Canada's Core Public Infrastructure Survey: Solid waste and asset management, 2020

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Improving solid waste management is an important element in achieving Sustainable Development Goals (SDGs). Modernizing waste management facilities with new technologies is critical to minimize environmental impacts of landfills and to reduce the amount of waste sent to landfills. According to Canada's National Inventory Report, municipal solid waste landfills were responsible for about 23.9% of Canada's methane emissions in 2020. Still, these emissions had decreased by 3.5% from 2005 to 2020. Results from Canada's Core Public Infrastructure Survey for 2020 indicate some improvement in the closure or renewal of aging facilities. In 2020, 47.9% of active waste disposal facilities (including active landfills and dump sites, incinerators, and facilities that generate energy from waste) were built prior to 2000 compared with 70.9% in 2016. Similarly, the share of waste diversion facilities (facilities that divert waste materials through composting, anaerobic digestion or recycling) constructed before 2000 decreased from 25.6% in 2016 to 17.1% in 2020.

Today's release also highlights the asset management practices of core public infrastructure owners in Canada and provides new data for SDGsIndicator 13.3.1 – Proportion of municipal organization who factored climate change adaptation into their decision-making process. In 2020, more than half (52.7%) of municipal organizations factored climate change adaptation into their decision-making process for storm water infrastructure, while just over one-quarter (27.0%) factored climate change adaptation into their decision-making process for solid waste infrastructure.

Quebec and Alberta lead in materials recovery facilities, Ontario and Saskatchewan in composting facilities

In 2020, Alberta had the largest amount of publicly owned waste diversion facilities (144), followed by Quebec (140), Saskatchewan (117), and Ontario (115). Local, regional and provincial government organizations in Quebec and Alberta owned more than half (52.7%) of all materials recovery facilities (including sorting and recycling facilities) in Canada, while almost half (49.7%) of publicly owned composting facilities were located in Ontario and Saskatchewan.

Of the publicly owned solid waste facilities that completed construction in 2019 and 2020, Quebec accounted for 44.4% of materials recovery facilities, and Saskatchewan accounted for more than half (58.1%) of composting facilities.

More waste facilities focus on recycling and composting than on active disposal in urban municipalities

Solid waste tends to be processed in rural areas. In 2020, over half (50.2%) of waste disposal facilities and waste diversion facilities were owned by rural municipalities, where less than one-fifth (16.8%) of the Canadian population lives.

Rural municipalities owned twice as many active dump sites (excluding closed dump sites) and engineered landfills as waste diversion facilities in 2020. In contrast, urban municipalities owned more waste diversion assets (214) than active disposal facilities (196).

Between 2010 and 2020, rural municipalities completed construction of more active disposal facilities (excluding closed sites) (185), than waste diversion facilities (155). On the other hand, urban municipalities brought into service more than double the amount of waste diversion facilities (91) than active disposal facilities (37) during that period.

Waste diversion assets are newer and in better condition than active disposal facilities

Almost two-thirds (64.8%) of publicly owned waste diversion assets completed construction after 1999, with a similar proportion of these rated in good or very good condition (69.3%). Meanwhile, close to half (47.9%) of publicly owned active disposal assets date from before 2000, and fewer were reported in good or very good condition in 2020 (57.3%).

Table 1
Number of publicly owned solid waste assets, by type, Canada

	2020
	number
Transfer stations	1,647
Waste diversion facilities	718
Composting facilities	294
Materials recovery facilities	402
Anaerobic digestion facilities	22
Waste disposal facilities	2,704
Engineered landfills (active)	553
Dump sites (active)	590
Closed sites (inactive engineered landfills and dumps)	1,513
Incinerators	25
Energy from waste facilities	23

Source(s): Table **34-10-0236-01**.

More urban municipalities factor climate change adaptation in decision-making than rural municipalities in Canada

Compared with 2018, more municipalities in 2020 factored climate change adaptation into their decision-making for core public infrastructure, with the exception of solid waste management. Close to three-fifths (58.5%) of local, regional, provincial, and territorial government organizations (2,160 out of 3,691 organizations) factored climate change adaptation into their decision-making process related to at least one core public infrastructure, up from 51.4% in 2018. Among core public infrastructure, water-related infrastructure was where organizations most commonly considered climate change adoption in their decision-making, with storm water at 52.9%, wastewater at 48.6%, potable water at 47.1%, and roads at 46.5%.

