sector:	71%	70%	85%	83%	79%	75%
• Government Sector:	85%	89%	93%	88%	93%	87%

- High response rates a result of:

- Statistics Canada's ability to conduct extensive follow-up efforts using professional interviewers
- mandatory nature of the surveys
- familiarity of survey content to many respondents
- acknowledgement of the importance of this data



Waste disposal and diversion: a snapshot of the industry in 2010

Disposal of waste by province and territory

	total waste disposal			waste disposal per capita		
	2008	2010	percentage change 2008 - 2010	2008	2010	percentage change 2008 - 2010
	tonnes		percent	kilograms		percent
Canada	25,907,467	24,883,546	-4%	778	729	-6%
Newfoundland and Labrador	380,176	394,235	4%	751	770	3%
Prince Edward Island	x	x	x	x	x	x
Nova Scotia	354,231	367,246	4%	378	389	3%
New Brunswick	479,461	475,265	-1%	642	631	-2%
Quebec	6,146,319	5,795,707	-6%	793	733	-8%
Ontario	9,631,559	9,247,415	-4%	745	699	-6%
Manitoba	945,441	951,612	1%	784	770	-2%
Saskatchewan	902,943	937,268	4%	891	897	1%
Alberta	4,147,558	3,917,492	-6%	1155	1052	-9%
British Columbia	2,811,568	2,658,271	-5%	641	587	-8%
Yukon Territory, Northwest Territories, Nunavut	x	x	x	x	x	x

Waste disposal by source

- Residential waste disposal fell by 1% from 2008, while non-residential disposal decreased by 6%.
- Alberta had the highest proportion of waste disposed from non-residential sources at 75%, followed by Saskatchewan at 70%.
 - National average: 63%
- Quebec had the lowest proportion, where disposal is basically evenly split between residential and non-residential sources

Per capita waste disposal, by source

- Each Canadian disposed 271 kilograms of residential waste and 458 kilograms of non-residential waste in 2010
- Alberta: highest per capita disposal of non-residential waste (791 kg)
 - Down from 878 kg in 2008
- Newfoundland and Labrador: highest amount of residential waste disposal per capita (367 kg).



Waste diversion

- Total amount of waste diverted from landfill dropped 3% from 2008 to just over 8 million tonnes in 2010
 - Slightly more than half is derived from residential sources (56%)
- Nationally, Canada diverted almost 25% of its total waste
- Per capita, Canadians diverted 236kg of waste in 2010

Provincial waste diversion

- Saskatchewan increased the amount of material diverted from landfill: increases in paper fiber and organics processing
 - however overall diversion rate remains lower than the national average (13%)
- Alberta's diversion rate increased from 2008, however remains lower than the national average (15%)
 - may be the result of large proportion of non-residential waste that doesn't as easily find its way into diversion stream, compared to residential
- BC's diversion rate stable (35%); 10% higher than the national average

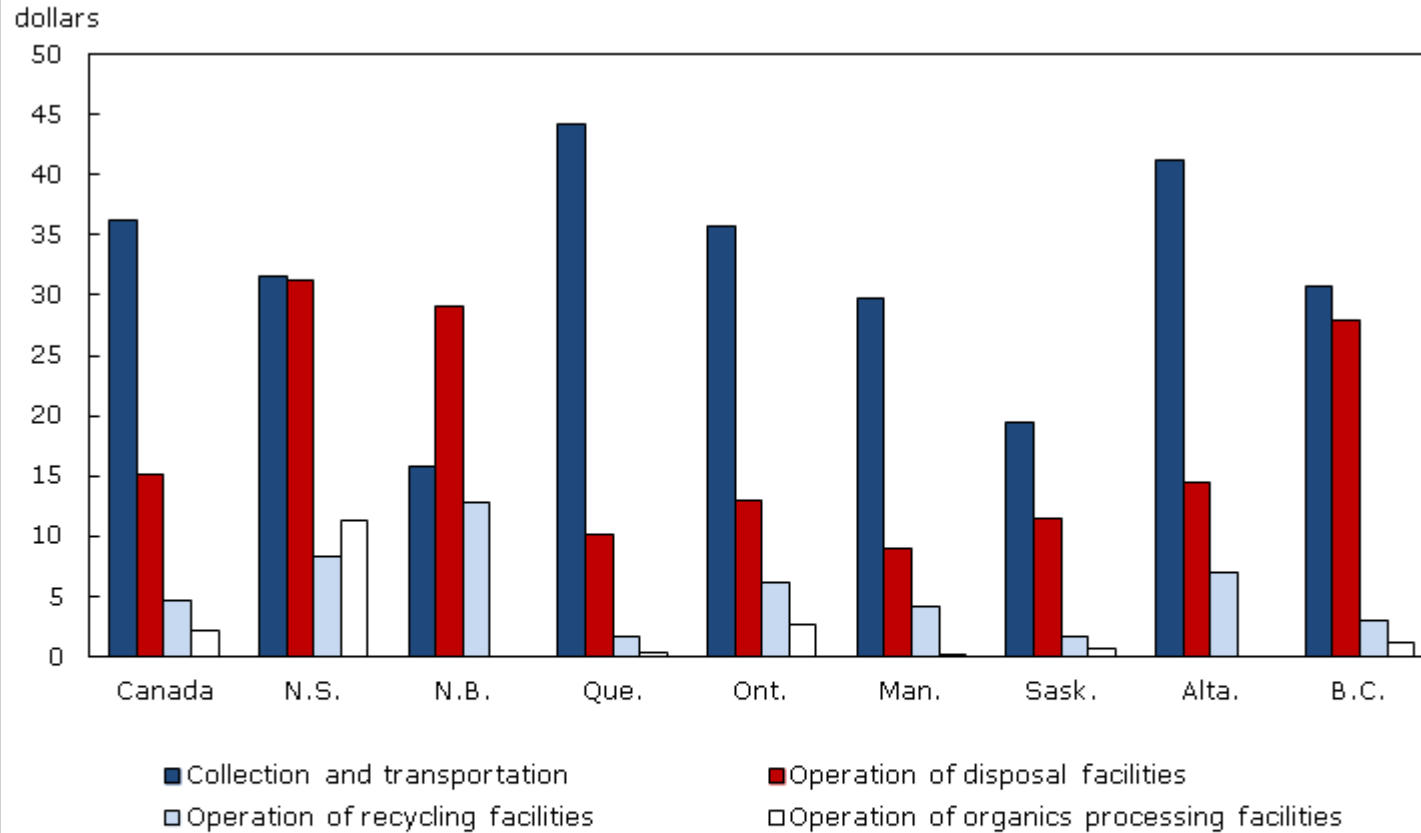
Diversion by material

- Most materials experienced an increase in diversion amounts, notably:
 - Ferrous metals (up 79,000 t); Plastics (up 16,000 t); Electronics (up almost 15,000 t)
- The largest percentage increase in diversion was for electronic materials (60% increase over 2008)
- Paper fibres (newsprint, cardboard and mixed paper fibres) and organic materials continue to be the two most important materials being diverted from landfill, combined accounting for almost 70% of all diverted materials

Local government waste management: Sector profile, 2010

- Part-time employment: 1,479
- Full-time employment: 6,337
- Operating revenues: \$2.3 billion
- Total expenditures: \$3.5 billion
 - Operating – \$3 billion
 - Capital - \$500 million
- Majority of operating costs to governments are for waste collection and operation of landfills (60% of total)