Compared with rural municipalities, a greater share of urban municipalities factored climate change adaptation into their decision-making process across all nine infrastructure asset categories. The gap was greatest for water infrastructure, for which more than 62.4% of urban municipalities reported it being a factor (up to 71.0% in the case of storm water) compared with around 43.9% of rural municipalities.

Moreover, a higher share of urban municipalities indicated more maturity with respect to asset management planning. More than four out of five (82.2%) urban municipalities reported having reached the developing level of maturity (draft asset management plans for some assets) or better, compared with just under two-thirds (64.8%) of rural municipalities.

Note to readers

Canada's Core Public Infrastructure Survey for the year 2020 was conducted in partnership with Infrastructure Canada. The data cover topics such as the stock, condition, and performance of core public infrastructure, as well as asset management practices of owners.

Throughout this release, the term publicly owned refers to an asset being owned or leased by the provincial, territorial, regional and municipal orders of government.

The survey results cover nine asset types (public transit; roads; bridges and tunnels; potable water; stormwater; wastewater; solid waste; culture, recreation and sports facilities; and public social and affordable housing).

Data are based on responses from approximately 2,260 government organizations. The following organizations are included in the survey:

- *Provincial and territorial departments and agencies*
- *Regional governments*
- *Urban and rural municipalities (excluding First Nations communities)*
- *Selected provincial Crown corporations and public transit authorities*

Inventory counts for the 2018 reference year for municipalities may be overestimated. Census subdivisions, including unorganized and unincorporated areas, were included in the survey frame whereas only incorporated organizations were included for 2020. Data for prior years may be revised at a later date to reflect this new methodology.

Respondents were provided the following condition rating scale when asked to rate the overall physical condition of their assets:

***Very poor:** Immediate need to replace most or all of the asset. Health and safety hazards exist which present a possible risk to public safety or asset cannot be serviced/operated without risk to personnel. Major work or replacement required urgently.*

***Poor:** Failure likely and substantial work required in the short term. Asset barely serviceable. No immediate risk to health or safety.*

***Fair:** Significant deterioration is evident; minor components or isolated sections of the asset need replacement or repair now, but asset is still serviceable and functions safely at adequate level of service.*

***Good:** Acceptable physical condition; minimal short-term failure risk but potential for deterioration in the long term. Only minor work required.*

***Very good:** Sound physical condition. No short-term failure risk and no work required.*

Respondents were provided the following maturity scale when asked to rate the maturity level of their organization's asset management planning:

***Aware (Level 1):** Our approach to asset renewal focuses on reacting to basic needs (e.g., growth, regulations and known problems). We evaluate priorities based on available information, staff experience, and input from council and management.*

***Developing (Level 2):** We have draft asset management plans for some asset classes, with forecasted financial needs based on estimated data.*

***Competent (Level 3):** We have asset management plans for critical services, based on a mix of estimated and actual data. Our asset management plans include available information about level of service (current and target) and risk management. Our asset management plans identify short-term issues and priorities.*

***Optimizing (Level 4):** We have asset management plans for most services based on actual data. Our asset management plans include basic needs forecasting and risk management strategies for critical assets. Our asset management plans are based on both short- and long-term issues and priorities. They balance short-term service objectives with longer-term goals and risks. We keep our asset management plans up to date through normal business.*

***Excellent (Level 5):** We have asset management plans for all services based on actual data. Our individual asset management plans are integrated across services. Our asset management plans include needs forecasts and risk management strategies for most assets. Plans address risks to both service and business goals.*

Available tables: 34-10-0236-01 to 34-10-0247-01 , 34-10-0260-01, 34-10-0261-01, 34-10-0268-01 to 34-10-0271-01 , 34-10-0276-01 and 34-10-0277-01.

Definitions, data sources and methods: survey number 5173.

For more information about why the survey was conducted and how it will inform infrastructure policy and program development and investment decisions, please contact Infrastructure Canada (toll-free 1-877-250-7154; 613-948-1148; **infc.info.infc@canada.ca**) or Infrastructure Canada Media Relations (613-960-9251; **infc.media.infc@canada.ca**).

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; **infostats@statcan.gc.ca**) or Media Relations (**statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca**).