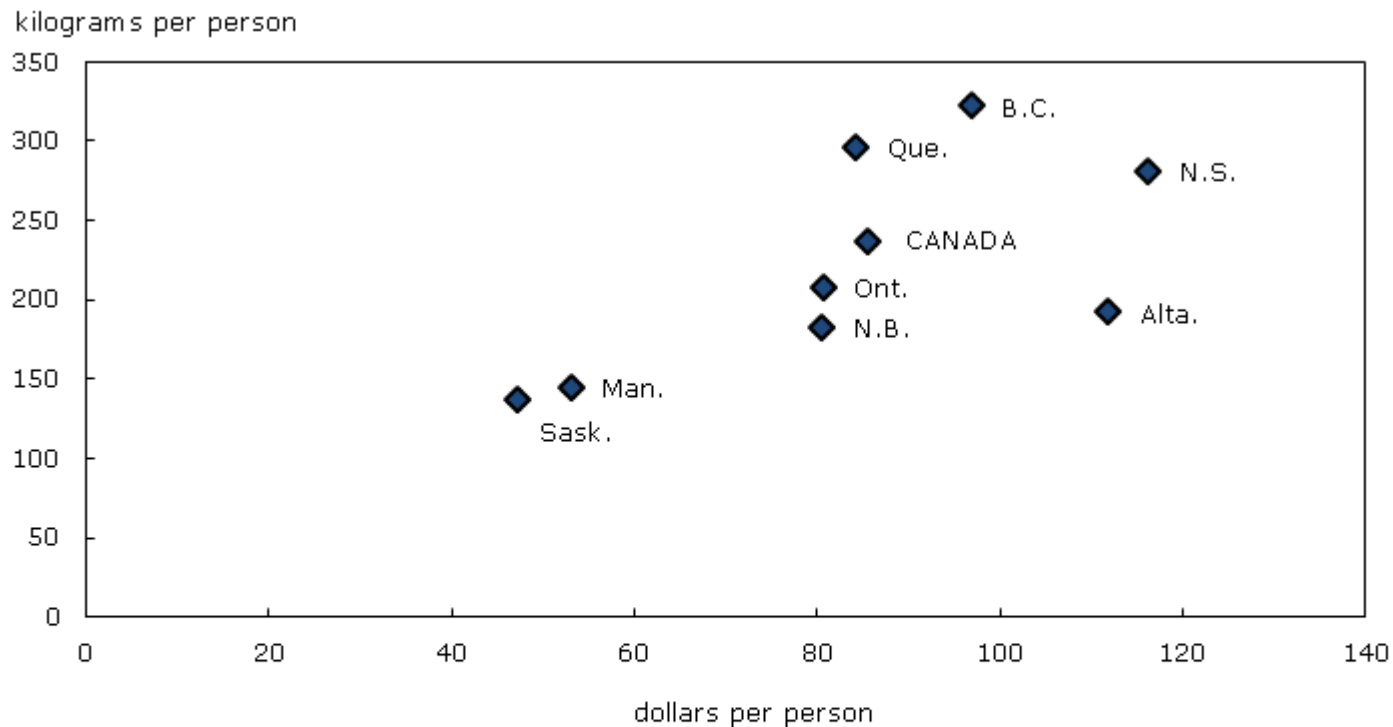
Per capita local government current expenditures, by type of waste management activity, 2010



Note(s): Data for Newfoundland and Labrador, Prince Edward Island, Yukon, Northwest Territories, and Nunavut are not included in order to meet confidentiality requirements of the Statistics Act. For the same reason, the government expenditures related to the operation of organics processing facilities for New Brunswick and Alberta are not included.

Source(s): Statistics Canada, CANSIM tables 051-0001 and 153-0045 (accessed August 21, 2013).

Waste diverted and local government current expenditures for selected provinces, 2010



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

Source(s): Statistics Canada, CANSIM tables 051-0001, 153-0043 and 153-0045 (accessed August 21, 2013).

Waste management businesses in Canada: Sector profile, 2010

- 1,697 businesses
- Part-time employment: 1,482
- Full-time employment: 25,779
- Operating revenues: almost \$6 billion
 - 2% increase over 2008
- Total expenditures: \$5.3 billion
 - Operating - \$5 billion
 - Capital - \$300 million



Results and future work

- 2012 reference year survey results will be available in spring 2015
- Consultation is beginning to address data gaps, particularly in the area of waste diversion and source-sector generation and disposal
 - Discussions with RCA and other stakeholders to determine their data needs and how STC can help to fulfill them

Results and future work

- Goal of research is to identify ways to close gaps and publish more detailed data tables
 - UN’s System of Environmental and Economic Accounts (SEEA) used as the model

Waste Supply–Generated (Tonnes)									
	Manufacturing	Mining	Construction	Waste Management	Other Industries	General Government	Households	Imports	Total Supply
Paper & Cardboard									
Glass									
Plastics									
Metals									
Organics									
Construction									
Demolition									
Electrical & Electronic									
Solid Hazardous Waste									
Liquid Waste									
Mixed/General									
Total									

Source: Adapted from Australia Bureau of Statistics, *Supply Generated Waste Tracking*

